

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– MINOR MINERAL — NON-FOREST LAND-PATTA LAND-FRESH
QUARRY**

LEASE PERIOD-5 YEARS

CLUSTER EXTENT – 5.43.5 Ha

(2 Proposed Quarries+ 1 Existing Quarry)

THIRU. K. MAHALINGAM ROUGH STONE AND GRAVEL QUARRY

PROJECT PROPONENT	PROPOSED PROJECT	PROPOSED PRODUCTION
Thiru. K. Mahalingam, S/o. Kanthasamy, No. 8/129, Madheshwarar Kovil Thottam, Kuttigoundenpathy, Kumittipathy Post, Coimbatore District – 641 032	Extent: 3.01.0 ha S.F. Nos: 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A Sokkanur Village, Kinathukadavu Taluk, Coimbatore District	Rough Stone= 2,50,625 m ³ Weathered Rock=32,590m ³ Gravel = 34,028m ³ Peak Production = 60,850m ³ (Rough Stone) Proposed Depth=39m bgl
ToR obtained vide File No. 12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025		
Environmental Consultant GEO EXPLORATION AND MINING SOLUTIONS Old No. 260-B, New No. 17, Advaitha Ashram Road, Alagapuram, Salem – 636 004, Tamil Nadu, India Accredited for sector 1 Cat ‘A’, sector 31 & 38 Cat ‘B’ Certificate No : NABET/EIA/25-28/RA 0424 Valid Till: 06.08.2028 Phone: 0427-2431989, Email: ifthiahmed@gmail.com, geothangam@gmail.com Web: www.gemssalem.com	 	Laboratory GLOBAL LAB AND CONSULTANCY SERVICES Approved by ISO:9001:2015, NABL, FSSAI, Experts in QHSE S.F No:92/3A2, Geetha Nagar, Alagapuram Pudur, Salem-636016.
Baseline Monitoring Period March – May 2025		
December 2025		

UNDERTAKING

I, K.Mahalingam given undertaking that this EIA & EMP report prepared for our Rough stone and Gravel quarry situated in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A over an extent of 3.01.0 Ha in Sokkanur Village, Kinathukadavu Taluk and Coimbatore District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.12979 TOR Identification No. TO25B0108TN5419651N Dated: 19.12.2025

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



Thiru. K.Mahalingam

Place: Coimbatore

Dated:

DECLARATION

I Dr. M. Ifthikhar Ahmed – EIA Co Ordinator declare that the EIA & EMP report for the Rough stone and Gravel quarry in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A an extent of 3.01.0 Ha in Sokkanur Village, Kinathukadavu Taluk and Coimbatore District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu.

The Data's provided in the EIA report are 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 :

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

*PROPOSED QUARRIES				
CODE	Name of the Owner	S.F. Nos	Extent	Status
P1	Thiru. K.Mahalingam	816(P), 818, 819/1, 822/1(P), 822/2A(P), 824/1A	3.01.0 ha	File No.12979 TOR Identification No. TO25B0108TN5419651N Dated: 19.12.2025
P2	Thiru.A.Subramaniam	834/2(Part), Sokkanur	1.21.5 ha	Pending With SEIAA
Total			4.22.5 ha	
*EXISTING QUARRY				
CODE	Name of the Owner	S.F. No	Extent	Status
E-1	N.K.Ravikumar	860/1D(P) & 893/1	1.21.0 ha	29.10.2021 – 28.10.2026
TOTAL			1.21.0 ha	
EXPIRED QUARRIES				
CODE	Name of the Owner	S.F. No	Extent	Status
EX-1	Thiru.S.Kavitha	859/3A1	1.09.0 ha	22.01.2019 – 21.01.2024
EX-2	Thiru.A.Subramaniam	894	1.01.5 ha	25.01.2019 – 24.01.2024
ABANDONED QUARRY				
Nil				
TOTAL CLUSTER EXTENT*			5.43.5 Ha	

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

As per above notification S.O.2269(E) dated : 01.07.2016 in para (b) in Appendix XI,- (ii)(5): The lease not operative for three years or more and leases which have got environmental clearance as on 15th January, 2016 shall not be counted for calculating the area of cluster, but shall be included in the Environment Management Plan and the Regional Environmental Management Plan.

TERMS OF REFERENCE (ToR) COMPLIANCE

Thiru. K.Mahalingam Rough Stone & Gravel Quarry

File No.12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025

SEIAA SPECIFIC CONDITIONS		
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 2,50,625m³ of Rough Stone & 34,028m³ of Gravel up to the depth of 39m BGL and the annual peak production is 60,850m³ of Rough Stone & 14,328m³ 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
ADDITIONAL TERMS OF REFERENCE		
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 and agreed PP agreed to frame a cluster management committee, copy of (CMC) affidavit will be submitted during the appraisal meeting.
2	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	Noted and agreed. Boundary pillars have been erected at all corners of the quarry, and the relevant photographs will be submitted in the final EIA report.
3	The details of enumeration of structures including schools, colleges, primary health centers should be submitted along with the EIA report	Noted and agreed Biodiversity study has been carried out by Functional Area Expert by the NABET accredited consultant. The detailed study is given in the Chapter No.3
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	Noted and agreed The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures are given in the EIA report, Chapter No. III
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 and agreed The area has been fenced and plantation activities carried out within the project site. Details given in chapter 2.

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 biodiversity study has been conducted by a Functional Area Expert through a NABET-accredited consultant. The detailed are presented in Chapter 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 EMP for the entire life the mine, furnished in chapter 10.
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 and agreed.
2.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.	Not applicable, It is a fresh lease application.
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 & agreed. The PP obtained VAO Certificate regarding the location of habitations within 300m radius from the periphery of the site and enclosed with as 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 and agreed The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No. III
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 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
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall	Noted and agreed

	be included in EIA Report.	Biodiversity study has been carried out by Functional Area Expert by the NABET accredited consultant. The detailed study is given 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 DFO letter will be submitted along with the Final EIA/EMP report
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	Noted and agreed Proponent requested as will be carrying the slope stability Plan after commencement of quarrying operation and ensure that the reports will be submitted along with HYCR.
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 Proponent requested as will be carrying the slope stability Plan after commencement of quarrying operation and ensure that the reports will be submitted along with HYCR.
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 affidavit stating that the blasting will be carried out under the supervision of Competent person.
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
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 and agreed. There is no quarry operated by the Project Proponent
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Noted and agreed
13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Noted and agreed.
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	Noted and agreed

	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).	Noted and agreed Satellite imagery of the project area along with boundary coordinates is given in the Chapter No 2, Figure No.2.2, Page No.11. Geomorphology of the area is given in Chapter No 2, Figure No.2.10, Page No.23 Land use pattern of the project area is tabulated in the Chapter No.2. Table no 2.4, Pg.No.18
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	Noted and agreed. PP carried out the drone video survey and will be submitted during the appraisal while obtaining the EC.
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 and agreed The area has been fenced and plantation activities carried out within the project site.
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 The details of mineral reserves have been provided in Chapter No 1, Mineable reserves– 2,50,625 m ³ Peak Production – 60,850 m ³ Depth – 39m bgl
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. The PP provided 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
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	Noted and agreed The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3,
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study	Noted and agreed Baseline Data were collected for One Season (Pre-Monsoon) March – May 2025 as per CPCB Notification and MoEF & CC Guidelines. 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	Noted and agreed The Cumulative impact study due to mining operations is explained in chapter - 7

	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.	Noted and agreed
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.	Noted and agreed 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
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.
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 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.
28	Impact on local transport infrastructure due to the Project should be indicated.	Noted and agreed Transportation details mentioned in Chapter -2
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 Details of the trees in the buffer zone given in Chapter No.3&4
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 part of 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 Details are given in the Chapter No.3
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	Noted and agreed Noted & agreed. It is proposed to plant a 1500 nos of trees in the 7.5m safety barrier and village roads.

	alternating with shrubs should be planted in a mixed manner.	
33	Taller/one-year-old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Noted and agreed No trees within the project site. it is proposed to plant 1500 Nos of Trees in the safety barrier and Village roads.
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 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. Details of CER are discussed under Chapter 8
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 It is explained in Chapter -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 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 Chapter-8 discussed about benefits of projects.
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 furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Noted and agreed The EMP prepared for the life of the mine and discussed in chapter 10.
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 & agreed.
SEIAA STANDARD CONDITIONS		

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.	Noted and agreed 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, Coimbatore 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.	Noted and agreed 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 & 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.	Noted and agreed Details discussed in chapter 7 of Draft EIA report
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA Report.	Noted and agreed Details discussed in chapter-6 of Draft 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 & agreed
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	Noted and agreed Details discussed in chapter 10.
Agriculture & Agro-Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	Noted and agreed Detailed discussed in chapter 4.
10	Impact on soil flora & vegetation around the project site.	Detailed discussed in chapter 4.
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.	Noted and agreed
12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Details in Chapter 3
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted & agreed

14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock	Noted and agreed The project area is dry barren land no agriculture activities carried out.
Forests		
15	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife	Noted and agreed. Nearest Reserve Forest is Bolampatti I RF – 7.5km – North West
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Noted and agreed The area is surrounded by Barren land. 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	No major trees within the project area.
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site	Noted & agreed. Anamalai Tiger Reserve – 28.6km – South
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	Noted and agreed There are 9 open wells and 9 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method
20	Erosion Control measures	Noted & agreed
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 2
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir	Details in Chapter 2 and 4 impact of bio diversity
23	The project proponent shall study and furnish the details on potential fragmentation impact on 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. Detailed 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	Details in Chapter 3 Soil environment.
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites	Details in Chapter 3 Water environment.
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.	Noted and agreed There are 9 open wells and 9 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method
Energy		

28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Noted and agreed Details in Chapter 3 environmental monitoring details.
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	Noted and agreed Details of carbon emission and mitigation activities are given in 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 and agreed Details in Chapter-3 for meteorological and climate/weather data representation of graphs.
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	Noted and agreed Details of GHGs emissions and mitigation activities are given in the Chapter No.4
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	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 and the scope for achieving SDGs	Detailed under Chapter 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.	Detailed under Chapter 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.	Details in Study 7.3 Disaster Management Plan in Chapter -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.	Noted & agreed. Detailed under Chapter 4
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.	Noted and agreed
39	The project proponent shall study and furnish the possible pollution due to plastic and	Details of carbon emission and mitigation activities are given in the Chapter No.4

	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	
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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
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 corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Map showing – Project area is with adjacent quarries details is enclosed in Figure No1.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.1A Toposheet of the project area covering 10km radius – Figure No. 1.2 Geology map of the project area covering 10km radius - Figure No. 2.11
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.	Map showing – Geology map of the project area covering 10km radius - Figure No. 2.11 Geomorphological features are incorporated in the Toposheet map covering 10km radius around the project area Figure No. 2.12
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 10.1.
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.	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° 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 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.	Noted & agreed. The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given	Not Applicable. There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	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.	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 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.	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 Rights) 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 10 KM of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary	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.

	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.	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 'Aravalli 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 w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable. 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 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.	Not Applicable. There are no approved habitations within a radius of 300 meters. 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	Baseline Data were collected for Pre monsoon Season March – May 2025 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.

	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 modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD Model. Details in Chapter No. 4,
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 for this project is given in the chapter No 2, Table No 2.13.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water for dust suppression, greenbelt development and domestic use will be obtained from accumulated rainwater/seepage water in mine pits. Drinking water will be sourced from the approved water vendors, No 2, Table No 2.13.
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.	The rain water collected in the pits after spell of rain will be used for greenbelt development and dust suppression.
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 Quality discussed in Chapter No. 4.
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.	The ground water table is at 86-88m below ground level. The ultimate depth of this projects is 37m from the general ground profile.
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.	Highest elevation of the project area is 248m AMSL Ultimate depth of the mine is 39m Bgl Water level in the area is 105 m BGL
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.	Progressive greenbelt development plan has been prepared and discussed along with Recommended Species details are given in the Chapter 4, Table No.4.9
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	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 much significant impact due to the proposed transportation from the project area. Details in Chapter 2.

	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.	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. .
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Discussed in 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.	Details in Chapter 10.
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.	Details in Chapter 10.
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.	Details in Chapter 4,
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.	Environment Management Plan Chapter 10.
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.	The outcome of public hearing will be updated in the final EIA/EMP report
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.	No litigation is pending in any court against this 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.	The proposed capital cost for Environmental Monitoring Programme is Rs 3,80,000/- and the recurring cost is Rs 76,000/- per annum. Details in Chapter 6.
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.	Details in Chapter 10.
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	Encloses as separate volume
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 given properly.
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 mining plan
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-IA. II(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (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-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.	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. 2.2. Geological Plan – Figure No 2.9. Working Plan – Figure No 2.9. Closure Plan – Figure No.2.10.

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1. INTRODUCTION

1.0 PREAMBLE

Project History

The project proponent Thiru. K.Mahalingam has applied for Rough stone and Gravel quarry over an extent of 3.01.0 Ha in S.F.Nos. S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A Sokkanur Village, Kinathukadavu Taluk & Coimbatore District.

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 29.06.2022 & 28.07.2023
- Precise Area Communication Letter was issued by the Assistant Director, Department of Geology and Mining, Coimbatore R.C. No: 748/Mines/2022, Dated: 06.03.2025
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Coimbatore District, vide R.C.No: 748/Mines/2022, Dated: 23.09.2025
- 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
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/557121/2025 Dated: 08.11.2025
- The proposal was placed 648th SEAC meeting held on 05.12.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 931st SEIAA meeting held on 15.12.2025 and issued ToR vide File No.12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025
- As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (Cluster quarries – 2 proposals, 1 Existing quarry forming Cluster Category {Total Extent of the Cluster is 5.43.5 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 (Pre-Monsoon) i.e., **March – May 2025** and this EIA and 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) study is a process, used to identify the Environmental, Social and Economic impacts of a project prior to decision-making. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are considered during the project designing.

1.1 PURPOSE OF THE REPORT

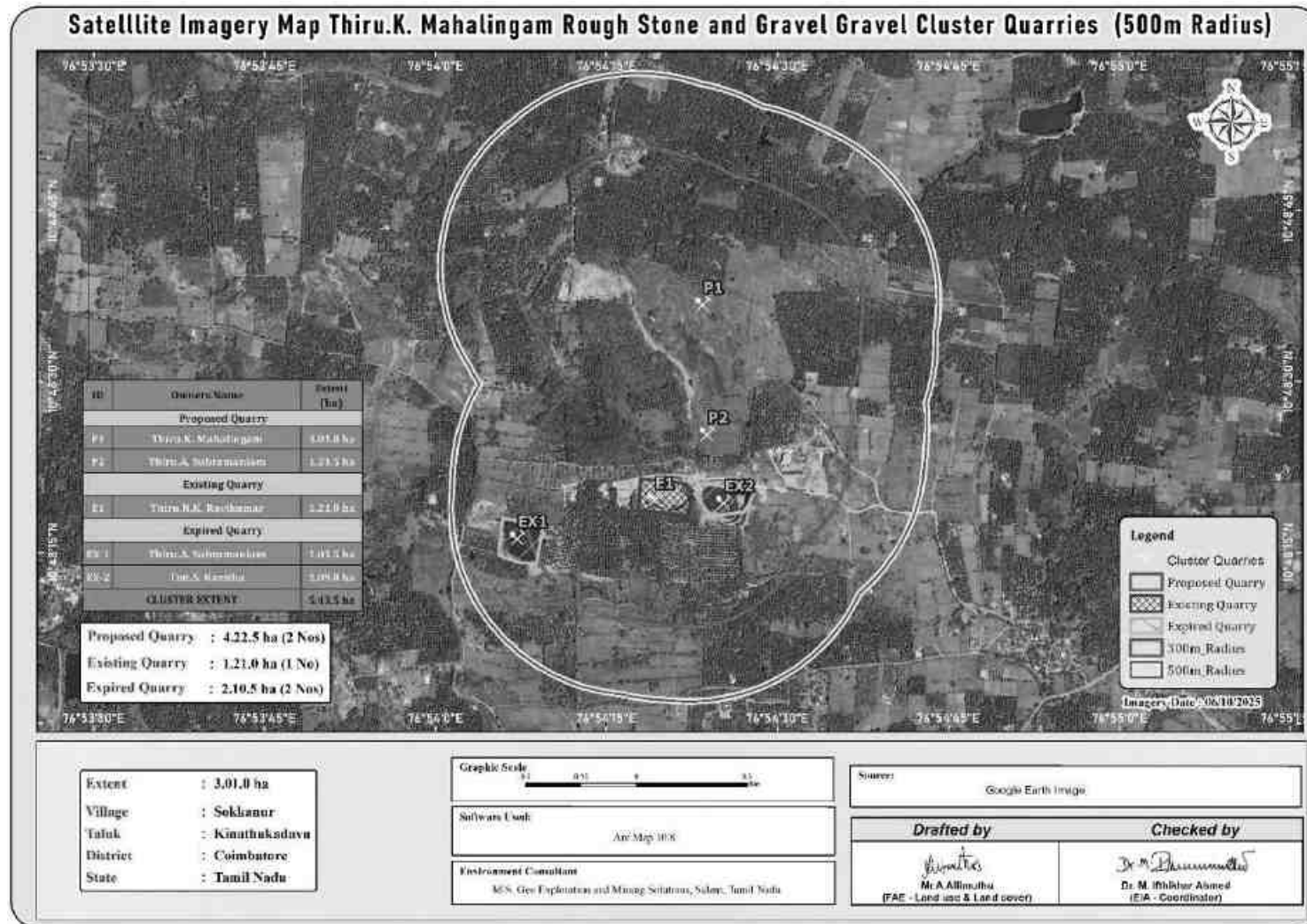
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1889 of 20th April 2022, Mining Projects are classified under two categories i.e. A (> 250 Ha) and B (≤ 250 Ha), and 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 projects are categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance.

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

FIGURE 1.1 SATELLITE IMAGERY CLUSTER QUARRIES



1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT**1.2.1 Identification of Project****TABLE 1.1: SALIENT FEATURES OF THE PROPOSED PROJECT**

Name of the Project	Thiru.K.Mahalingam Rough Stone and Gravel Quarry
S.F. No.	816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A
Extent	3.01.0 ha
Land Type	Patta Land
Village Taluk and District	Sokkanur Village, Kinathukadavu Taluk, Coimbatore District

Source: Approved Mining Plan

1.2.2 Identification of Project PropONENT**TABLE 1.2: DETAILS OF PROJECT PROPONENT**

Name of the Project PropONENT	Thiru. K.Mahalingam
Address	S/o. Kanthasamy, No. 8/129, Madheshwarar Kovil Thottam, Kuttigoundenpathy, Kumittipathy Post, Coimbatore District – 641 032
Mobile	+91 96008 15888
Status	Proprietor

Source: Approved Mining Plan.

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 for Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

TABLE 1.3: BRIEF DESCRIPTION OF THE PROJECT

Name of the Quarry	Thiru. K.Mahalingam Rough stone and Gravel quarry		
Land Ownership	It is a Own Patta land,		
SF No & Area (Ha)	816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A & 3.01.0 ha		
Village, Taluk & District	Sokkanur Village, Kinathukadavu Taluk, Coimbatore District.		
Toposheet No	58 B/13		
Latitude between	10°48'33.40"N to 10°48'40.79"N		
Longitude between	76°54'16.85"E to 76°54'27.67"E		
Highest Elevation	248m AMSL		
Proposed Depth of Mining	39m (2m Gravel +2m Weathered Rock + 35m Rough Stone) bgl		
Geological Resources	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	10,53,500m³	60,200m³	60,200m³
Mineable Reserves	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	2,50,625 m³	32,590m³	34,028m³
Year wise Production	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	2,50,625 m³	32,590m³	34,028m³
Ultimate Pit Dimension	XY-AB = 51m (L) X 69m(W) X 24m (D) BGL X1Y1-CD = 94m (L) X 97m(W) X 39m (D) BGL X2Y2-EF = 66m (L) X 64m(W) X 29m (D) BGL		
Water Level in the surrounds area	105m bgl		
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting		

Topography	The lease applied area is exhibits undulated topography. The area has gentle sloping towards Northern side. The altitude of the area is 268m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel formation. Massive Charnockite which is clearly inferred from the existing quarry pits.	
Machinery proposed	Jack Hammer	7 Nos
	Compressor	2 Nos
	Excavator with Bucket and Rock Breaker	1 No
	Tipper	3 Nos
	Water Sprinkling Tanker	1 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	31 Nos	
Project Cost	Rs. 97,79,000/-	
EMP cost	Rs. 3,80,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Odai	50m Safety North
	Kuttai	50m South
	Kumitipathi Stream	3.2km NW
	Walayar Reservoir	5.6km NW
	Koraiyar River	8.3km SE
Greenbelt Development Plan	It is proposed to plant 1500 Nos of trees in the safety barrier and village road.	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	960m SouthEast	

Source: Approved Mining Plan

1.3.2 Location of the Project

- The proposed quarry projects fall in Sokkanur Village, Kinathukadavu Taluk and Coimbatore District.
- The project is located about 22 km Southwest of Coimbatore, 12 km west of Kinathukadavu and 4.0 km West side of Sokkanur Village.

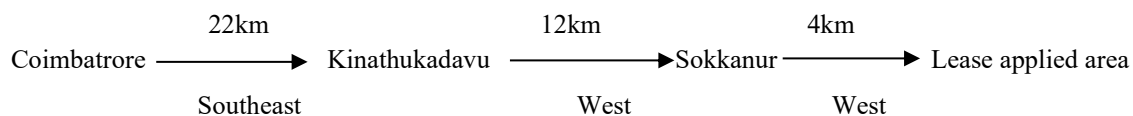
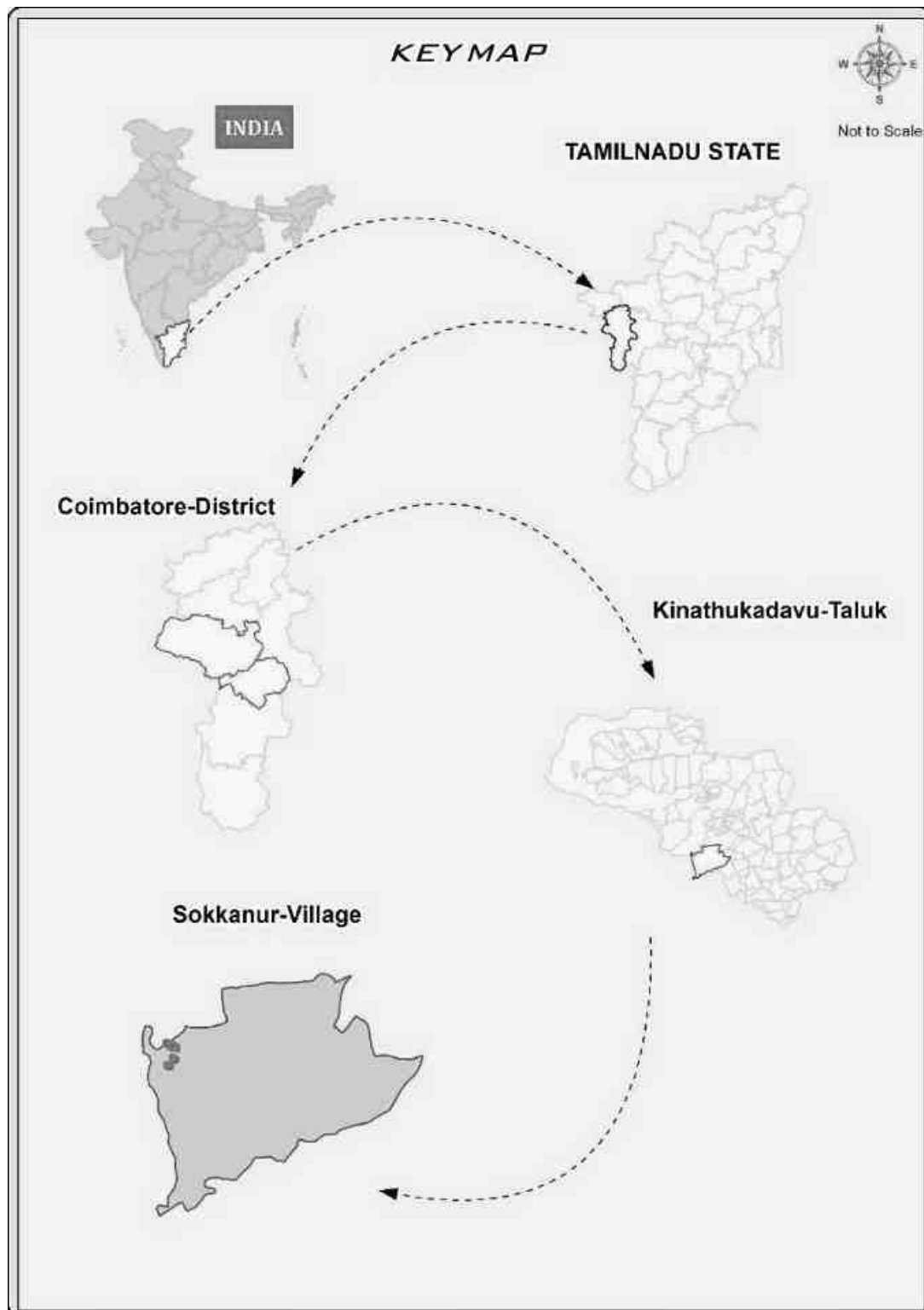


FIGURE 1.2 KEY MAP SHOWING THE LOCATION OF THE CLUSTER SITE



Source: Survey of India Toposheet 58-B/13

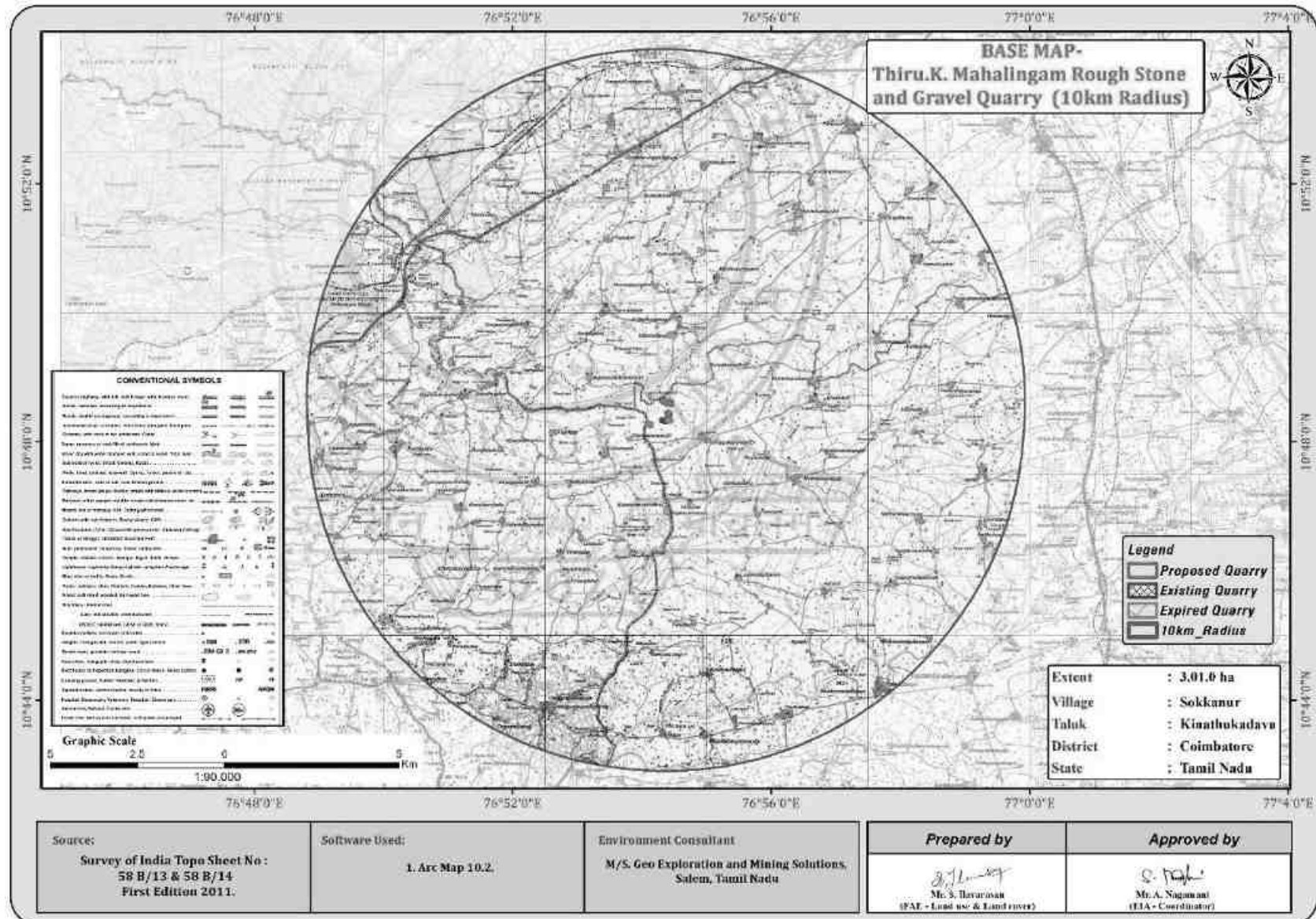
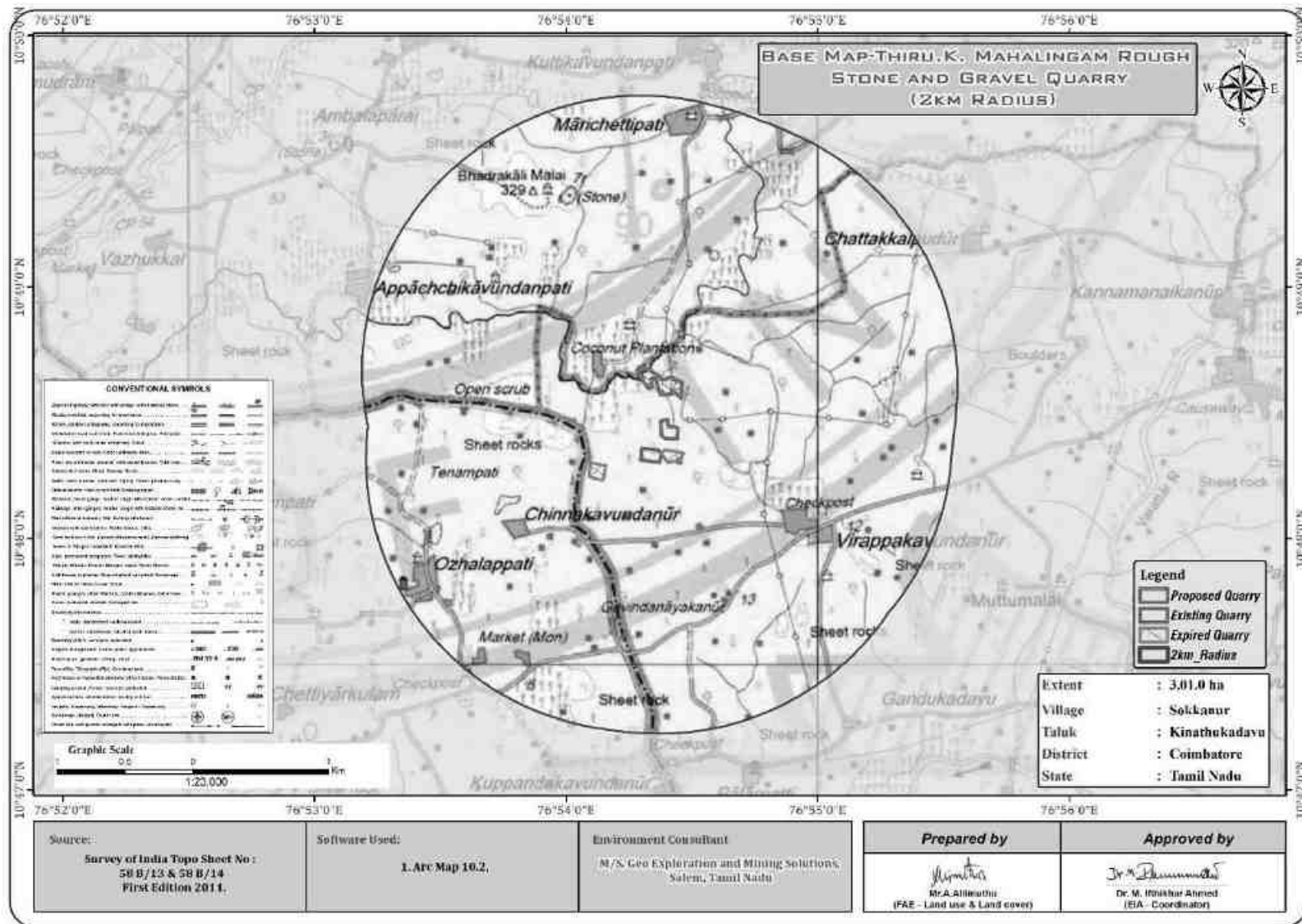
FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS

FIGURE 1.3A: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS

Source: Survey of India Toposheet 58-B/13

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 –

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 29.06.2022 & 28.07.2023
- Precise Area Communication Letter was issued by the Assistant Director, Department of Geology and Mining, Coimbatore R.C. No: 748/Mines/2022, Dated: 06.03.2025
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Coimbatore District, vide R.C. No: 748/Mines/2022, Dated: 23.09.2025
- 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
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/557121/2025 Dated: 08.11.2025

SCOPING

- The proposal was placed in 648th SEAC meeting held on 05.12.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 931st SEIAA meeting held on 15.12.2025 and issued ToR vide File No.12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025

PUBLIC CONSULTATION –

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district was submitted.

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, 2010
- EIA Notification, 14th September, 2006
- File No.12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025
- Approved Mining Plan

1.5 TERMS OF REFERENCE (ToR)

Compliance to ToR issued vide –

- File No.12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025

1.6 POST ENVIRONMENT CLEARANCE MONITORING

The project 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 for 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 Pre monsoon season (March to May 2025) for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

TABLE 1.4: 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 – 1 Surface water and 5 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 Proposed Quarry

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959
- Obtained Precise Area Communication Letter as per 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
- File No.12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025

2. PROJECT DESCRIPTION

2.0 GENERAL

The Proposed Rough Stone Quarry requires Environmental Clearance. There are 2 proposed and 1 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 5.43.5 ha

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 projects are site specific and there is no additional area required for this project. There is no effluent generation/discharge from this proposed project. Rough Stone is proposed to be excavated by 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 proposed quarry project area is located in Sokkanur village, Kinathukadavu taluk, Coimbatore District
- The project is located about 22 km Southwest of Coimbatore, 12 km west of Kinathukadavu and 4.0 km West side of Sokkanur Village.
- The proposed area falls in the Survey of India Topo sheet No. 58-B/13
- The Latitude between of **10°48'33.40"N to 10°48'40.79"N** The Longitude between of **76°54'16.85"E to 76°54'27.67"E** on WGS 1984 Datum.
- The project does not fall within 10 km radius of any Eco – sensitive zone, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves.

TABLE 2.1: SITE CONNECTIVITY

Nearest Roadway	National Highway (NH-544) Coimbatore to Palakad Road – 6.7 km-NW State Highway (SH-26) Ettimadai - Kozhinjampara – 4 km-NW
Nearest Village	Veerappagoundanur – 960m SE
Nearest Town	Kinathukadavu – 12 km – East
Nearest Railway Station	Walayar Railway station – 8.4 Km – NW
Nearest Airport	Coimbatore – 28.8 km – Northeast
Seaport	Kochi- 116 km – South West

Source: Survey of India Toposheet

The project area is bounded by 7 corners the corners are designated as 1- 7 clock wise from the South west corner. The coordinates for all the corners is given below.

TABLE 2.2: BOUNDARY CO-ORDINATES OF PROJECT

S.NO	Latitude	Longitude
1	10° 48'35.88"N	76°54'19.36"E
2	10° 48'38.14"N	76°54'17.90"E
3	10° 48'39.53"N	76°54'17.37"E
4	10° 48'39.76"N	76°54'17.02"E
5	10° 48'40.01"N	76°54'16.85"E
6	10° 48'40.79"N	76°54'17.79"E
7	10° 48'40.23"N	76°54'19.44"E
8	10° 48'40.13"N	76°54'20.33"E
9	10° 48'39.65"N	76°54'20.35"E
10	10° 48'38.80"N	76°54'22.15"E
11	10° 48'38.49"N	76°54'22.23"E
12	10° 48'37.83"N	76°54'22.74"E
13	10° 48'37.88"N	76°54'23.12"E
14	10° 48'38.19"N	76°54'24.40"E
15	10° 48'38.28"N	76°54'25.26"E
16	10° 48'37.15"N	76°54'27.67"E
17	10° 48'34.58"N	76°54'27.33"E
18	10° 48'33.40"N	76°54'27.42"E
19	10° 48'35.40"N	76°54'25.17"E
20	10° 48'34.50"N	76°54'25.37"E
21	10° 48'34.18"N	76°54'23.20"E
22	10° 48'34.98"N	76°54'22.81"E
23	10° 48'34.23"N	76°54'22.35"E
24	10° 48'38.06"N	76°54'21.40"E
25	10° 48'38.06"N	76°54'20.28"E
26	10° 48'35.93"N	76°54'20.38"E

Source: Approved Mining Plan

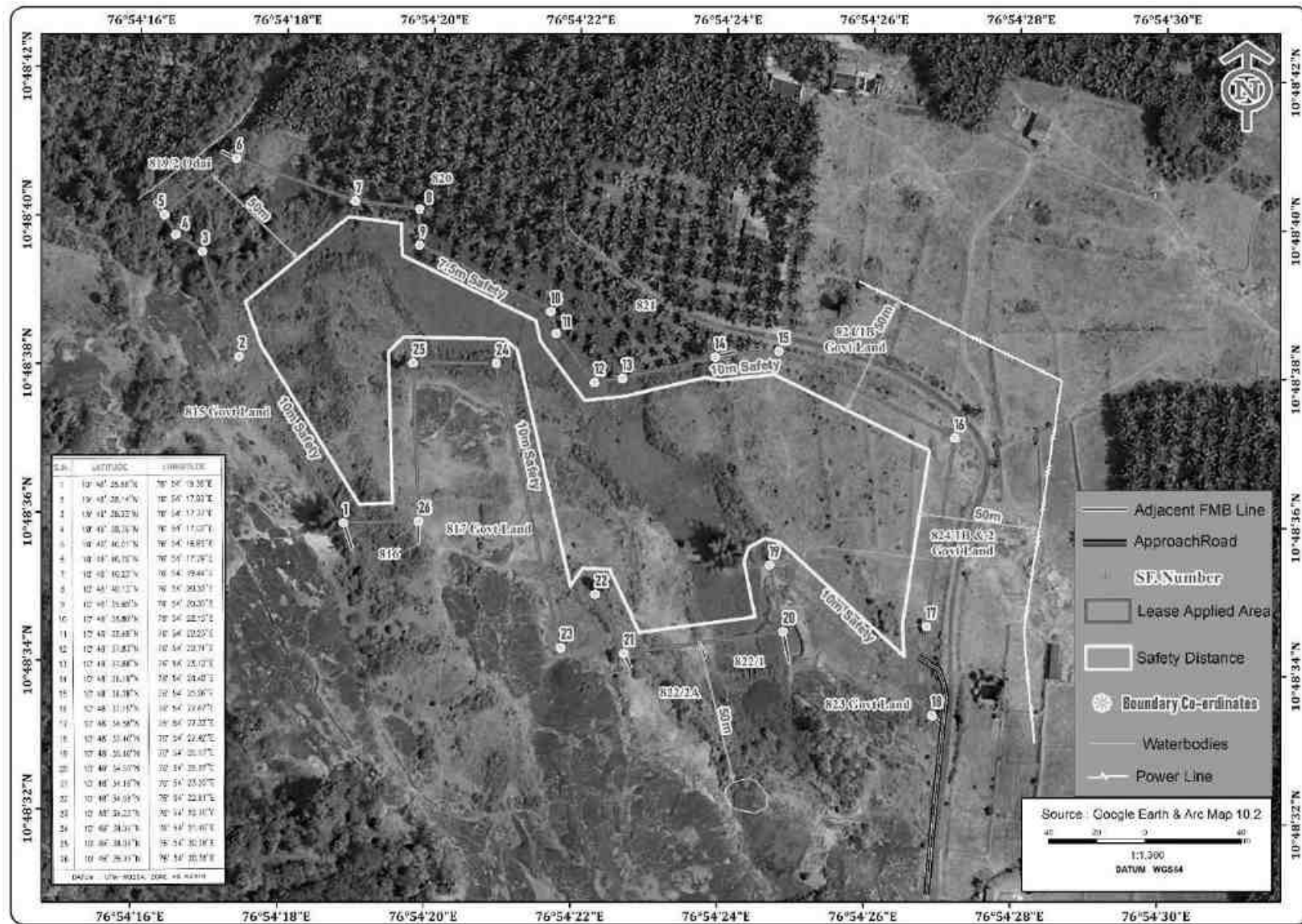
FIGURE 2.1: PHOTOGRAPHS OF THE PROJECT SITE



FIGURE 2.1A: PHOTOGRAPHS OF THE FENCING AND GREEN BELT



FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA



Source: Google Earth Imagery

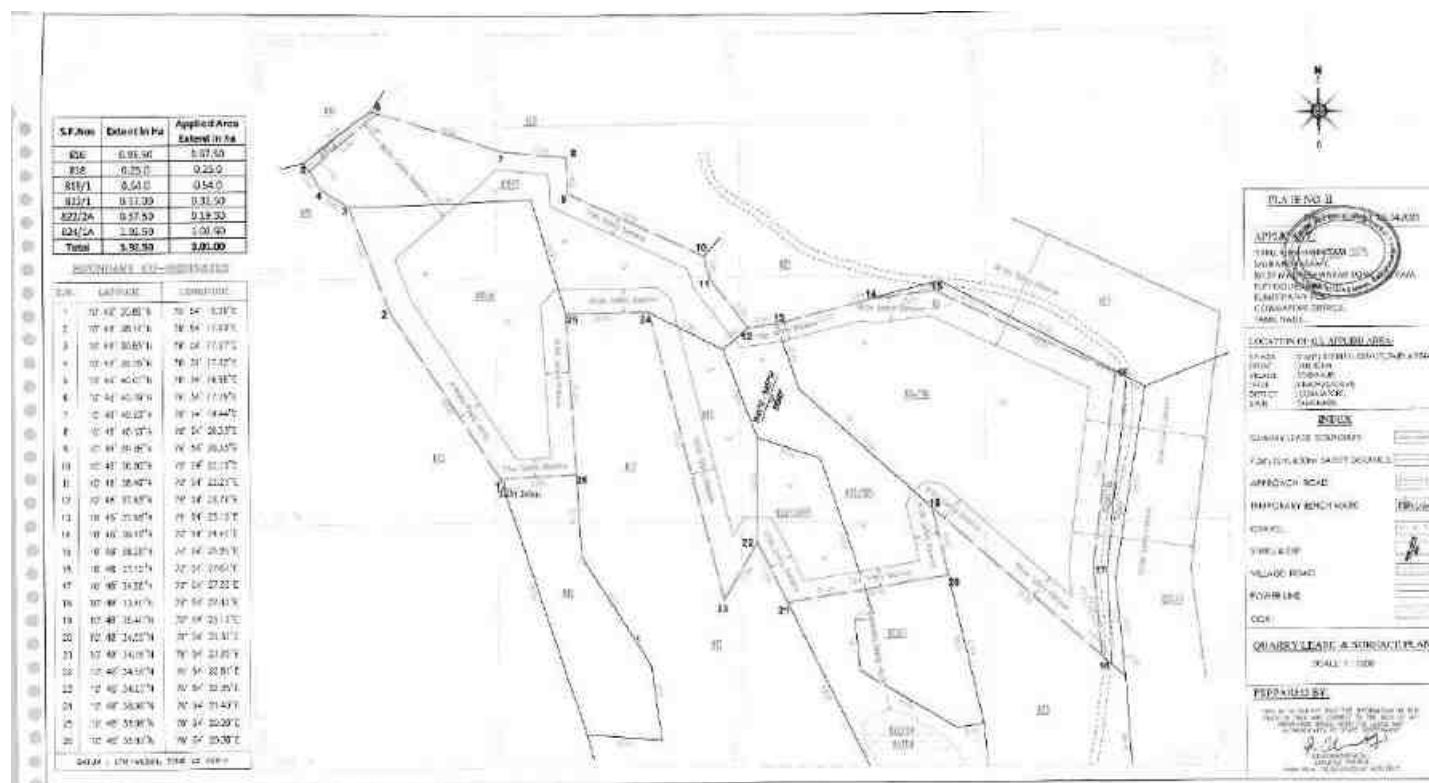
FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN

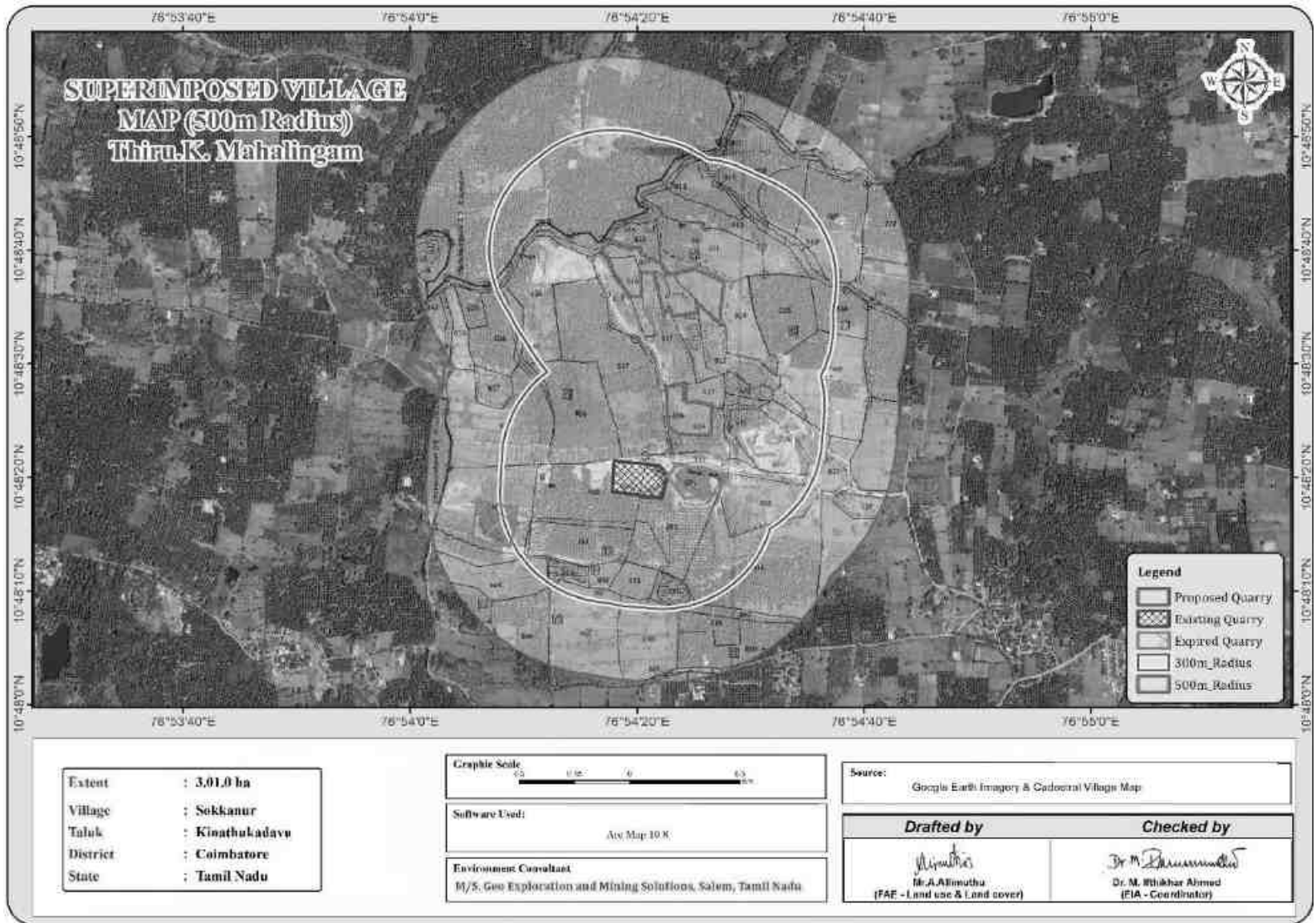
FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

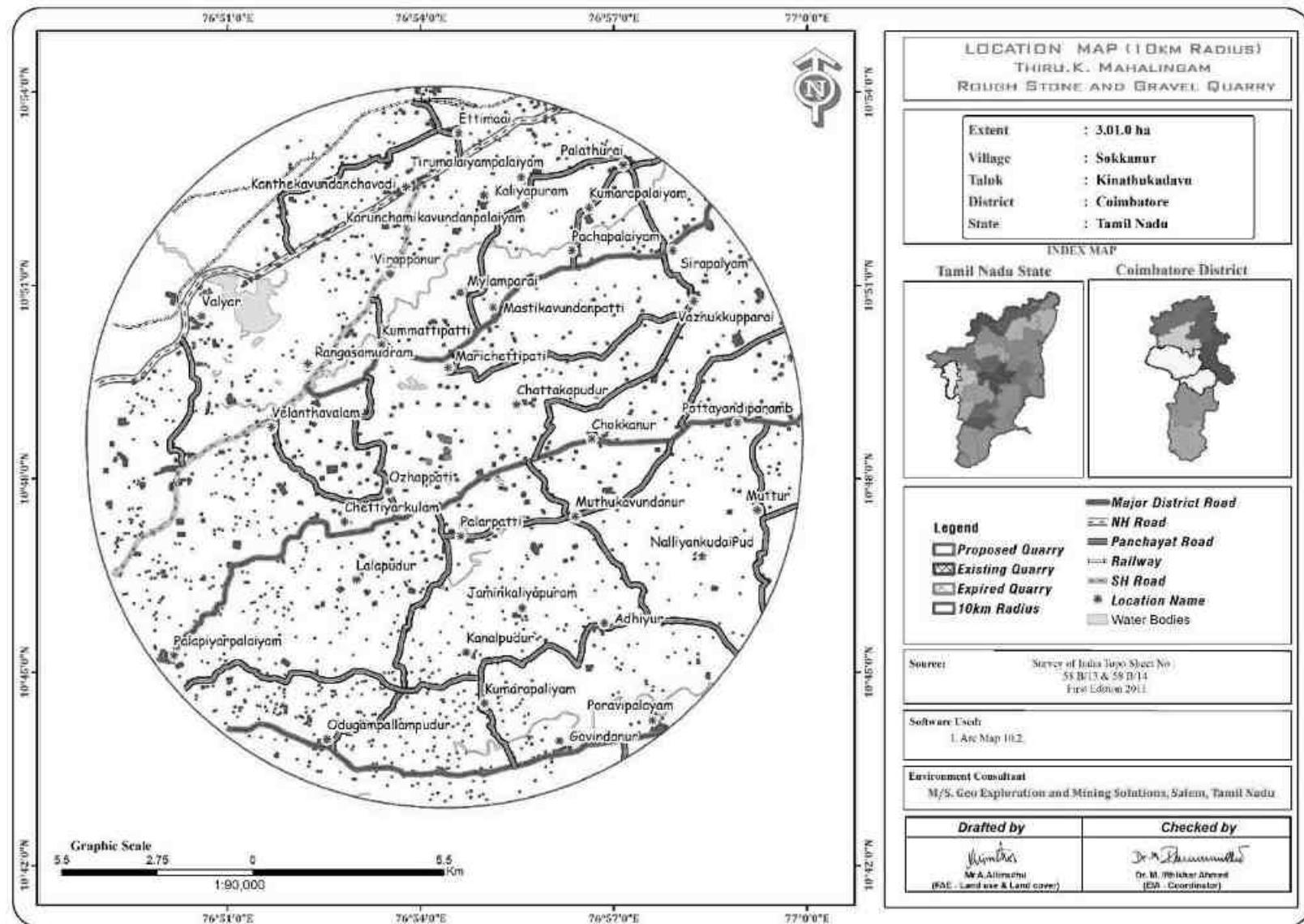
FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS

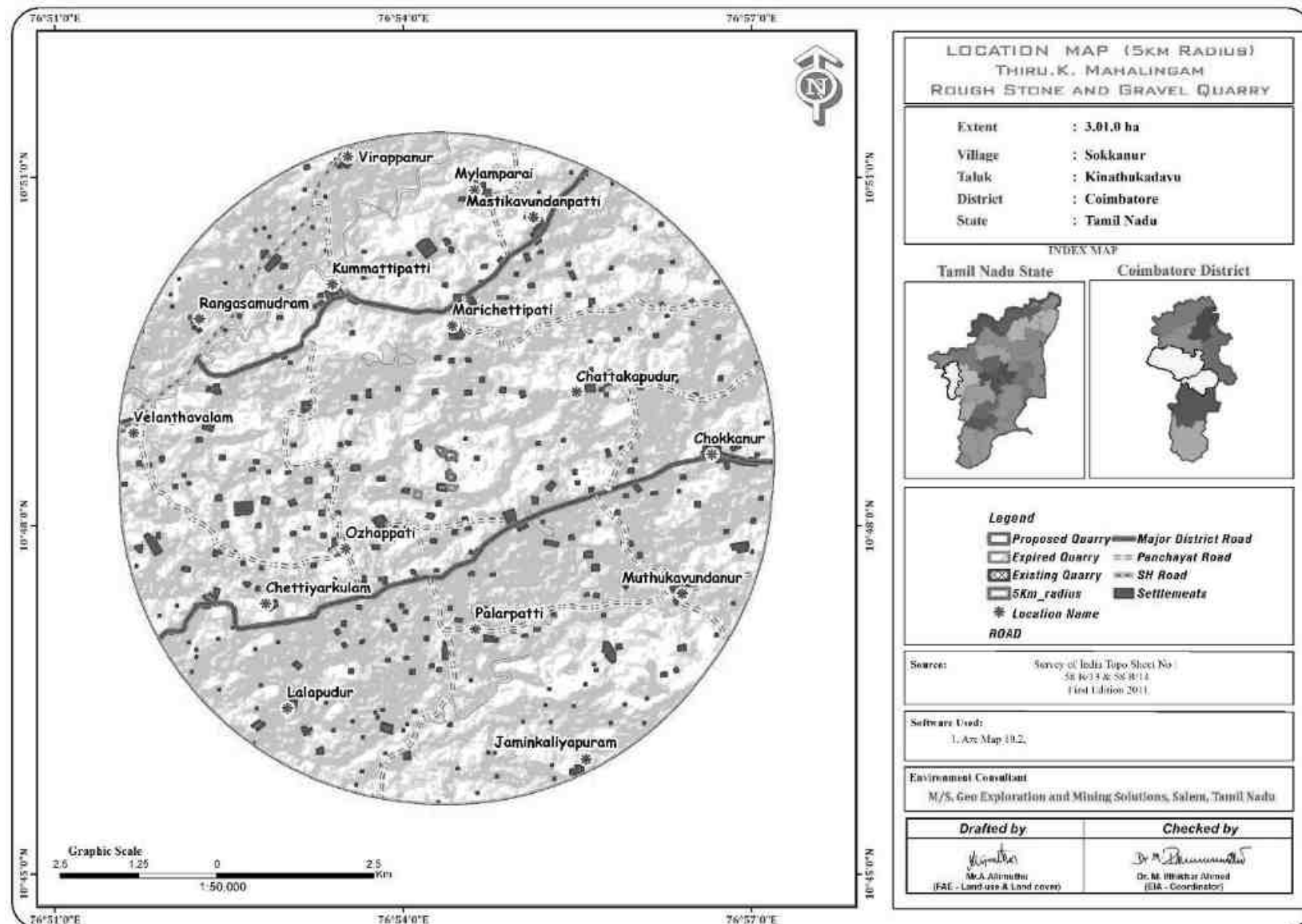
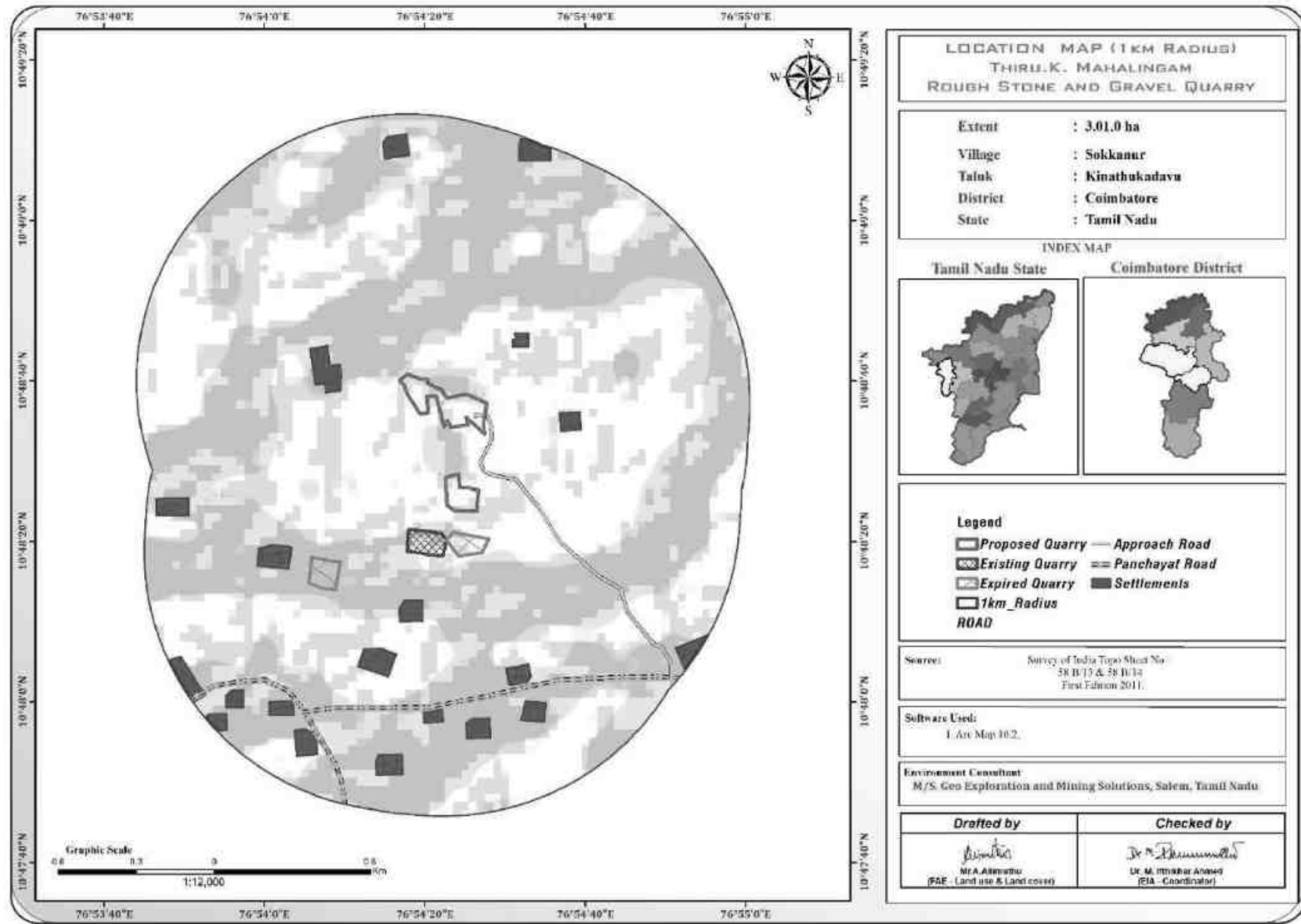
FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 5KM RADIUS

FIGURE 2.7: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS

2.2.1 Project Area

- The Rough Stone and Gravel quarry is proposed to operate by opencast mechanized method of mining and the project is site specific
- There is no beneficiation or processing proposed inside the project area
- There is no forest land involved in the proposed projects and is devoid of major vegetation and trees.

TABLE 2.3: LAND USE PATTERN OF THE PROPOSED PROJECT – CORE ZONE

Description	Present area (Ha)	Area at the end of this quarrying period (Ha)
Area under Quarry	Nil	1.90.00
Infrastructure	Nil	0.02.00
Roads	Nil	0.02.00
Green Belt	Nil	1.06.80
Unutilized Area	3.01.00	0.00.20
Grand Total	3.01.00	3.01.00

Source: Approved Mining Plan

2.2.2 Size or Magnitude of Operation

TABLE 2.4: OPERATIONAL DETAILS FOR PROPOSED PROJECT

PARTICULARS	DETAILS		
	Rough Stone (5Year Plan period)	Weathered Rock in m ³	Gravel in m ³
Geological Resources	10,53,500m ³	60,200m ³	60,200m ³
Mineable Reserves	2,50,625 m ³	32,590m ³	34,028m ³
Production for five-year plan period	2,50,625 m ³	32,590m ³	34,028m ³
Mining Plan Period	5 years		
Number of Working Days	300 days		
Production per day	167	36	36
No of Lorry loads (12m ³ per load)	14	3	3
Total Depth of Mining	39m (2m Gravel +2m Weathered Rock + 35m Rough Stone) bgl		

Source: Mining plan

2.3 GEOLOGY

2.3.1 Regional Geology

Coimbatore 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 –

- Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite,
- Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss,
- Basic intrusive include Pyroxinite/Dunite
- Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
- 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

Geologically, the district is covered by rocks belonging to Archean age comprising the khondalite group, Charnockite Group, migmatite group, Sathayamangalam group, Bhavani Group and Alkali complex of Proterozoic age and Recent to Late Pleistocene rocks of Cainozoic age.

The Charnockite Group of rocks consisting of Charnockite, pyroxene granulites and associated magnetite quartzite, the Knodalite Group comprising gametiferous – sillimanite gneiss, calc-granulite, crystalline limestone, sillimanite quartzites and associated migmatitic gneisses. The rocks are restricted to the central and southern portions of the district, especially around Sulur, Madukkarai and Pollachi taluks.

The fissile hornblende gneisses (Peninsular gneiss – younger phase) of Bhavani Group with enclaves of schistose, micaceous and amphibolitic rocks, fuchsitge – kyanite quartzites, ferruginous quartzite (Satyamangalam Group) intruded by a number of ultramafic and basic rocks and granites are seen in the Northern portions of the district especially around Mettupalayam and Northern areas of Coimbatore. The granites are Proterozoic age and occupy the Western end and Eastern Part of the District as separate bodies and are recognized as Maruthamalai Granite and Punjapuliyampatti Granites respectively. The quaternary alluvium is seen in the Western areas of Coimbatore town. The alluvium is more than 30m thick in the Chinnathadagam valley northwest of Coimbatore and in the Siruvani valley west of Coimbatore.

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

(<https://www.tnmines.tn.gov.in/pdf/dsr/9.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. All the project areas are plain terrain, all the project areas are covered with gravel formation of 1m-2m thickness; Massive Charnockite formation is found after 1m-2m gravel formation which is clearly inferred from the nearby existing quarry pit.

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 of the Charnockite body is N30°E – S 30° W with dipping towards NE 60°.

2.3.3 Hydrogeology

Coimbatore 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 250m³ /day and in bore well between 260 and 430m³ /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 Tirupur 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 Coimbatore 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.

Hard Rock Formations

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

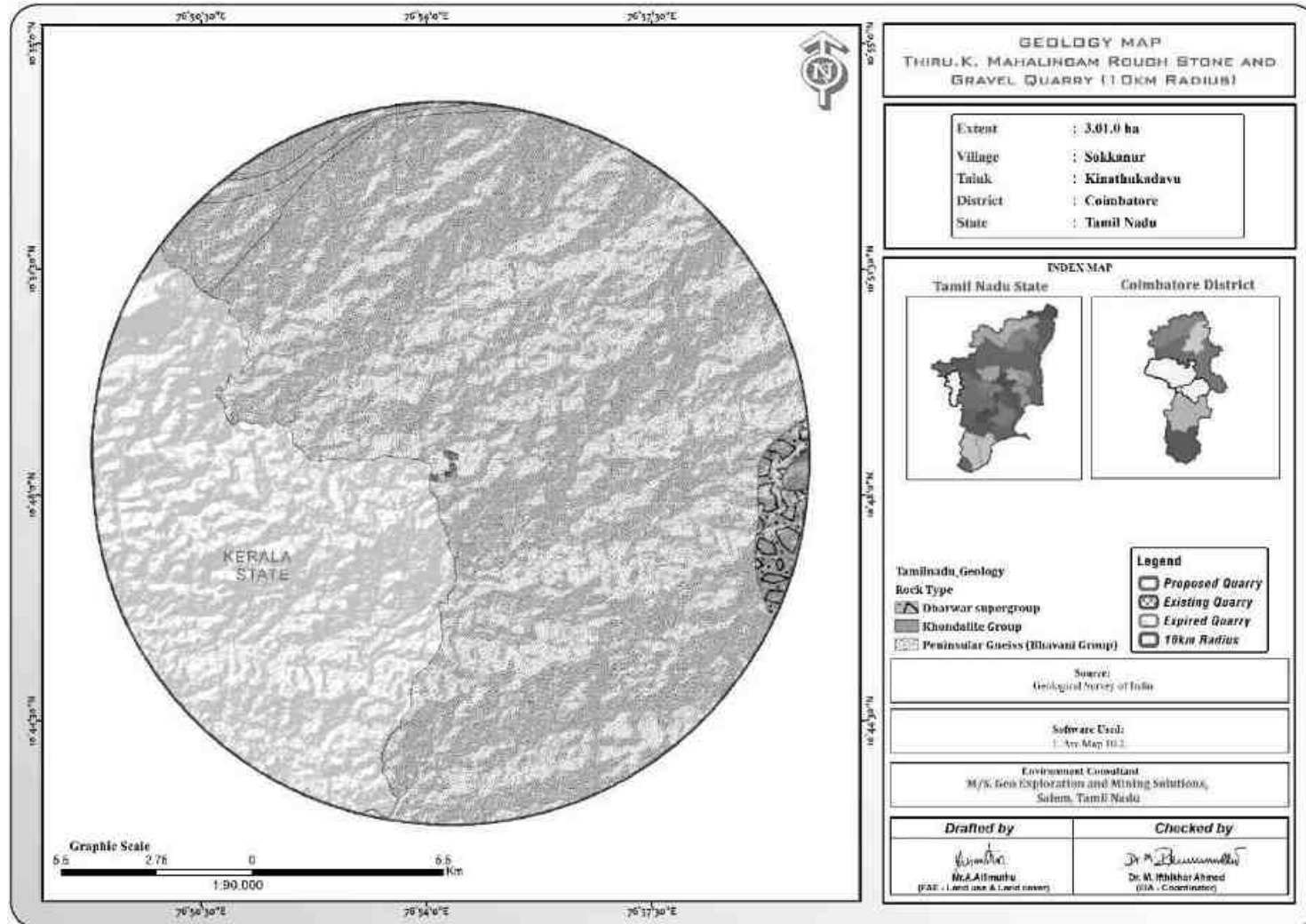
Aquifer Parameters

The thickness of aquifer in this district is highly erratic and varies between 15m to 40m below ground level. The intergranular 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:

TABLE 2.5: RANGE OF AQUIFER PARAMETERS

Type of Aquifer	Water Table conditions in hard rock areas
Aquifer parameters yield	50 to 300 Lpm
Transmissivity (T)	1.49 to 164.18 m ² /day
Permeability (K)	0.25 to 26.75 m/day
Depth of water level	7m to 25m

Source: <http://nwm.gov.in/sites/default/files/Notes%20on%20Coimbatore%20District.pdf> and <https://www.twadboard.tn.gov.in/content/coimbatore>

FIGURE 2.8: REGIONAL GEOLOGY MAP

From the above map it is inferred that the cluster quarries fall in the hard rock terrain (Peninsular Gneiss)

FIGURE 2.9: GEOMORPHOLOGY MAP

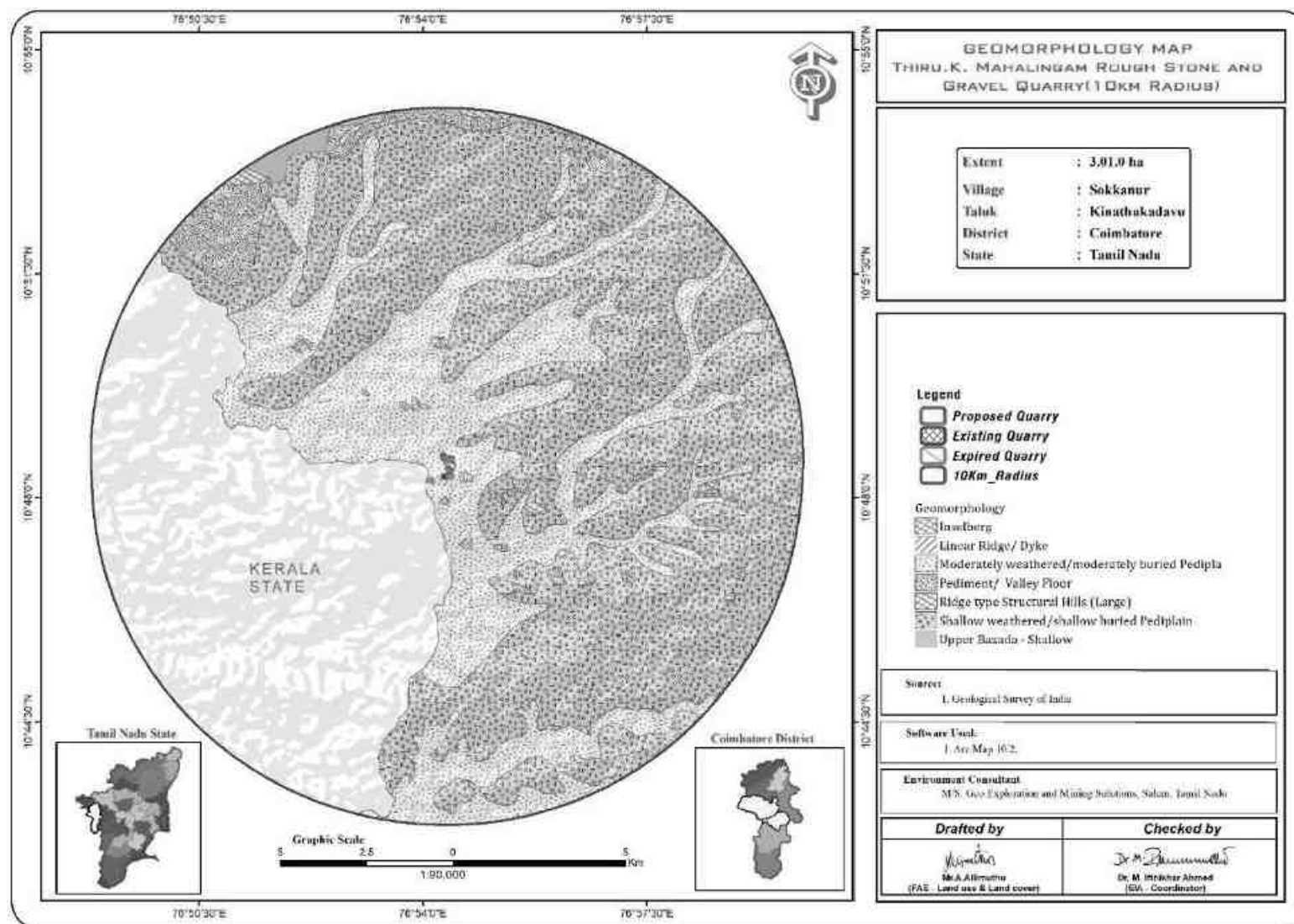
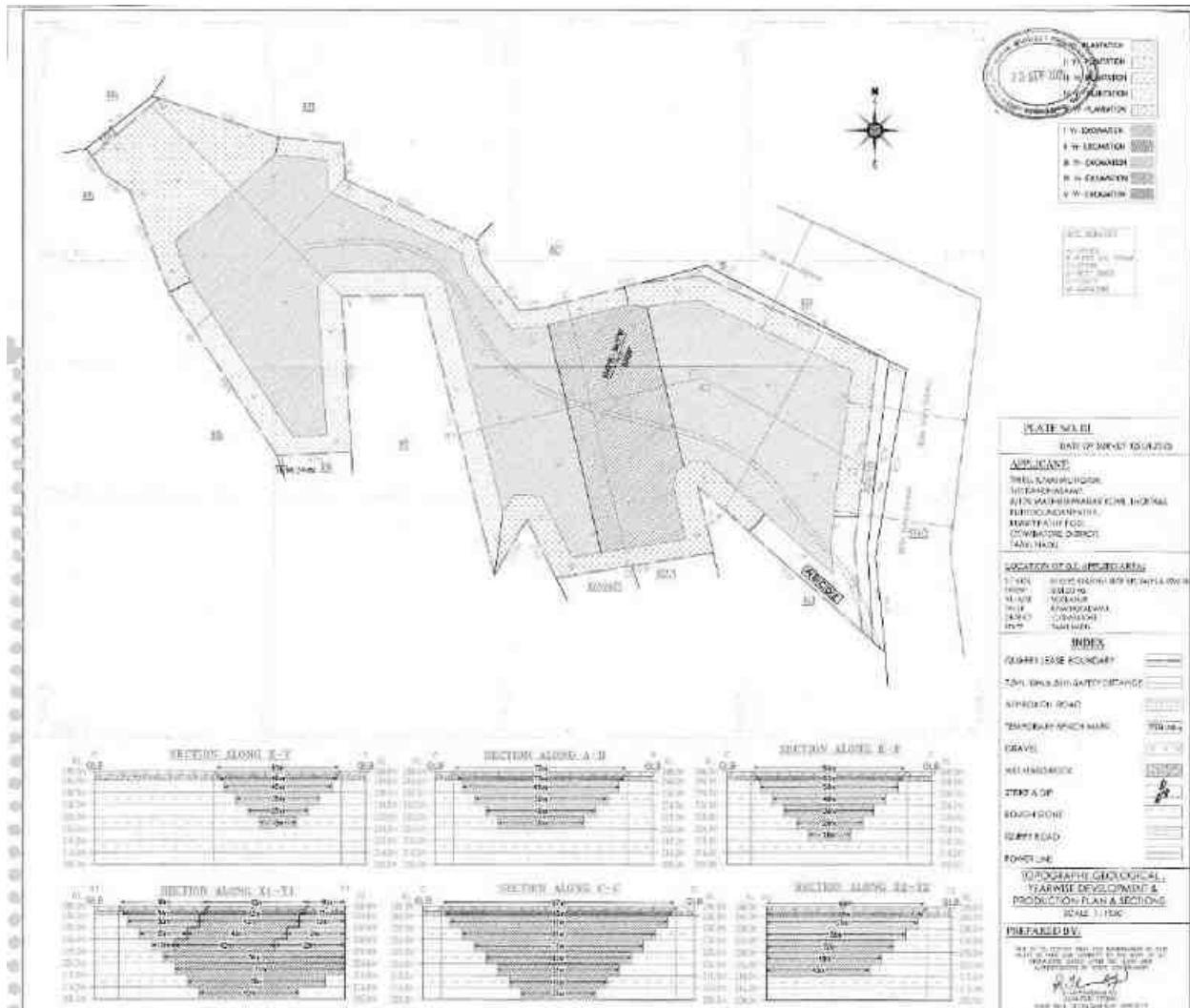
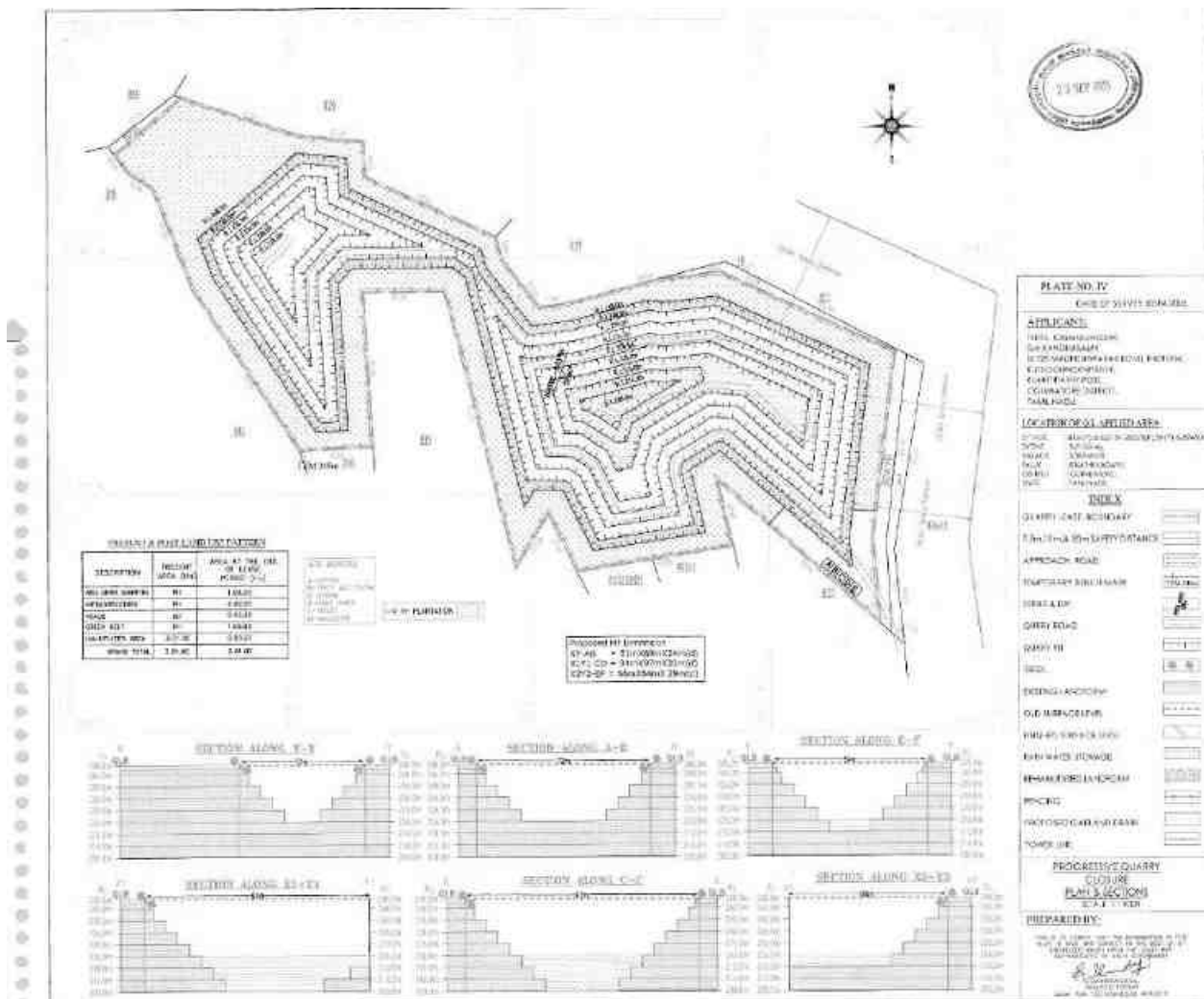


FIGURE 2.10: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS



Source: Approved Mining Plan

FIGURE 2.11: CLOSURE PLAN AND SECTIONS



Source: Approved Mining Plan

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 for the proposed project.

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) for all the proposed projects.

TABLE 2.6: AVAILABLE GEOLOGICAL RESOURCES OF PROPOSED PROJECT

Description	Rough Stone	Gravel
Geological Resource in m ³	10,53,500	60,200
Mineable Resource in m ³	2,50,625	34,028

Source: Approved Mining Plan

The Gravel has been removed during the previous lease period.

TABLE 2.7: YEAR-WISE PRODUCTION PLAN

Years	Rough stone in m ³	Weathered Rock in m ³	Gravel in m ³
I	55700	13320	14328
II	51030	7980	8148
III	60850	11290	11552
IV	46540	-	-
V	36505	-	-
Total	2,50,625	32,590	34,028

Source: Approved Mining Plan

Disposal of Waste

There is no waste anticipated in these Rough Stone quarrying operation. The entire quarried out materials will be utilized (100%). Top layer of Gravel formation will be removed and sold to needy customers directly.

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

PROPOSAL			
Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max)
XY-AB	51	69	24 m bgl

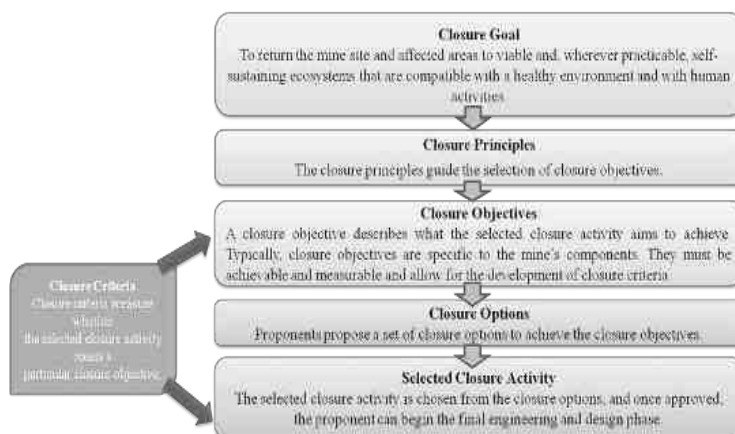
X1Y1-CD	94	97	39m bgl
X2Y2-CD	94	97	39m bgl

Source: Approved Mining Plan

- At the end of life of mine, the excavated mine pit / void will facilitate to collect the rainwater and the pit will act as temporary reservoir.
- 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.
- Discharge of contaminated drainage has been minimized and controlled.
- Original or desired new surface drainage patterns have been established.
- Fishy culture activities will be carried out in the mine pit after the closure



Closure Planning & Options Considerations in Mine Design –

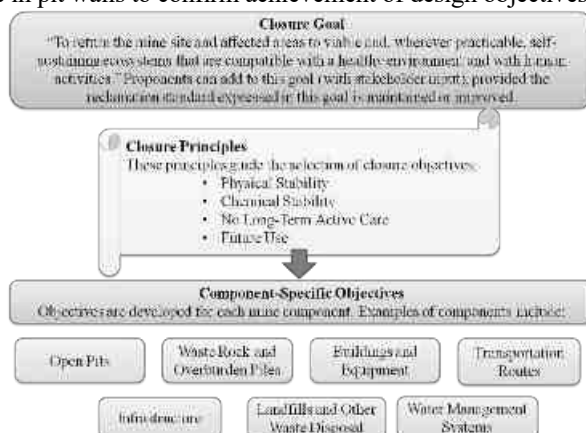
- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid 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
- There is a canal about 100m on Western side of the cluster project area. This river canal will not be hindered by any of mine closure activities
- 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.

Post-Closure Monitoring –

The purpose of post-closure monitoring with respect to open pit mine workings is to ensure the attainment of closure objectives.

- Monitor physical and geotechnical stability of remnant pit walls.
- Monitor the ground regime in pit walls to confirm achievement of design objectives.



- Monitor water level in pit to confirm closure objectives regarding fish, fish habitat, and wildlife safety are being achieved
- Sample water quality and quantity at controlled pit discharge points
- Identify and test unanticipated areas where water management is an issue
- Inspect integrity of barriers such as berms & fences
- Monitor wildlife interactions with barriers to determine effectiveness
- Inspect aquatic habitat in flooded pits where applicable
- Monitor dust levels

TABLE 2.9: MINE CLOSURE BUDGET

ACTIVITY		YEAR					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos.	1500					@200 Rs Per sapling	3,00,000/-
	Cost	3,00,000						
Wire Fencing (In Mtrs) 1140		342000	-	-	-	-	@300 Rs Per Meter	3,42,000/-
Garland drain (In Mtrs) 980 Mtrs		294000	-	-	-	-	@300 Rs Per Meter	2,94,000/-

TOTAL	9,36,000/-
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Source: Mining plan

2.5 METHOD OF MINING

The method of mining is Opencast Mechanized Mining Method is being proposed by formation of 5.0-meter height bench with a bench width 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) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106 (2) (b) of MMR-1961, under Mine Act – 1952.

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 Excavators attached with Rock Breakers unit will be deployed for breaking large boulders to required fragmented sizes to avoid secondary blasting and 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.

2.5.1 Drilling & Blasting Parameters

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

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 have 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 2.10 PROPOSED MACHINERY DEPLOYMENT

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 / Rock Breaker	1	300 HP	Diesel Drive
4	Tipper	3	30 Tonnes	Diesel Drive
5	Water Sprinkling Tanker	1	6,000 litres	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 will be constructed as per the Mine Rule after the grant of quarry lease in all the proposed quarries.

2.6.2 Drainage Pattern

Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin over time that reveals characteristics of the kind of rocks and geological structures in a landscape. 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.

Dendritic drainage pattern is one of the most common type that develop in areas where the rock (or unconsolidated material) beneath the stream has no particular fabric or structure and can be easily eroded equally in all directions.

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 Kinathukadavu District Road

Traffic density measurements were performed at two locations

1. Approach Road
2. Kinathukadavu District Road

Traffic density measurement were 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.2.11: TRAFFIC SURVEY LOCATIONS

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Approach Road	530m - SE	Approach Road
TS2	Kinathukadavu District Road	1.2 km-SE	Kinathukadavu District Road

Source: On-site monitoring by GEMS FAE & TM

TABLE 2.12: EXISTING TRAFFIC VOLUME

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	55	165	180	180	178	89	434
TS2	75	225	210	210	210	105	540

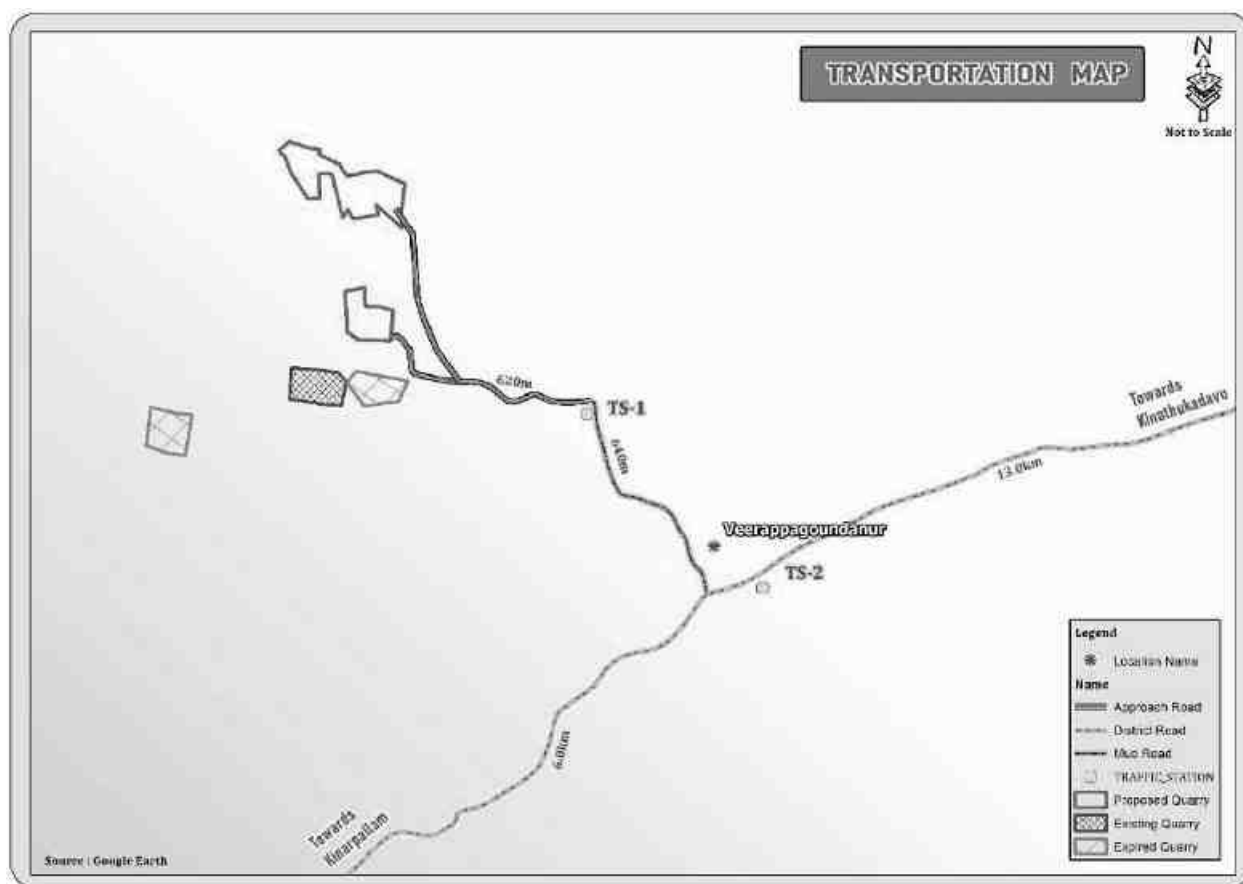
Source: On-site monitoring by GEMS FAE & TM

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

TABLE 2.13: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT

Transportation of Rough Stone & Gravel per day		
Capacity of trucks	No. of Trips per day Cumulatively	Volume in PCU
10 tonnes	8	80

Source: Data analysed from Approved Mining Plan

FIGURE.2.12: MINERAL TRANSPORTATION ROUTE MAP**TABLE 2.14: 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
Approach Road	434	71	505	1200
Kinathukadavu District Road	540	71	611	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 1,200 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 2.15: WATER REQUIREMENT FOR THE PROJECT

*Purpose	Quantity	Source
Dust Suppression	0.6 KLD	From Existing bore wells from nearby area
Green Belt development	1.0 KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.4 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
Total	2.0 KLD	

Source: Prefeasibility report

* Drinking water will be sourced from Approved Water Vendors

2.7.2 Power and Other Infrastructure Requirement

The project is not required power supply for the mining operations. Machineries will be operated by the source of 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.

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

High speed Diesel (HSD) will be used for mining machineries. Diesel will be brought from nearby Fuel Stations.

Gravel:

Per hour Excavator will consume	=	10 liters / hour
Per hour Excavator will excavate	=	60m ³ of Gravel
Gravel quantity	=	34028/60 = 567hours
Diesel consume	=	567hours x 10 liters
Total diesel consumption	=	5670Liters of HSD will be utilized for Gravel

Rough stone:

Per hour Excavator will consume	=	16 liters / hour
Per hour Excavator will excavate	=	20m ³ of Rough stone
Rough stone quantity	=	2,50,625/20 = 12531hours
Diesel consume	=	12531hours x 16 liters
Total diesel consumption	=	2,00,500 Liters of HSD will be utilized for Rough stone
Total diesel consumption	=	2,06,170 Liters of HSD will be utilized for entire project life.

2.7.4 Project Cost

Proposed Project Cost is Rs.1,18,00,000/- Corporate Environmental Responsibility Cost is Rs 3,00,000/-

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 2.16: PROPOSED MANPOWER DEPLOYMENT

Particulars	Workers	Numbers
A) Supervisory Category	Mine manager	1
	Geologist	1
B) Skilled Labour	Mine Foreman	1

	Blaster/Mate	1
	Excavator-Operator	1
	Water Sprinkler Driver	2
	Jack Hammer Drillers	14
	Tipper Drivers	3
C) Unskilled	Security	1
	Labour & Helper	2
	Co-operator and Cleaner	5
	Total	31

Source: Approved Mining Plan

2.9 PROJECT IMPLEMENTATION SCHEDULE

The commercial operation will commence after the grant of Environmental Clearance. CTO will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the Environmental Clearance will be compiled before the start of mining operation.

TABLE 2.17: EXPECTED TIME SCHEDULE

Sl.No.	Particulars	Time Schedule (In Month)					Remarks if any
		1 st	2 nd	3 rd	4 th	5 th	
1	Environmental Clearance						
2	Consent to Operate						Production Start Period
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 March – May 2025 with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by Global Lab and Consultancy Services, – An accredited by ISO:9001:2015 (NABL) Laboratory 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 data collection has been used to understand the existing environment scenario around the cluster against which the potential impacts of the project can be assessed. The study area has been divided into two zones viz **core zone** and **buffer zone** where core zone is considered as cluster and 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 **Pre-Monsoon Season** i.e., (March – May 2025)

Study Methodology

- The project area was surveyed in detail with the help of Total Station and the boundary pillars were picked up with the help of GPS. 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, exchangeable Cations, nutrients & micro nutrients etc., in order to assess the impact due to mining activities and to recommend saplings for Greenbelt development.
- Ground water samples were collected during the study period from the existing bore wells, while surface water was collected from ponds in the buffer zone. The samples were analysed for parameters necessary to determine water quality (based on IS: 10500:2012 criteria) and those which are relevant from the point of view of environmental impact of the proposed mines.
- 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.
- In order to assess the Ambient Air Quality (AAQ), samples of ambient air were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM₁₀ and SO₂, 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's 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	1 Hourly Continuous Mechanical/Auto matic Weather Station	1	Site specific primary data& Secondary Data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive Dust	24 hourly twice a week (March – May 2025)	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 Quadrata & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

* All monitoring and testing have been carried out as per the Guidelines of CPCB and MoEF & CC.

3.1 LAND ENVIRONMENT

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

3.1.1 Land Use/ Land Cover

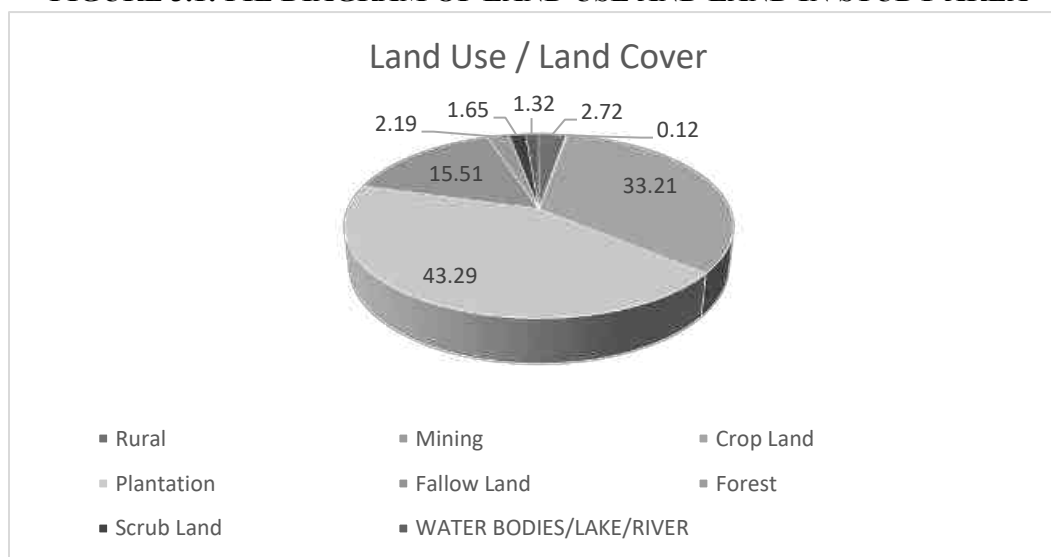
A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through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

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

		10km Radius		2km Radius		
S.No	CLASSIFICATION	AREA_HA	AREA_%	AREA_HA	AREA_%	AREA_%
	BUILTUP					
1	Rural	865.88	2.72	0.66	0.0021	0.0491
2	Mining	37.63	0.12	37.63	0.1180	2.7895
	AGRICULTURAL LAND					
3	Crop Land	10587.91	33.21	757.97	2.3777	56.1905
4	Plantation	13799.51	43.29	531.86	1.6684	39.4280
5	Fallow Land	4942.97	15.51	0.19	0.0006	0.0143
	FOREST					
6	Forest	698.06	2.19	-		
	BARREN/WASTE LANDS					
7	Scrub Land	525.38	1.65	20.62	0.0647	1.5285
	WETLANDS/ WATER BODIES					
8	Waterbodies	421.27	1.32	-		
TOTAL		31878.61	100.00	1348.94	4.2315	100.0000

Source: Survey of India Toposheet and Landsat Satellite Imagery

FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND IN STUDY AREA



Source: Table 3.2

From the above table, pie diagram and land use map it is inferred that the majority of the land in the study area is Crop land, Plantation & Fallow land 92.01 % followed by Built-up Lands – 2.84%, Scrub & Forest land – 3.84 %, and Water bodies 1.32%.

The total mining area within the study area is 37.63 ha i.e., 0.12%. The cluster area of 5.43.5 ha contributes about 14.44% 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

All the proposed project area is plain terrain, covered with gravel and weathered formation of 2 to 4m thickness; Massive Charnockite formation is found after 2 to 4m gravel and weathered formation which is clearly inferred from the existing quarry pits.

3.1.3 Drainage Pattern of the Area

Drainage pattern are created by stream erosion over time that reveals characteristics of the kind of rocks and geological structures in a landscape region drained by streams.

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.

Dendritic patterns, which are by far the most common, develop in areas where the rock (or unconsolidated material) beneath the stream has no particular fabric or structure and can be eroded equally easily in all directions.

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

3.1.4 Seismic Sensitivity

The proposed project site falls in the seismic Zone II, low damage risk 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.

(Source: https://moes.gov.in/writereaddata/files/LS_EN_20032020_385.pdf)

3.1.5 Environmental Features in the Study Area

There is no Wildlife Sanctuaries, 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.

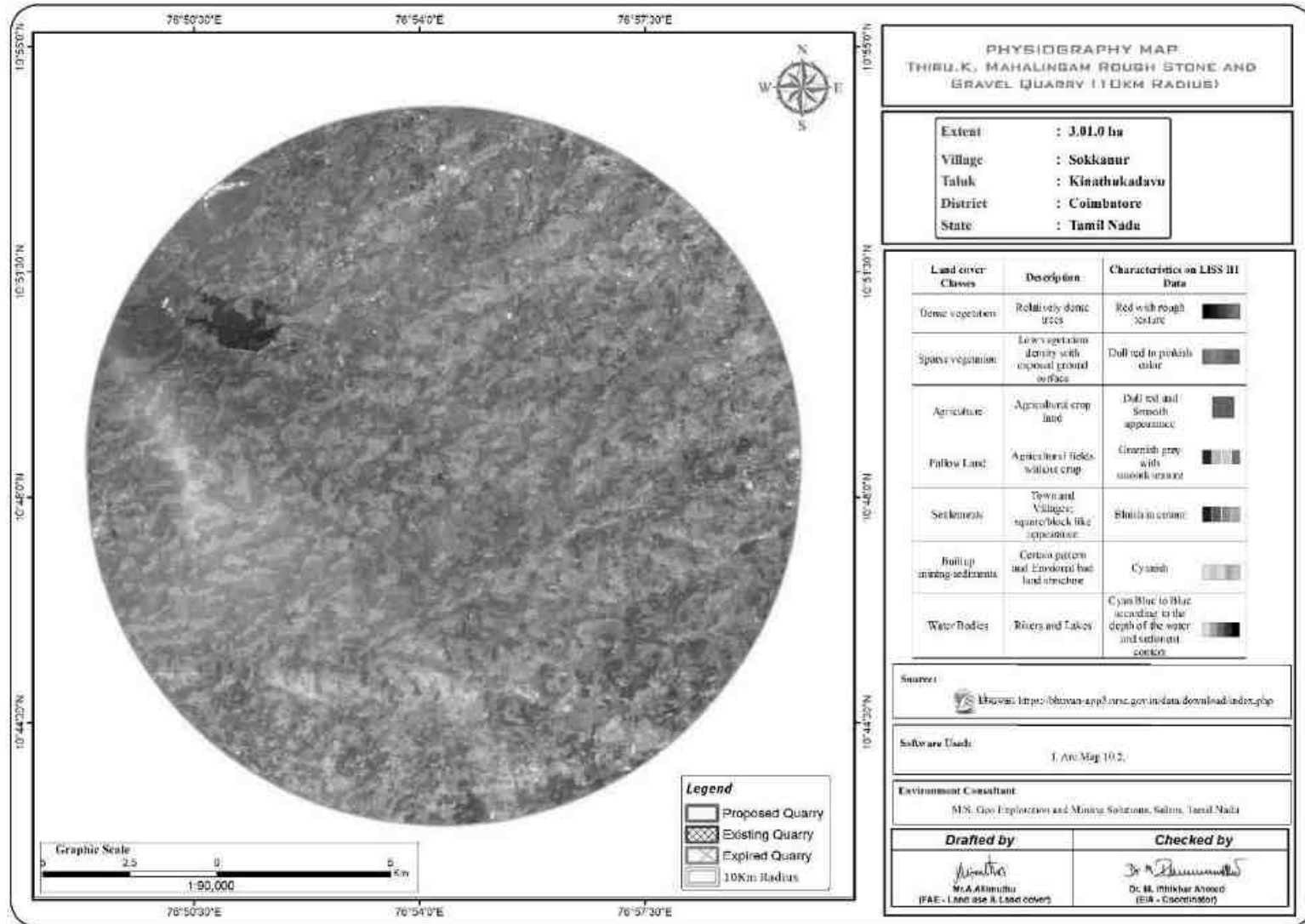
FIGURE 3.2: PHYSIOGRAPHIC MAP OF LISSIII IMAGE AROUNDS 10KM RADIUS

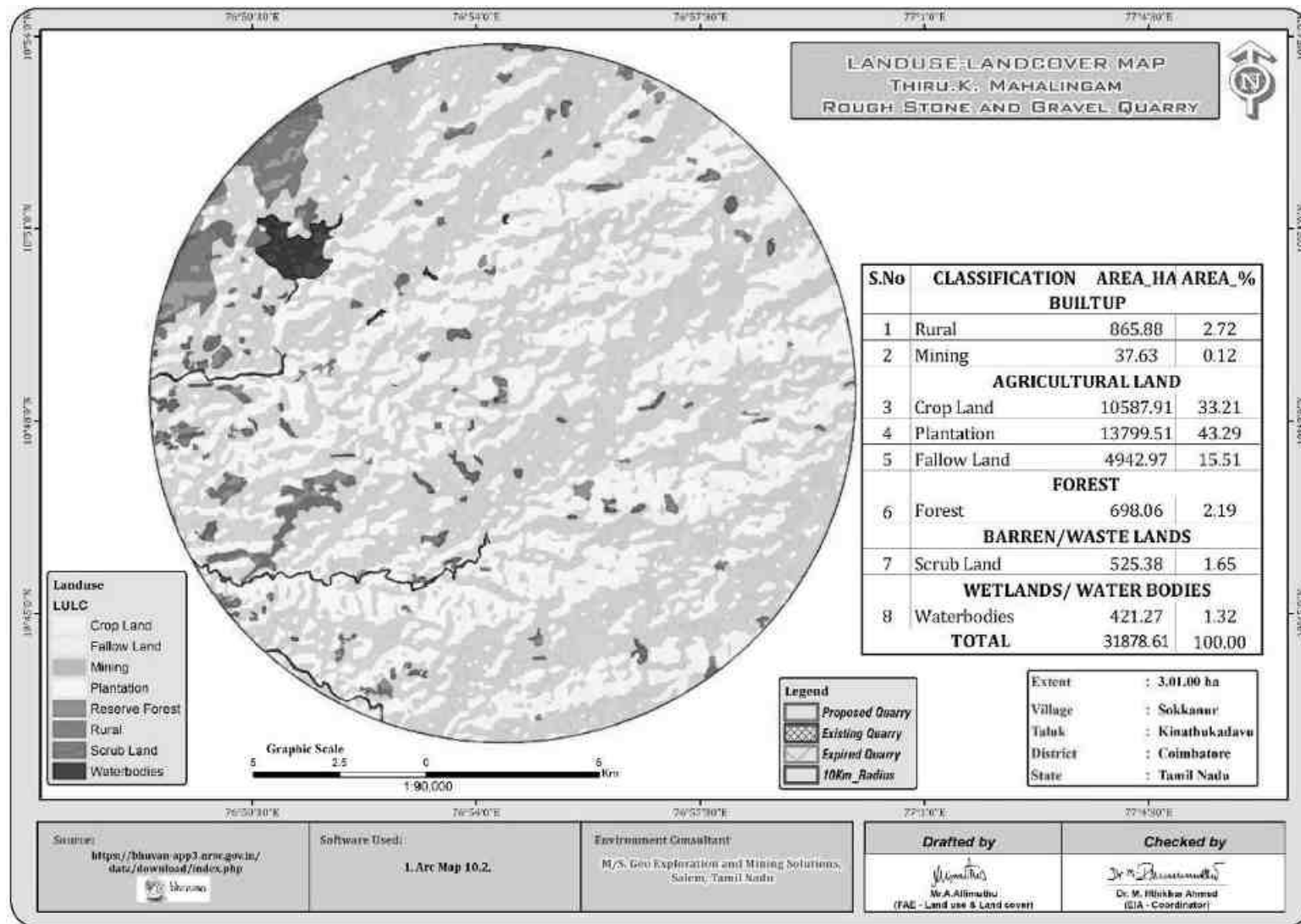
FIGURE 3.2-A: LAND USE LAND COVER MAP 10KM RADIUS

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	Indira Gandhi (Aanamalai) Wildlife Sanctuary	28.5 km-SW
2	Reserve Forest	Boluvampatti R.F	8.0 km NW
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	Sulur Air force Station	36 km NE

Source: Survey of India Toposheet

TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE

Sl.No	NAME	DISTANCE & DIRECTION
1	Odai	50m Safety North
2	Kuttai	50m South
3	Kumitipathi Stream	3.2km NW
4	Walayar Reservoir	5.6km NW
5	Koraiyar River	8.3km SE

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 3.3.

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	Core Zone	Core Zone	10°48'26.32"N 76°54'25.39"E
2	S-2	Near Existing Quarry	400m SW	10°48'21.70"N 76°54'17.31"E
3	S-3	Pichanur	4.0km NW	10°50'12.08"N 76°52'48.45"E
4	S-4	Kanal Pudur	6km South	10°45'18.70"N 76°54'36.88"E
5	S-5	Muthugoundanur	4.0km SE	10°47'24.76"N 76°56'17.32"E
6	S-6	Kannamanayakkanur	4.5km NE	10°49'7.89"N 76°56'45.86"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

Methodology –

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

TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION

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

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

Soil Testing Result –

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

FIGURE 3.3: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS

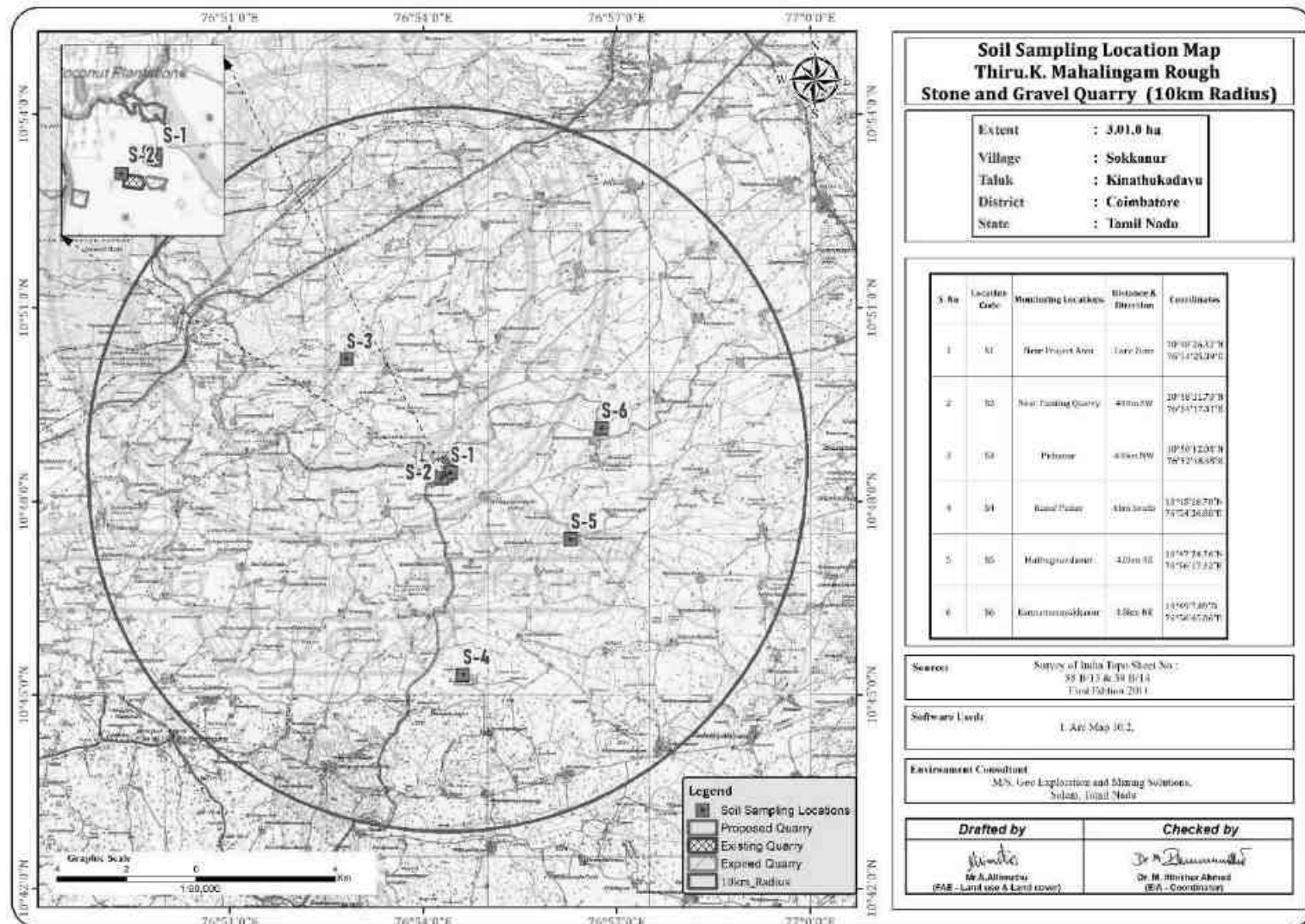


FIGURE 3.4: SOIL MAP

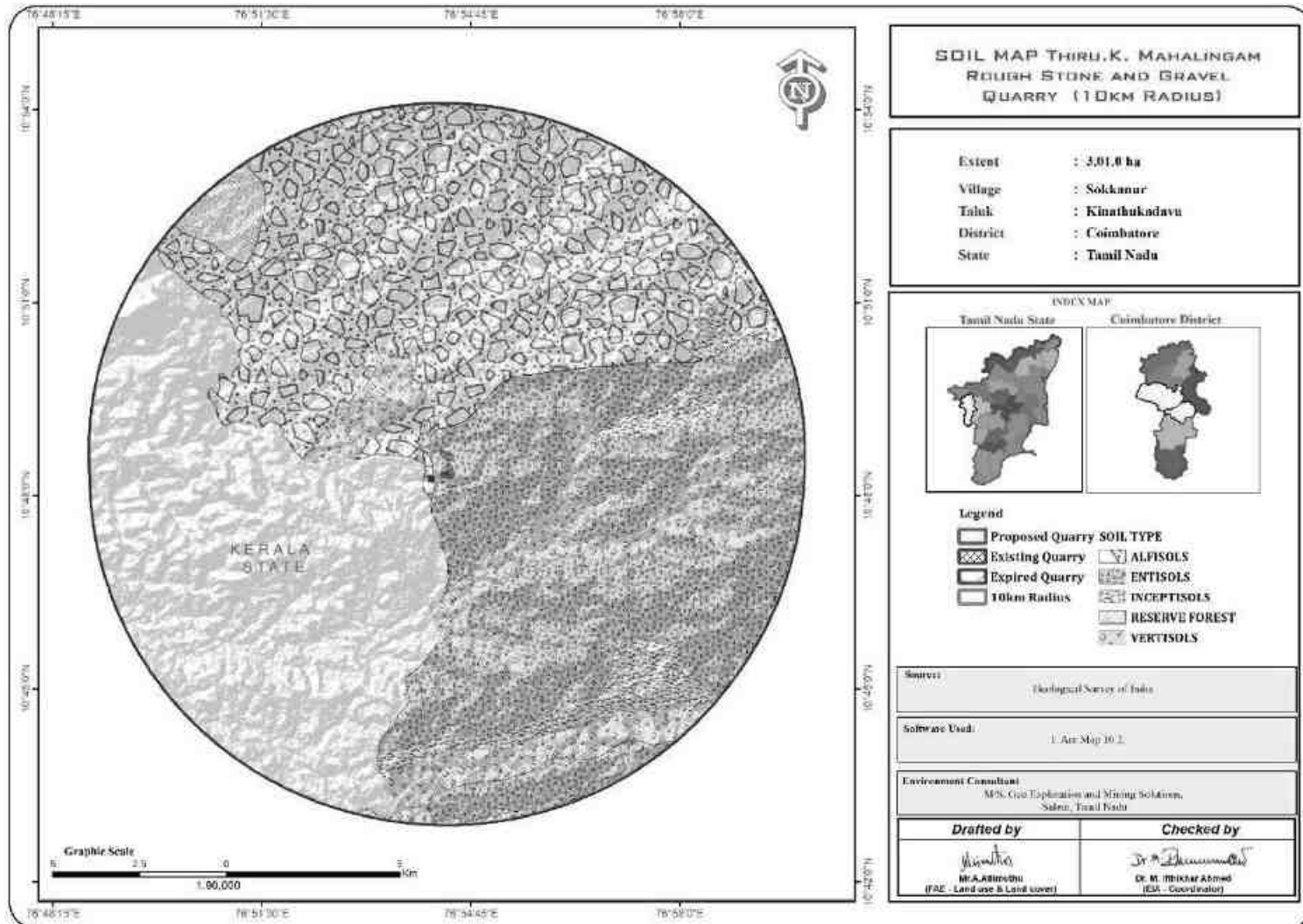


TABLE 3.7: SOIL QUALITY OF THE STUDY AREA

Parameter		Units	S-1 Core Zone	S-2 Near Existing Quarry	S-3 Pichanur	S-4 Kanalpudur	S-5 Muthugoundanu r	S-6 Kannamanayakk anur
1	Available Nitrogen as N	kg/ha	476.7	376	639.7	401.4	451.6	506
2	Available Phosphorous(as P)	mg/kg	24.1	19.5	17.8	15.6	16.6	17
3	Boron	mg/kg	5.0	7.5	12.3	8.0	6.6	7.3
4	Bulk Density	g/cc	1.05	1.12	1.15	1.09	1.12	1.06
5	Cadmium	mg/kg	2.0	5.0	5.0	4.3	6.0	4.8
6	Cation Exchange Capacity	meq/100g	39.6	40	37	44	39	45
7	Chlorides (as Cl-) in saturation extract	meq/l	4.6	5.7	4.5	5.2	3.8	5.8
8	Chromium	mg/kg	6.5	22.6	20.8	9.0	8.6	17.8
9	Copper	mg/kg	4.0	2.6	6.8	BDL (DL:0.5)	4.8	0.75
10	Exchangeable Calcium (as Ca)	meq/100g	2.7	2.4	2.3	1.7	2.0	1.6
11	Exchangeable Magnesium (as Mg)	meq/100g	2.1	2.2	2.5	2.1	1.8	1.9
12	Iron	mg/kg	36.25	48.8	67.2	40.5	24	71.8
13	Lead	mg/kg	1.0	0.72	1.4	1.5	4.5	2.8
14	Manganese	mg/kg	5.75	4.8	6.8	5.0	10.2	9.5
15	Organic Carbon	%	0.64	0.6	0.59	0.74	0.7	1.2
16	Organic Matter	%	1.1	1.03	1.02	1.3	1.21	2.07
17	pH Value	-	7.68	8.02	7.64	7.38	7.96	7.82
18	Soluble Potassium (as K) in saturation extract	mg/100g	1.34	1.4	0.87	1.34	1.34	1.2
19	Specific Electrical Conductivity	μS/cm	486	516	412	396	536	604
20	Sulphate (as SO4)	mg/100g	6.8	2.78	5.8	2.5	5.0	4.2
21	Texture : Clay	%	27.60	26.35	25.46	26.10	25.23	25.45
22	Texture : Sand	%	37.00	35.75	35.32	35.00	36.85	39.93
23	Texture : Silt	%	35.40	37.90	39.22	38.90	37.92	34.63
24	Water Holding Capacity	%	47.2	42	43	38	41	42
25	Zinc	mg/kg	10.5	7.7	19.6	8.0	20.2	12

Source: Sampling Results by Global Lab and Consultancy Services

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 to Sandy Loam Soil and Bulk Density of Soils in the study area varied between 1.05 – 1.15 g/cc. The Water Holding Capacity of the soil samples is found to be medium i.e. ranging from 38 – 47.2 %.

Chemical Characteristics –

- The nature of soil is slightly alkaline to strongly alkaline with pH range 7.38 – 8.02
- The available Nitrogen content range between 376 – 639.7 kg/ha
- The available Phosphorus content range between 15.6 – 24.1 mg/kg
- The available Potassium range between 0.87 – 1.34 mg/100g

3.2 WATER ENVIRONMENT

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

3.2.1 Surface Water Resources:

Walayar Lake 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.

Ground water occurring in phreatic conditions in weathered and fractured gneiss rock formation. 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 3.5.

TABLE 3.8: WATER SAMPLING LOCATIONS

S.NO	CODE	LOCATIONS	DISTANCE & DIRECTION	COORDINATES
SURFACE WATER				
1	SW-1	Walayar Lake	5.6km NW	10°50'32.67"N 76°51'42.88"E
GROUND WATER				
2	WW-1	Near Project Area	400m SE	10°48'27.59"N 76°54'39.42"E
3	WW-2	Kanal Pudur	6km South	10°45'23.86"N 76°54'36.78"E
4	WW-3	Sokkanur	5.2km East	10°48'32.73"N 76°57'18.44"E
5	BW-1	Near Project Area	420m SW	10°48'29.71"N 76°54'7.02"E
6	BW-2	Muthugoundanur	3.8km SE	10°47'24.40"N 76°56'17.91"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

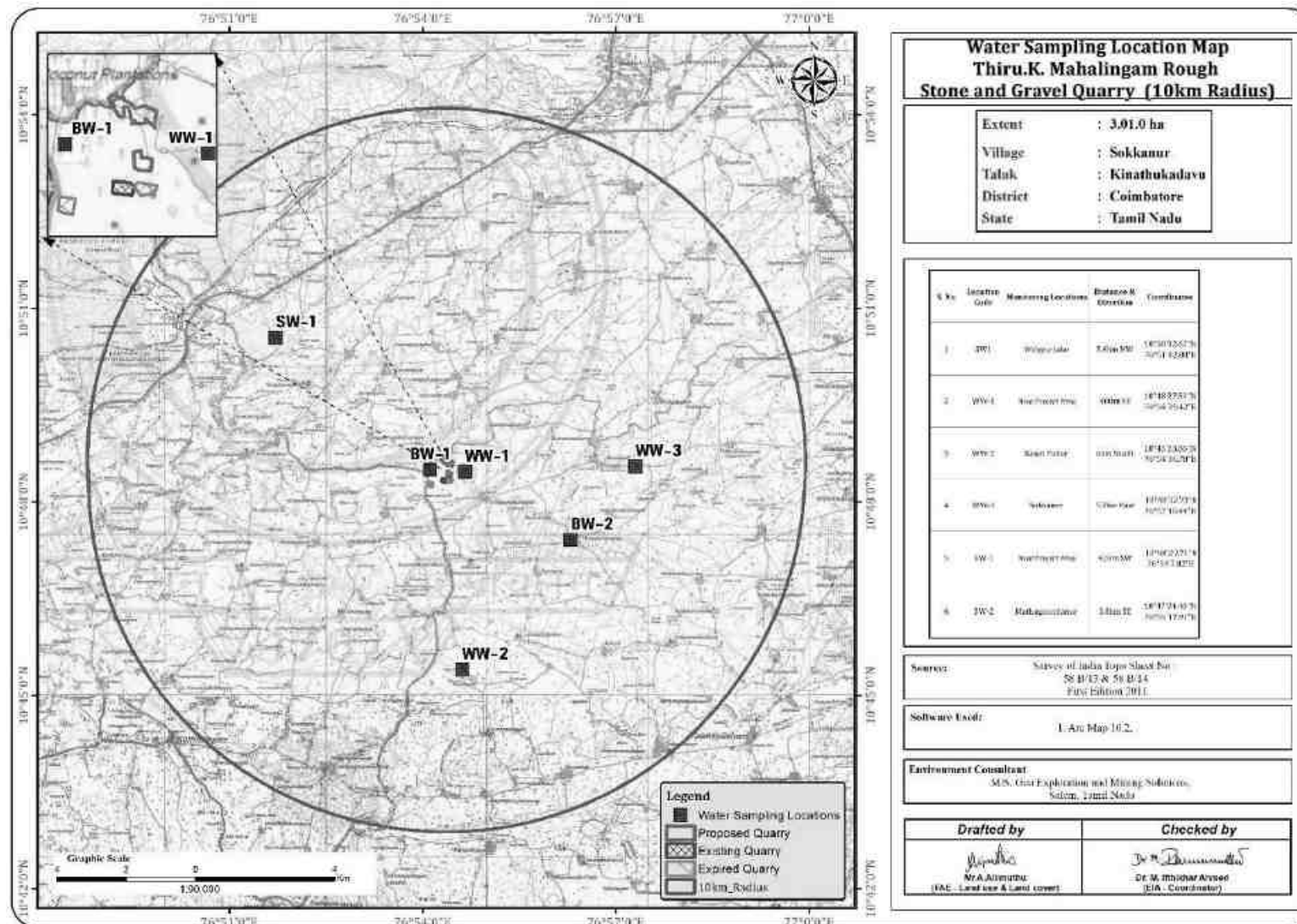
FIGURE 3.5: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

TABLE 3.9: GROUND WATER SAMPLING RESULTS

S.NO	Parameter	Units	WW-1 Near project area	WW-2 Goundanpalayam	WW-3 Near Project area	BW-1 Sunkarakanpalaya m	BW-2 Pethikuttai
1	Aluminium	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	0.024	BDL(DL: 0.01)	BDL(DL: 0.01)
2	Ammoniacal Nitrogen as NH ₃ -N	mg/l	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)
3	Arsenic as As	mg/l	BDL(DL: 0.002)	BDL(DL: 0.002)	BDL(DL: 0.002)	BDL(DL: 0.002)	BDL(DL: 0.002)
4	Barium as Ba	mg/l	BDL(DL: 0.1)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)
5	Boron as B	mg/l	BDL(DL: 0.1)	BDL(DL: 1.0)	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)
6	Cadmium as Cd	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)
7	Calcium as Ca	mg/l	120	92	124	120	80
8	Chloride as Cl ⁻	mg/l	140	245	160	380	130
9	Chromium as Cr	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.1)
10	Color	CU	< 1	< 1	< 1	< 1	< 1
11	Copper as Cu	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)
12	Cyanide as CN	mg/l	BDL(DL: 0.02)	BDL(DL: 0.02)	BDL(DL: 0.02)	BDL(DL: 0.02)	BDL(DL: 0.02)
13	Electrical Conductivity (EC)	µS/cm	1678	1516	1806	2234	1174
14	Fluoride as F ⁻	mg/l	0.3	0.35	0.36	0.31	0.4
15	Free Residual Chlorine as Cl ₂	mg/l	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)
16	Iron as Fe	mg/l	0.29	0.22	BDL(DL: 0.1)	0.2	0.13
17	Lead as Pb	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)
18	Magnesium as Mg	mg/l	68	56	75	73	41
19	Manganese as Mn	mg/l	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)
20	Mercury as Hg	mg/l	BDL(DL: 0.002)	BDL(DL: 0.002)	BDL(DL: 0.002)	BDL(DL: 0.002)	BDL(DL: 0.002)
21	Molybdenum as Mo	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)
22	Nitrate as NO ₃	mg/l	BDL(DL: 2.0)	BDL(DL: 2.0)	BDL(DL: 2.0)	BDL(DL: 2.0)	BDL(DL: 2.0)
23	Odor	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
24	pH	-	7.38	7.63	7.26	7.54	7.78
25	Phenols	mg/l	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)	BDL(DL: 0.1)
26	Selenium as Se	mg/l	BDL(DL: 0.005)	BDL(DL: 0.005)	BDL(DL: 0.005)	BDL(DL: 0.005)	BDL(DL: 0.005)
27	Sulphate as SO ₄	mg/l	189	79	101	53	59
28	Sulphide as S (Iodometric Method)	mg/l	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)	BDL(DL: 1.0)
29	Total Alkalinity as CaCO ₃	mg/l	450	370	550	650	290
30	Total Dissolved Solids (TDS)	mg/l	1082	984	1172	1450	760
31	Total Hardness as CaCO ₃	mg/l	580	460	620	600	370
32	Total Suspended Solids (TSS)	mg/l	BDL(DL: 2.0)	BDL(DL: 2.0)	BDL(DL: 2.0)	BDL(DL: 2.0)	BDL(DL: 2.0)
33	Turbidity	NTU	< 1	< 1	< 1	< 1	< 1
34	Zinc as Zn	mg/l	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)	BDL(DL: 0.01)
35	Escherichia coli	MPN/100ml	Absent	Absent	Absent	Absent	Absent
36	Total Coliforms	MPN/100ml	Present	Present	Present	Present	Present

* IS: 10500:2012-Drinking Water Standards; # within the permissible limit as per the WHO Standard. The water can be used for drinking purpose in the absence of alternate sources. Note: SW- Surface water, GW – Ground water

TABLE 3.10: SURFACE WATER SAMPLING RESULTS

Sl. No.	Parameter	Unit	RESULT
			SW1 (Bavanisagar)
1	Aluminium	mg/l	0.014
2	Ammoniacal Nitrogen as NH ₃ -N	mg/l	BDL(DL: 1.0)
3	Arsenic as As	mg/l	BDL(DL: 0.002)
4	Barium as Ba	mg/l	0.09
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	mg/l	BDL(DL: 2.0)
6	Boron as B	mg/l	BDL(DL: 0.1)
7	Cadmium as Cd	mg/l	BDL(DL: 0.01)
8	Calcium as Ca	mg/l	184
9	Chemical Oxygen Demand (COD)	mg/l	BDL(DL: 10.0)
10	Chloride as Cl ⁻	mg/l	320
11	Chromium as Cr	mg/l	BDL(DL: 0.01)
12	Color	CU	5.0
13	Copper as Cu	mg/l	BDL(DL: 0.01)
14	Cyanide as CN	mg/l	BDL(DL: 0.02)
15	Dissolved Oxygen (DO)	mg/l	4.8
16	Electrical Conductivity	μS/cm	2665
17	Fluoride as F ⁻	mg/l	0.23
18	Free Residual Chlorine as Cl ₂	mg/l	BDL(DL: 1.0)
19	Iron as Fe	mg/l	0.29
20	Lead as Pb	mg/l	BDL(DL: 0.01)
21	Magnesium as Mg	mg/l	112
22	Manganese as Mn	mg/l	BDL(DL: 0.1)
23	Mercury as Hg	mg/l	BDL(DL: 0.002)
24	Molybdenum as Mo	mg/l	BDL(DL: 0.01)
25	Nitrate as NO ₃	mg/l	BDL(DL: 2.0)
26	Odor	-	Agreeable
27	pH	-	8.12
28	Phenols	mg/l	BDL(DL: 0.1)
29	Selenium as Se	mg/l	BDL(DL: 0.005)
30	Sulphate as SO ₄	mg/l	146
31	Sulphide as S (Iodometric Method)	mg/l	BDL(DL: 1.0)
32	Total Alkalinity as CaCO ₃	mg/l	810
33	Total Dissolved Solids (TDS)	mg/l	1732
34	Total Hardness as CaCO ₃	mg/l	920
35	Total Suspended Solids	mg/l	14
36	Turbidity	NTU	10
37	Zinc as Zn	mg/l	BDL(DL: 0.01)
38	Escherichia coli	MPN/100ml	Absent
39	Total Coliforms	MPN/100ml	Absent
			0.014

3.2.4 Interpretation & Conclusion

Surface Water

PH:

The pH value of surface water is about 8.12 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 1732 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 320 mg/l, Nitrates BDL (DL: 2.0)mg/l, while sulphates varied from 146 mg/l.

Ground Water

The pH of the water samples collected ranged from 7.26 – 7.78 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. The Total Dissolved Solids were found in the range of 760–1450 mg/l in all samples. The Total hardness varied between 370 - 620 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 70-65m. The maximum depth proposed out of proposed projects is 37m 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. There is no necessity of stream, channel diversion due to these proposed projects.

During the rainy season there is a possibility of collection of seepage water from the subsurface levels which will be collected and stored in the mine sump pits and will be used for dust suppression and greenbelt development and during the end of the life of the mine this collected water will act as a temporary reservoir.

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

Station Code	Water Level in Meters bgl			Latitude	Longitude
	Mar 2025	Apr 2025	May 2025		
OW1	11.5	12.3	12.9	10° 48' 27.5733" N	76° 54' 39.5377" E
OW2	11.8	12.6	13.2	10° 48' 34.4015" N	76° 55' 00.9282" E
OW3	11.7	12.5	13.1	10° 48' 12.6357" N	76° 54' 45.6977" E
OW5	11.4	12.2	12.8	10° 48' 12.5461" N	76° 54' 10.4475" E
OW4	11.2	12	12.6	10° 47' 41.9323" N	76° 54' 06.2829" E
OW6	12	12.8	13.4	10° 48' 18.9252" N	76° 53' 32.6279" E
OW7	12.1	12.9	13.5	10° 48' 43.4175" N	76° 54' 07.1579" E
OW8	11.3	12.1	12.7	10° 49' 03.0941" N	76° 53' 54.1470" E
OW9	11.9	12.7	13.3	10° 48' 49.0935" N	76° 54' 58.1115" E

Source: Onsite monitoring data

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

Station Code	Water Level in Meters bgl			Latitude	Longitude
	Mar 2025	Apr 2025	May 2025		
BW1	72.2	73	73.4	10° 48' 29.5856" N	76° 54' 07.0637" E
BW2	71.6	72.4	72.8	10° 48' 43.9578" N	76° 53' 43.6493" E
BW3	70.7	71.5	71.9	10° 48' 53.0722" N	76° 54' 14.4043" E
BW4	72	72.8	73.2	10° 49' 12.4368" N	76° 54' 24.0582" E
BW5	71.3	72.1	72.5	10° 48' 34.1025" N	76° 54' 45.5636" E
BW6	71.2	72	72.4	10° 48' 23.3742" N	76° 55' 00.8725" E
BW7	71.9	72.7	73.1	10° 48' 01.6491" N	76° 54' 25.2066" E
BW8	70.6	71.4	71.8	10° 47' 57.7811" N	76° 54' 03.6341" E
BW9	71.4	72.2	72.6	10° 48' 11.9572" N	76° 53' 32.7179" E

Source: Onsite monitoring data

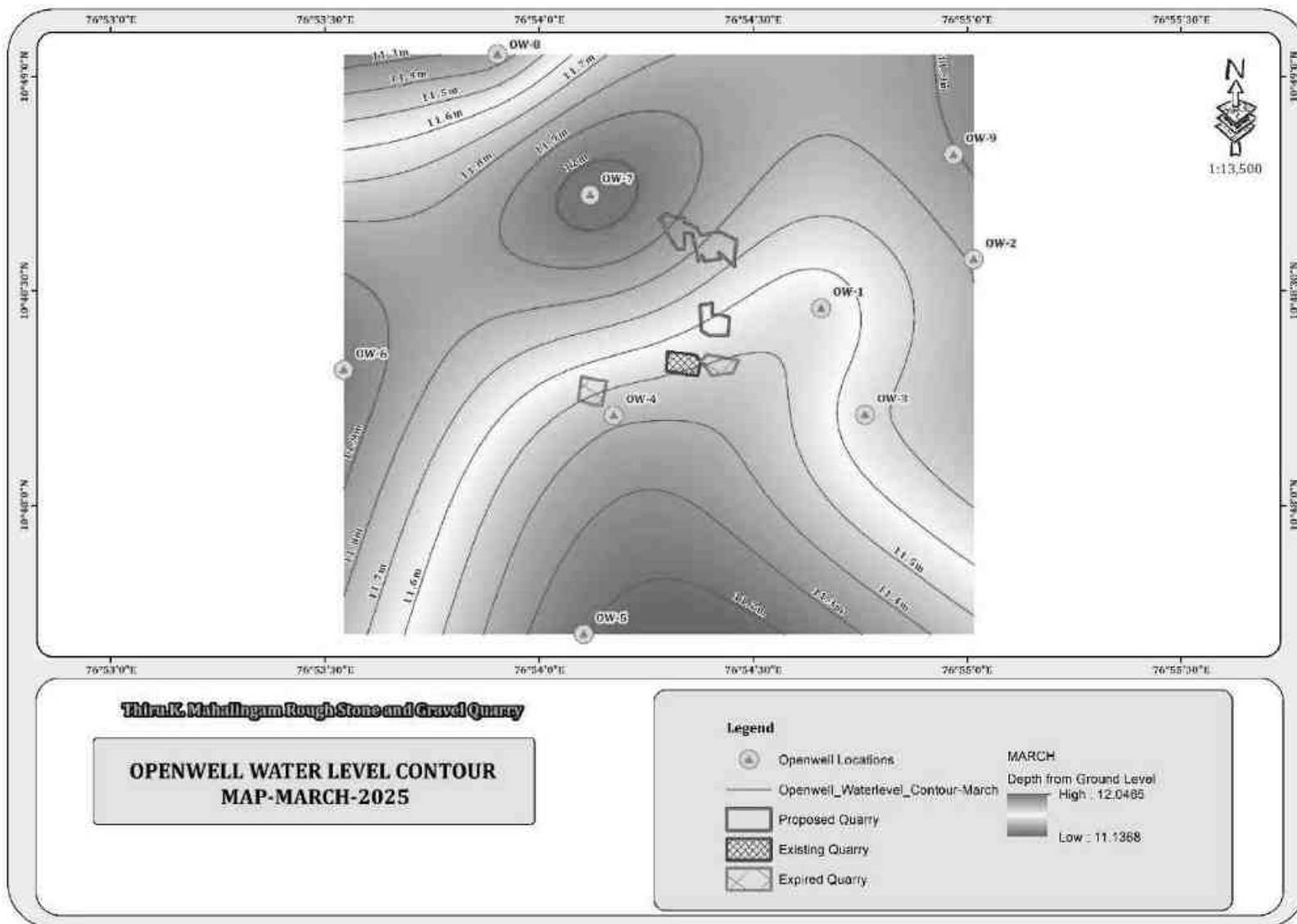
FIGURE 3.6: OPEN WELL CONTOUR MAP – MARCH 2025

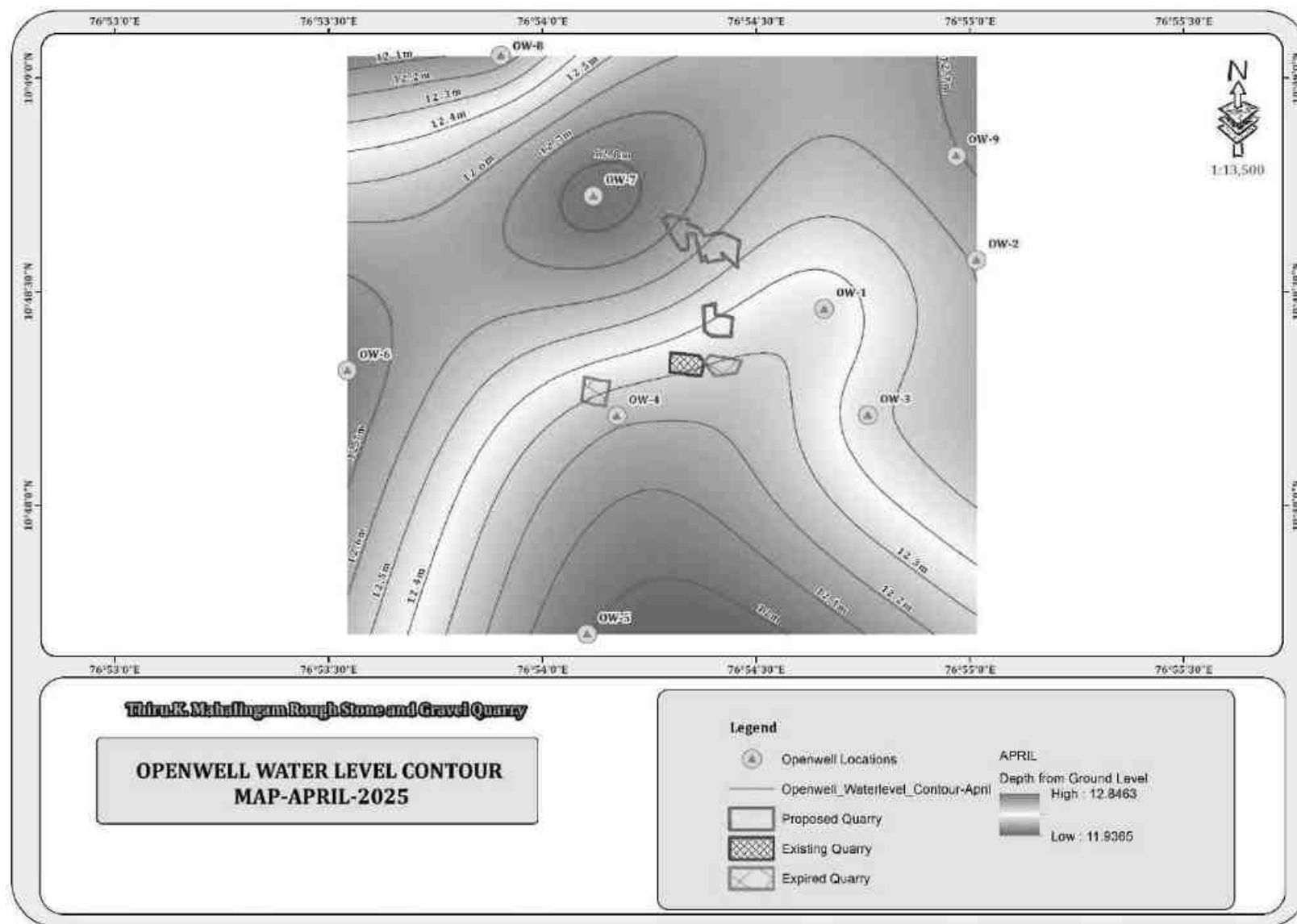
FIGURE 3.7: OPEN WELL CONTOUR MAP – APRIL 2025

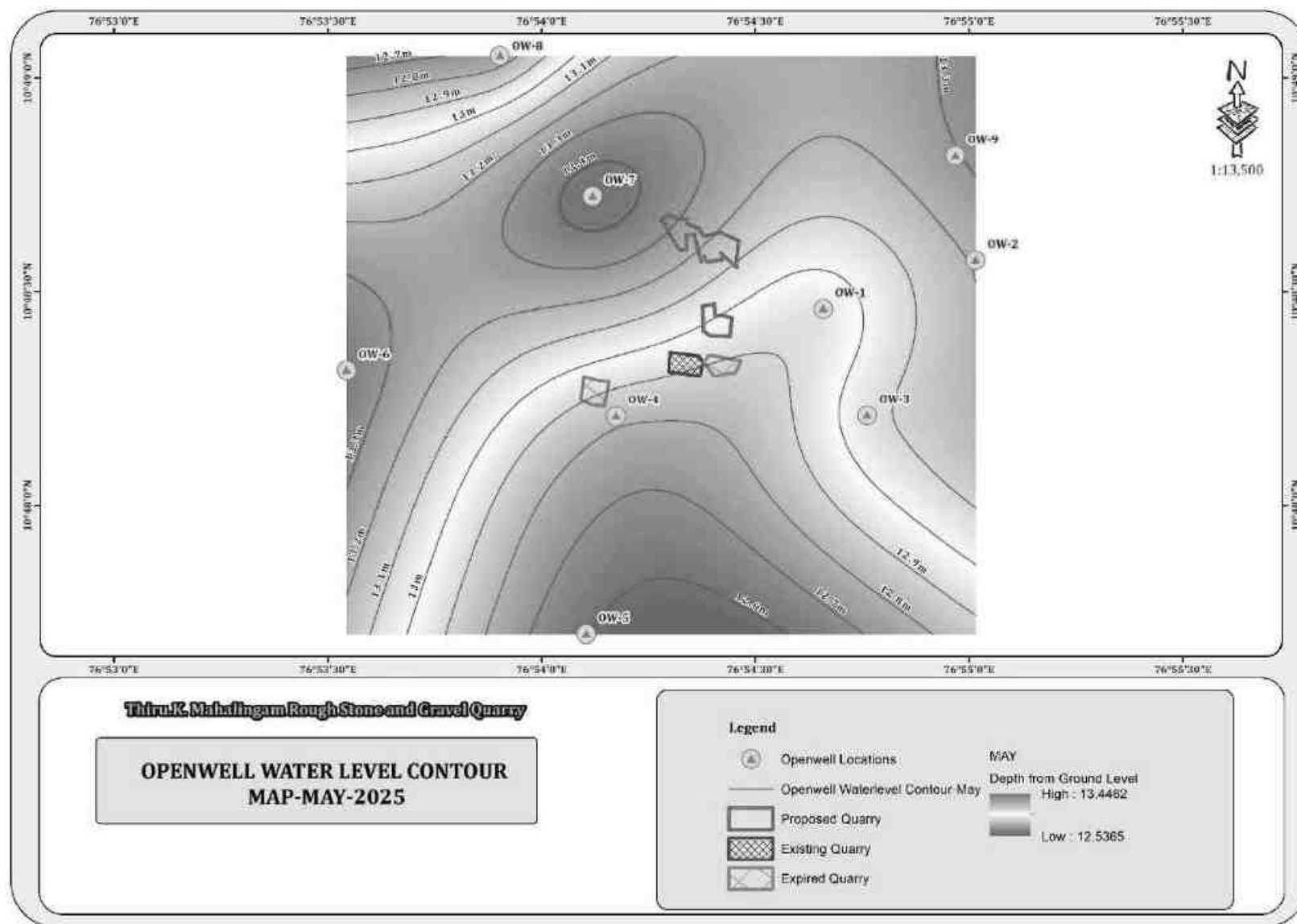
FIGURE 3.8: OPEN WELL CONTOUR MAP – MAY 2025

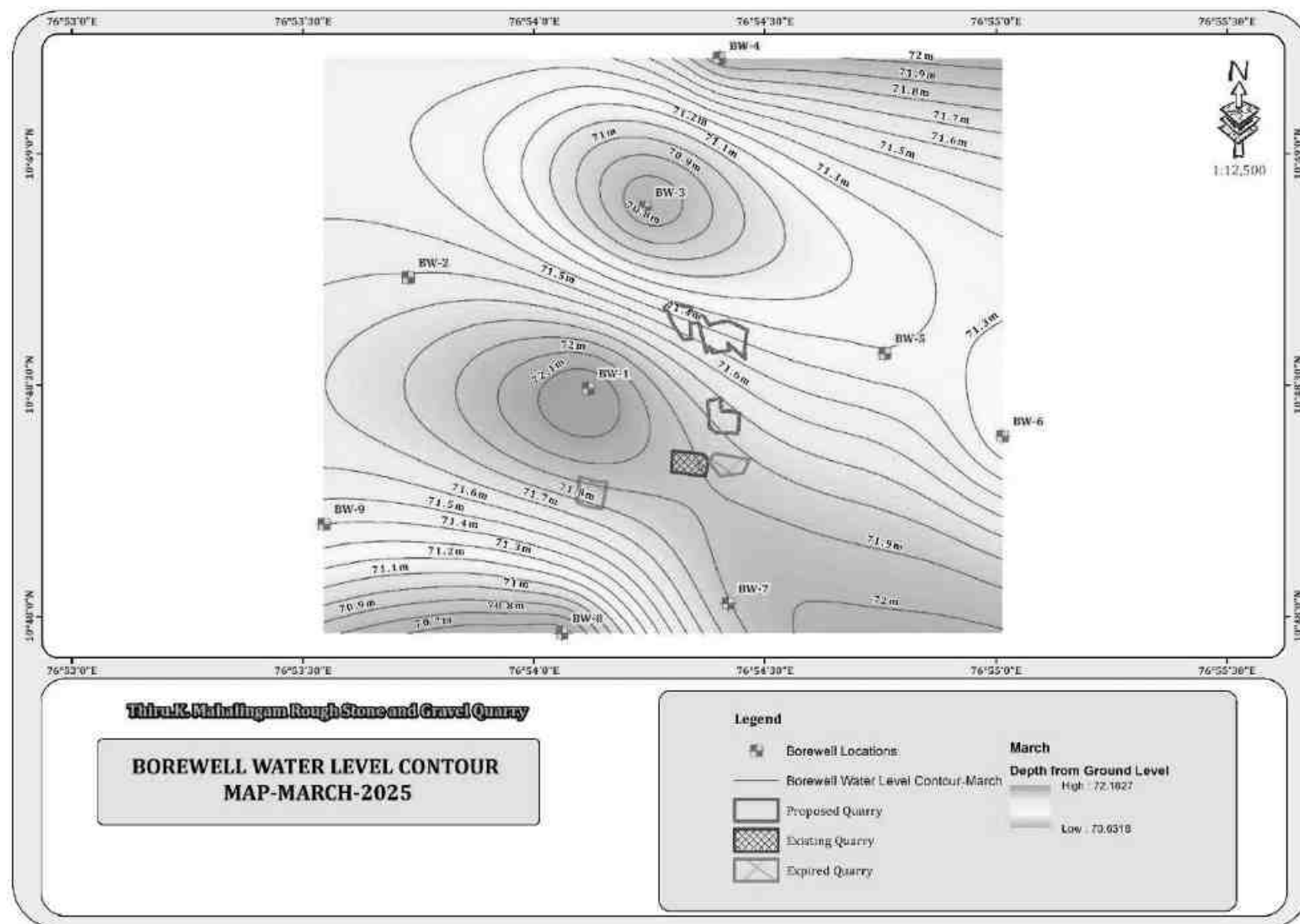
FIGURE 3.9: BOREWELL CONTOUR MAP – MARCH 2025

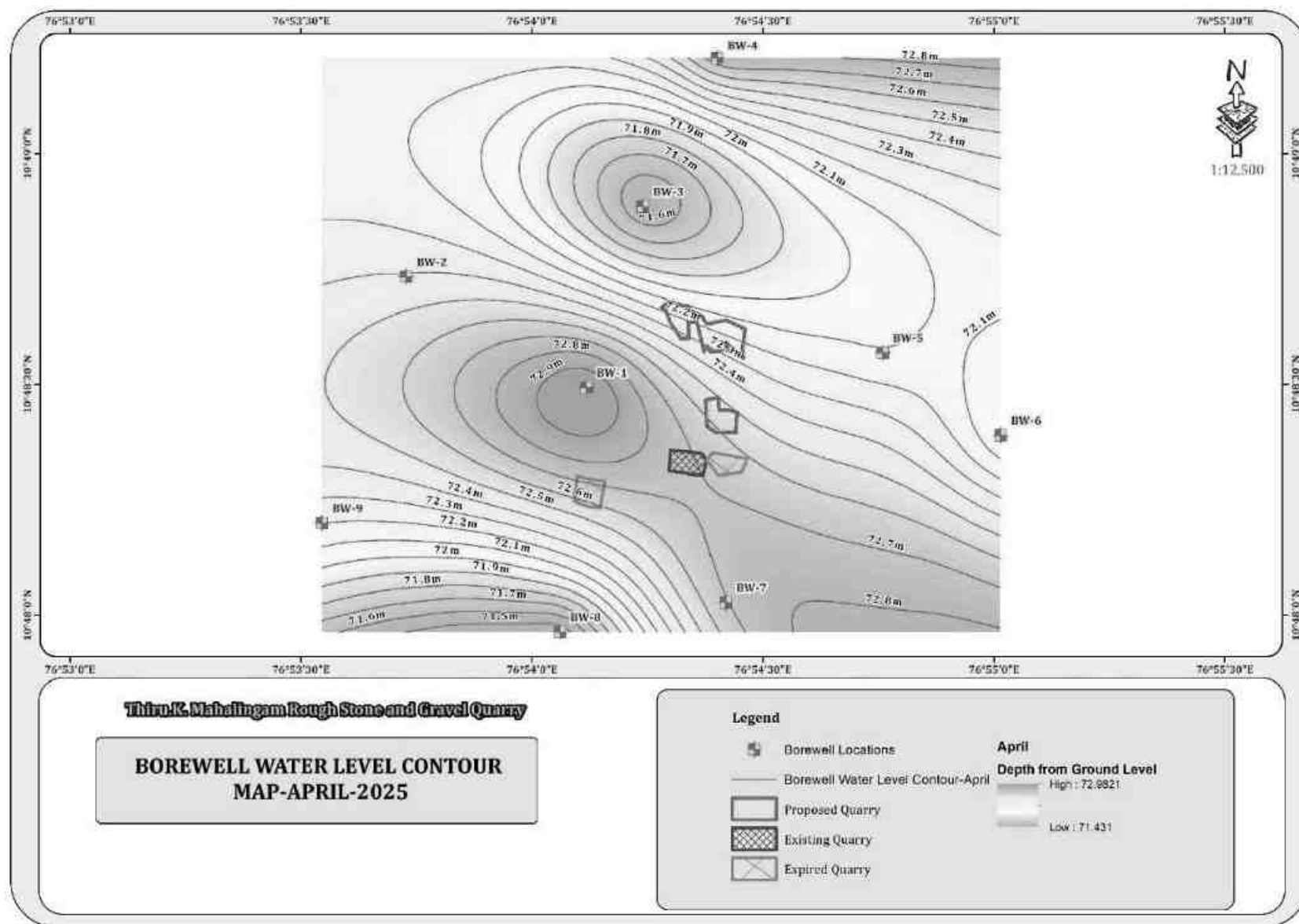
FIGURE 3.10: BOREWELL CONTOUR MAP – APRIL 2025

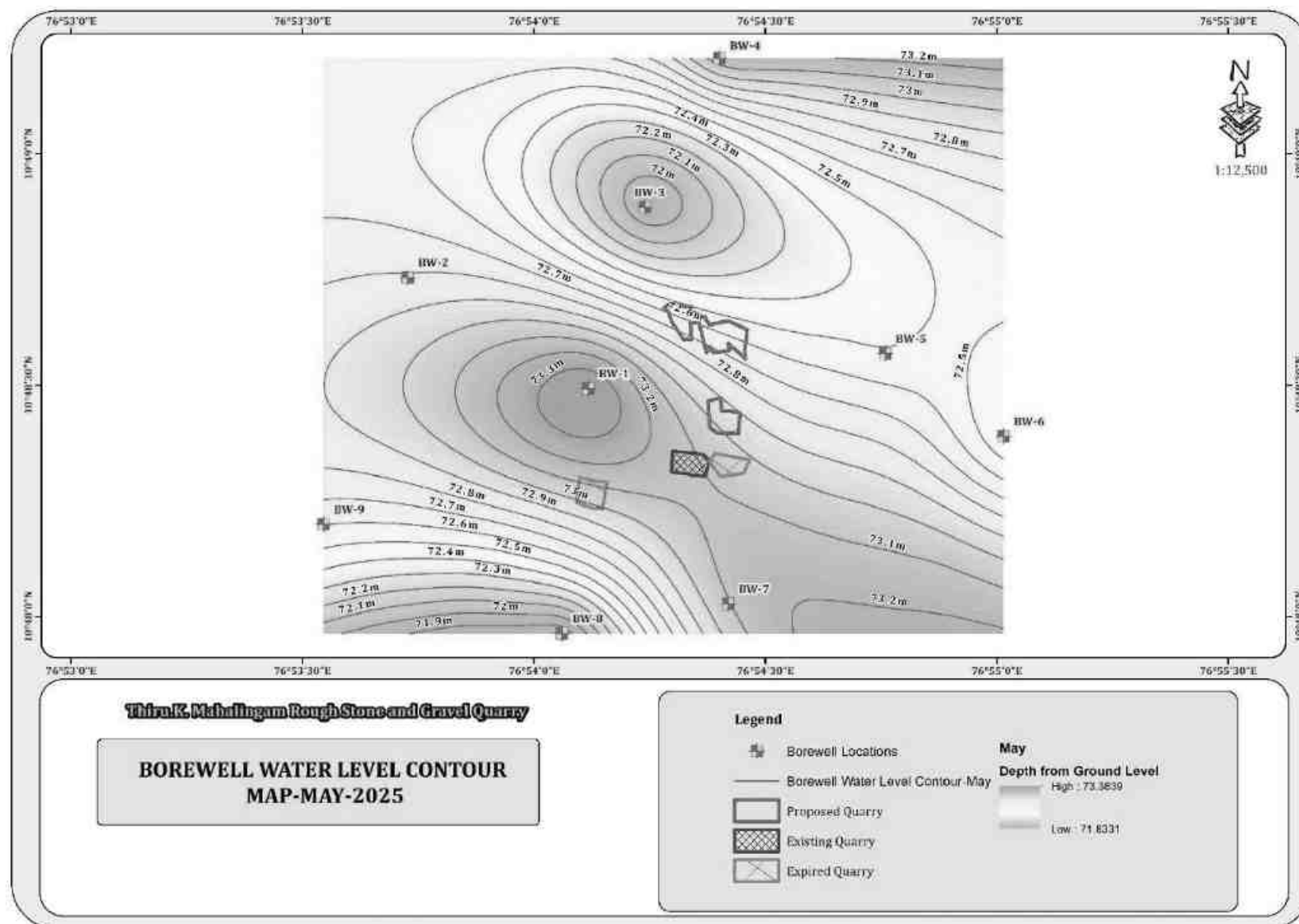
FIGURE 3.11: BOREWELL CONTOUR MAP – MAY 2025

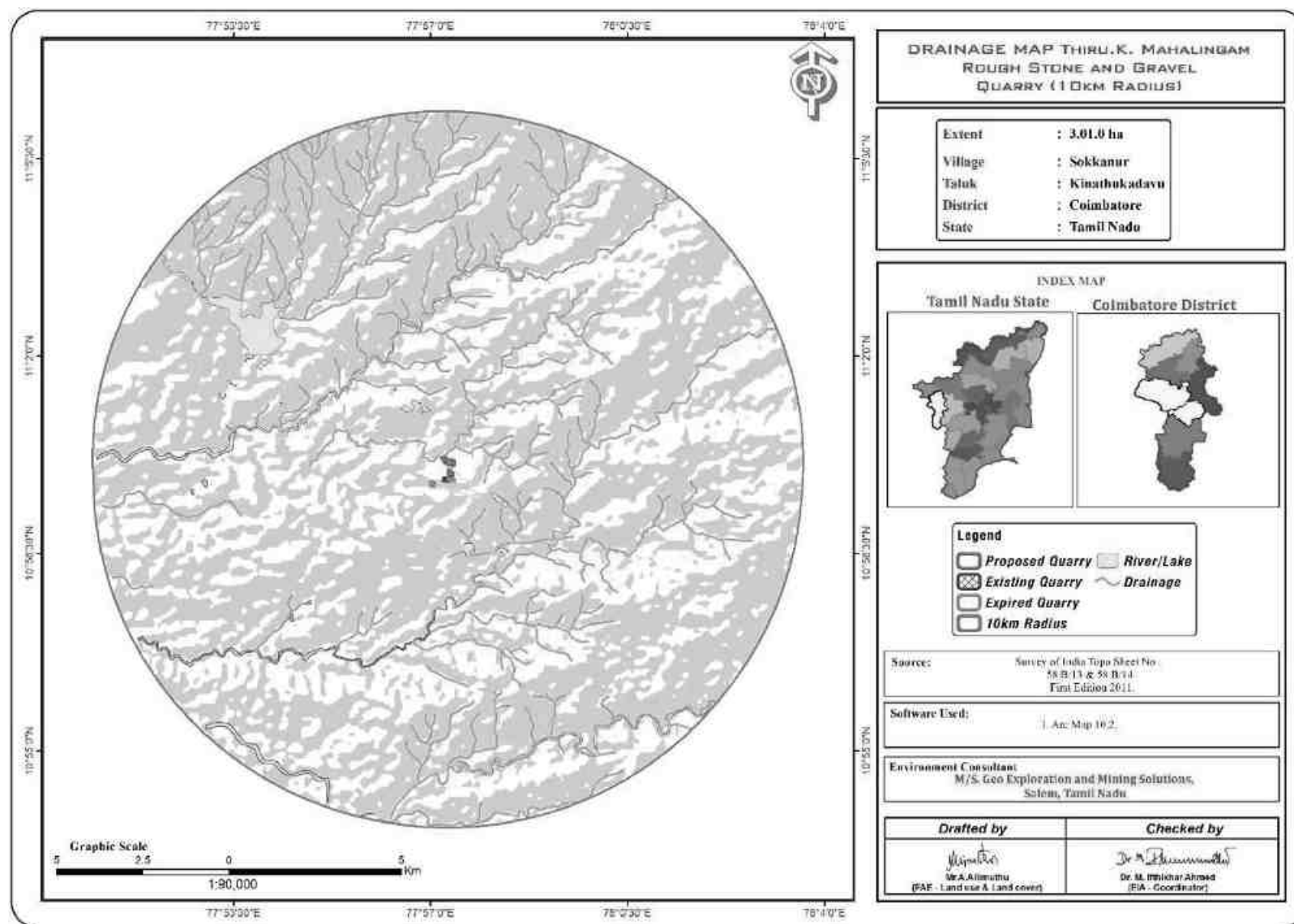
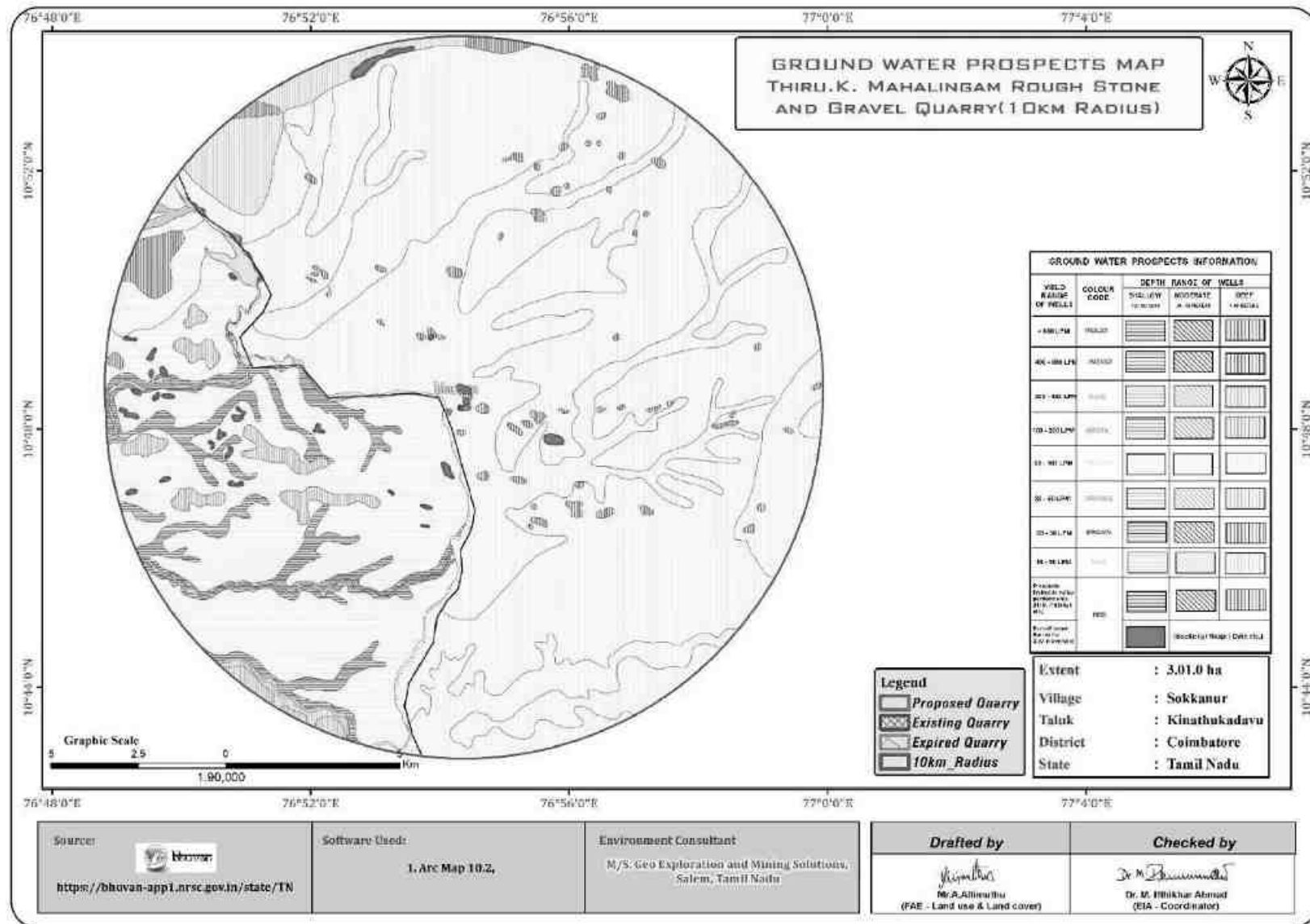
FIGURE 3.12: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE

FIGURE 3.13: GROUND WATER PROSPECT MAP

3.2.5.1 Methodology and Data Acquisition

Electric Resistivity Method is well established for delineating lateral as well vertical discontinuities in the resistive structure of the Earth's subsurface. The present study makes use of vertical electric sounding (VES) to delineate the Vertical Resistivity structure at depth. 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 form 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,

$$\rho_r = F\rho_w = a \phi^m \rho_w$$

ρ_r = Resistivity of Rocks

ρ_w = Resistivity of water in pores of rock

F = Formation Factor

ϕ = Fractional pore volume

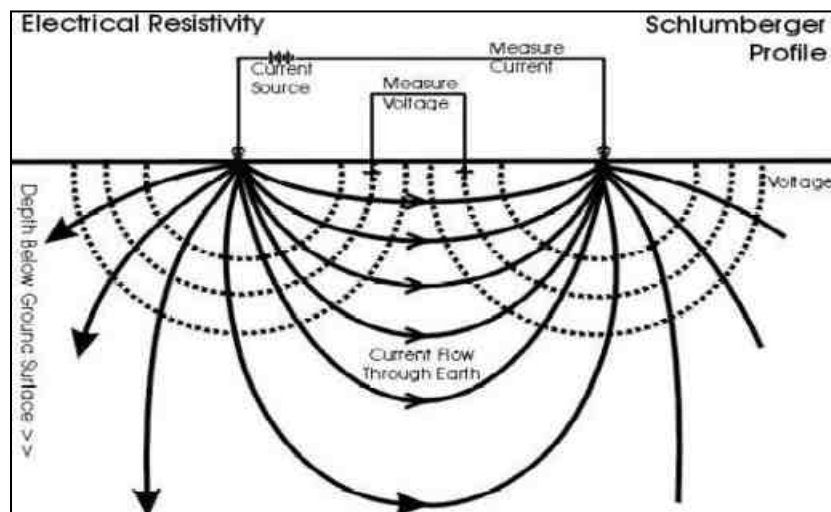
A = Constants with values ranging from 0.5 to 2.5

3.2.5.2 Survey Layout

The layout for a resistivity survey depends on the choice of the current and potential electrode arrangement, which is called electrode array. Here the present study is considered with Schlumberger array. In which the distance may be used for current electrode separation while potential electrode separation is kept on third to one fifth of the same. One interesting aspect in VES is the principle of reciprocity, which permits interchange of the potential and current electrode without any effect on the measured apparent resistivity.

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 noise ration can be enhanced by $\sqrt{N}$ where N is the number of stacked readings. This SSR meter in which running averages of measurements $[1, (1+2)/2, (1+2+3)/3 \dots (1+2+\dots+16)/16]$ 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 70-65 m. The maximum depth proposed out of proposed projects is 37m 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.

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 sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities. 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.

This section describes the identification of sampling locations, methodology adopted during the monitoring period and sampling frequency.

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 –

Coimbatore is 421m above sea level. Coimbatore's climate is classified as tropical. The summers here have a good deal of rainfall, while the winters have very little rain. This location is classified as Aw by Köppen and Geiger. In Coimbatore –

- The average annual temperature is 25.4°C | 77.8°F.
- The annual rainfall here is around 952mm | 37.5 inch.
- The driest month is January with 13mm | 0.5 inch of rainfall. The greatest amount of precipitation occurs in October, with an average of 181mm | 7.1 inch.
- The warmest month of the year is April, with an average temperature of 28.9°C | 84.1°F. The lowest average temperatures in the year occur in December, when it is around 23.2°C | 73.7°F.
- The difference in precipitation between the driest month and the wettest month is 168 mm | 7 inch. The variation in annual temperatures throughout the year is 5.8°C | 42.4°F.

Source: <https://en.climate-data.org/asia/india/tamil-nadu/coimbatore-2788/>

Rainfall –

TABLE 3.13: RAINFALL DATA

Actual Rainfall in mm									Normal Rainfall in mm
2013	2014	2015	2016	2017	2018	2019	2020	2021	
901.0	1221.7	992.9	505.5	873.4	1302.0	1272.4	1585.3	2119.1	1213.2

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

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE

S.No	Parameters		Mar-2025	Apr-2025	May-2025
1	Temperature (°C)	Max	29.07	28.67	28.82
		Min	24.79	25.62	23.34
		Avg.	26.93	27.14	26.08
2	Relative Humidity (%)	Avg.	60.02	68.91	77.36
3	Wind Speed (m/s)	Max	5.04	3.06	4.14
		Min	1.17	1.01	0.96
		Avg.	3.10	2.03	2.55
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind direction		E,ESE	WSW,W	WSW,W

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

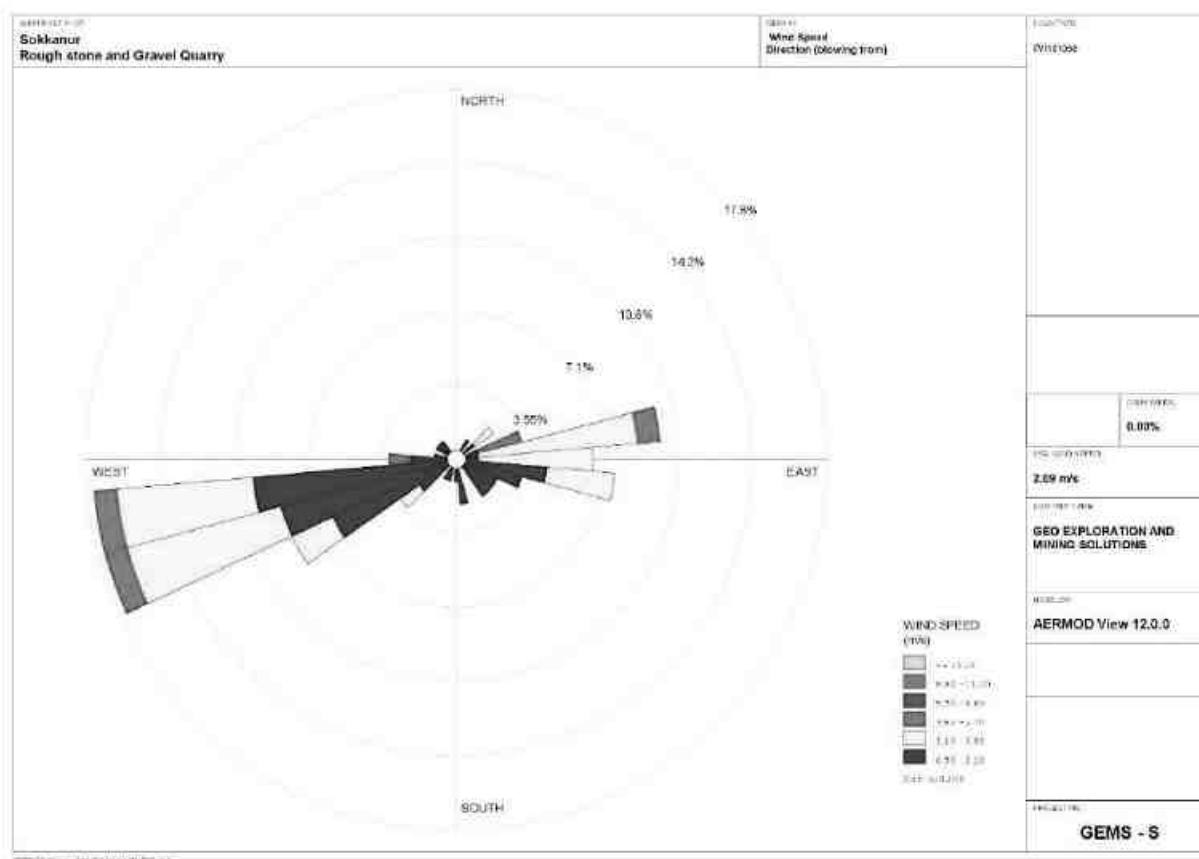
Correlation between Secondary and Primary Data

The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Coimbatore_Agro. A comparison of site data generated during the three months with that of IMD, Coimbatore_Agro reveals the following:

- The average maximum and minimum temperatures of IMD, Coimbatore_Agro showed a higher in respect of on-site data i.e. in Sokkanur village.
- The relative humidity levels were lesser at site as compared to IMD, Coimbatore_Agro.
- The wind speed and direction at site shows similar trend that of IMD, Coimbatore_Agro.

Wind rose diagram of the study site is depicted in Figure. 3.14. Predominant downwind direction of the area during study season is North-East to South West.

FIGURE 3.14: WINDROSE DIAGRAM



In the abstract of collected data wind rose were drawn on presented in figure No.3.14 during the monitoring period in the study area

1. Predominant winds were from – NE, SW
2. Wind velocity readings were recorded between 3.60 – 5.70 m/s
3. Calm conditions prevail of about 0.00 % of the monitoring period
4. Temperature readings ranging from 26.08 to 27.14 °C
5. Relative humidity ranging from 60.02 to 77.36 %
6. The monitoring was carried out continuously for three months. (March – May 2025)

3.3.2 Methodology and Objective

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

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

3.3.3 Sampling and Analytical Techniques

TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS

Parameter	Method	Instrument
PM2.5	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM10	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO ₂	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NO _x	IS-5182 Part II (Jacob & Hochheiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by Global Lab and Consultancy Services & CPCB Notification

TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl.No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide (µg/m ³)	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide (µg/m ³)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than 10µm) PM ₁₀ (µg/m ³)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than 2.5 µm PM _{2.5} (µg/m ³)	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 March 2025 – May 2025. The baseline data of ambient air has been generated for PM₁₀, PM_{2.5}, Sulphur Dioxide (SO₂) & Nitrogen Dioxide (NO₂) Monitoring has been carried out as per the CPCB, MoEF guidelines and notifications.

It was ensured that 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 3.15 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	AAQ1	Core Zone	Core Zone	10°48'27.79"N 76°54'22.88"E
2	AAQ2	Core Zone	Core Zone	10°48'23.96"N 76°54'26.21"E
3	AAQ3	Near Existing Quarry	400m SW	10°48'21.40"N 76°54'17.70"E
4	AAQ4	Pichanur	3.8km NW	10°50'10.14"N 76°52'47.94"E
5	AAQ5	Kanal Pudur	6km South	10°45'19.47"N 76°54'33.93"E
6	AAQ6	Muthugoundanur	4.0km SE	10°47'26.39"N 76°56'19.14"E
7	AAQ7	Kannamanayakkanur	4.3km NE	10°49'6.89"N 76°56'45.83"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS.

FIGURE 3.15: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

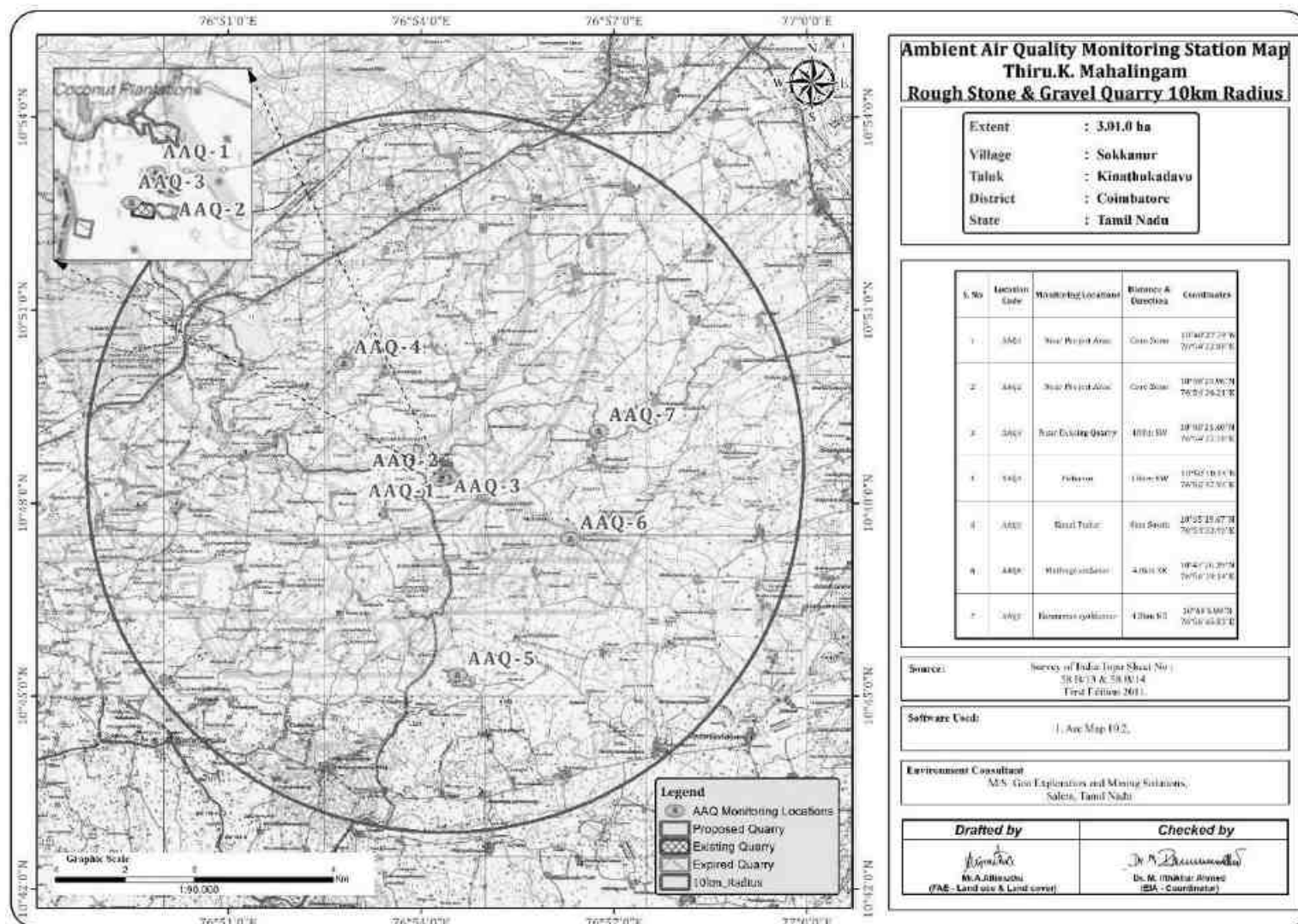


TABLE 3.18: SUMMARY OF AAQ – 1 to AAQ – 7

PM_{2.5}	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	20.5	21.0	23.8	24.1	24.3	24.1	23.5
Minimum	19.2	17.3	22.5	19.5	20.8	21.6	20.6
Maximum	22.5	23.7	24.5	25.8	25.8	25.9	25.9
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0

PM₁₀	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	42.0	42.5	45.5	44.6	46.2	45.4	44.5
Minimum	39.2	38.2	44.1	40.6	41.4	41.6	40.9
Maximum	44.5	45.2	46.8	47.0	51.4	48.9	47.8
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0

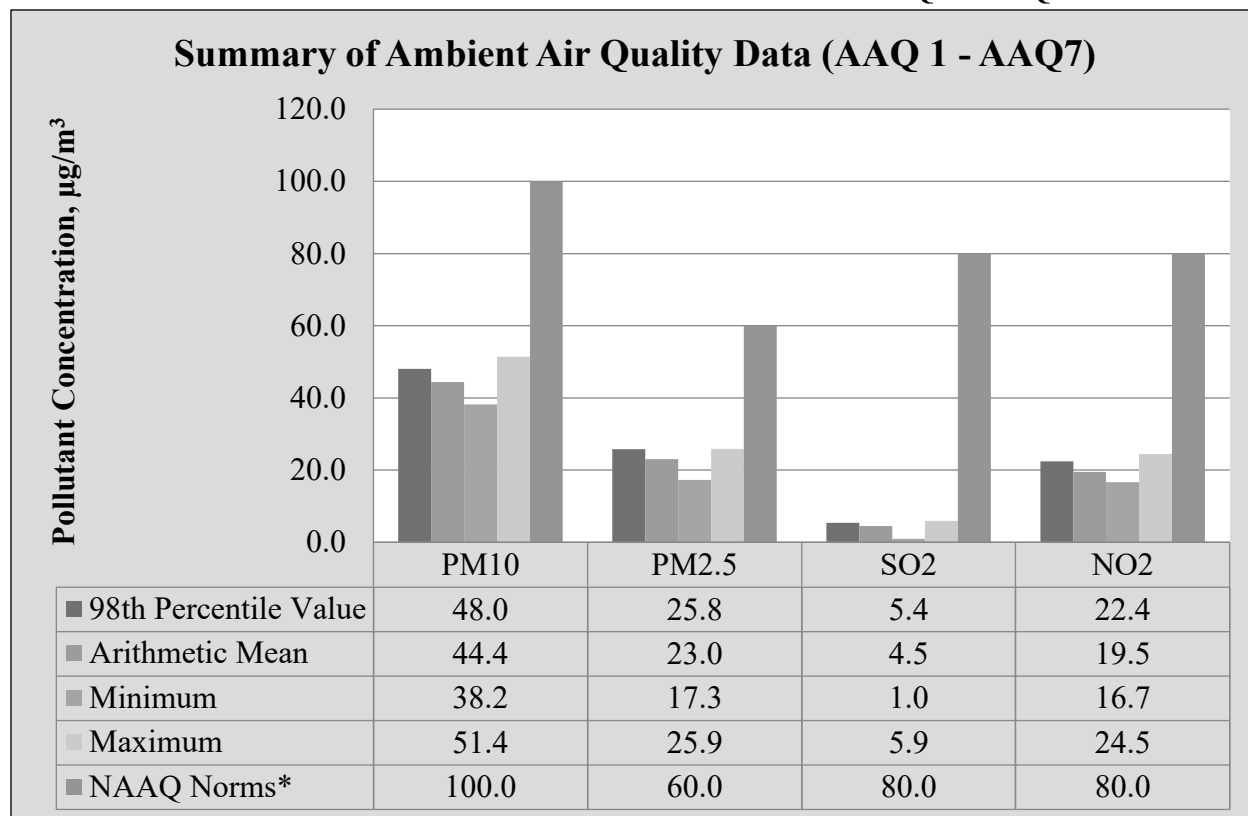
SO₂	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	4.3	4.1	4.8	4.4	4.4	4.8	4.7
Minimum	0.0	0.0	4.1	0.0	0.0	4.0	4.0
Maximum	5.2	5.0	5.6	5.1	5.3	5.9	5.3
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

NO₂	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	19.6	19.6	19.4	19.2	19.5	19.6	19.6
Minimum	17.1	17.0	18.0	17.2	16.7	18.5	18.1
Maximum	22.2	24.5	20.6	21.5	21.5	20.6	20.9
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

TABLE 3.28: ABSTRACT OF AMBIENT AIR QUALITY DATA

1	Parameter	PM_{2.5}	PM₁₀	SO₂	NO₂
2	No. of Observations	182	182	182	182
3	10 th Percentile Value	41.2	20.4	4.1	17.8
4	20 th Percentile Value	42.5	21.0	4.2	18.5
5	30 th Percentile Value	43.2	21.9	4.4	18.7
6	40 th Percentile Value	43.9	22.9	4.5	19.2
7	50 th Percentile Value	44.6	23.7	4.6	19.5

8	60 th Percentile Value	45.3	24.1	4.7	19.8
9	70 th Percentile Value	45.9	24.5	4.9	20.1
10	80 th Percentile Value	46.3	24.8	5.0	20.5
11	90 th Percentile Value	47.0	25.2	5.1	20.9
12	95 th Percentile Value	47.5	25.5	5.3	21.5
13	98 th Percentile Value	48.0	25.8	5.4	22.4
14	Arithmetic Mean	44.4	23.0	4.5	19.5
15	Geometric Mean	44.3	23.0	4.4	19.4
16	Standard Deviation	2.3	1.9	0.8	1.3
17	Minimum	38.2	17.3	1.0	16.7
18	Maximum	51.4	25.9	5.9	24.5
19	NAAQ Norms*	100.0	60.0	80.0	80.0
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

FIGURE 3.16: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ 7

Source: Table 3.17 to 3.27

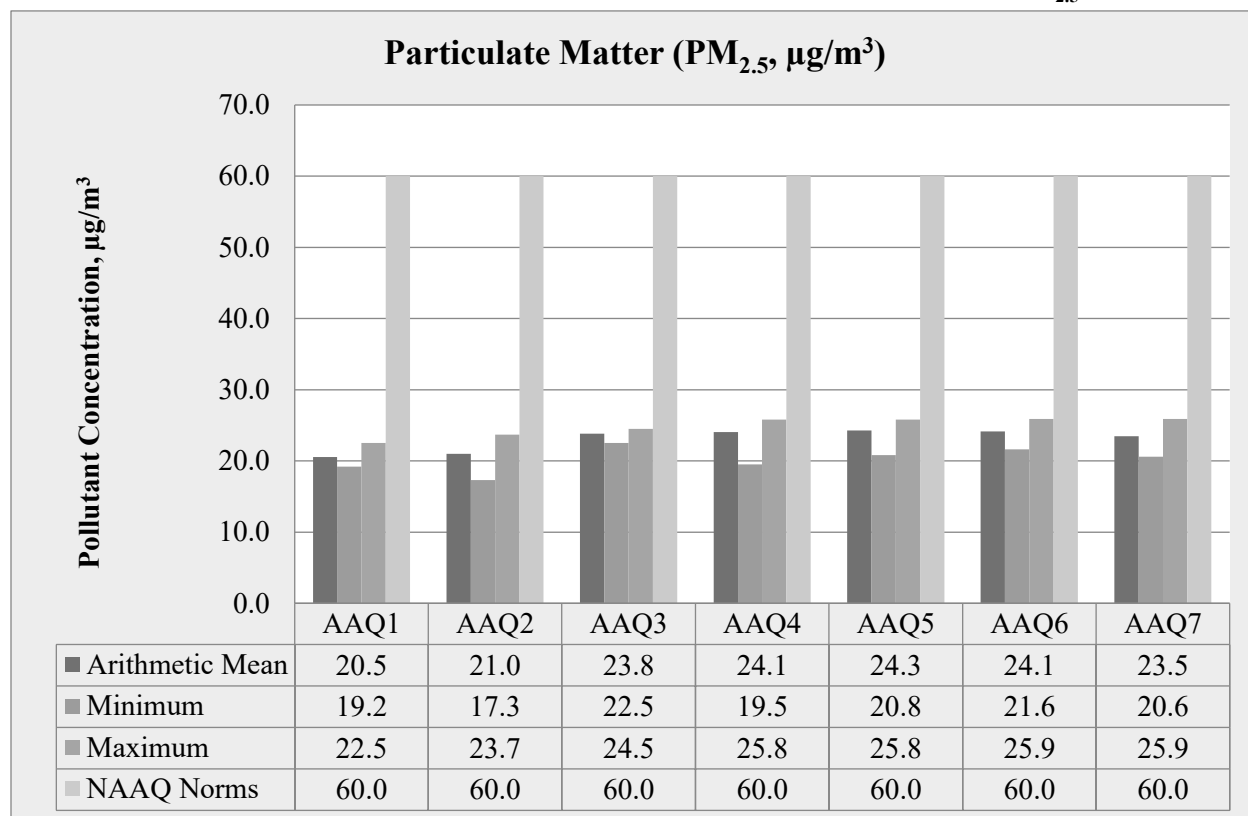
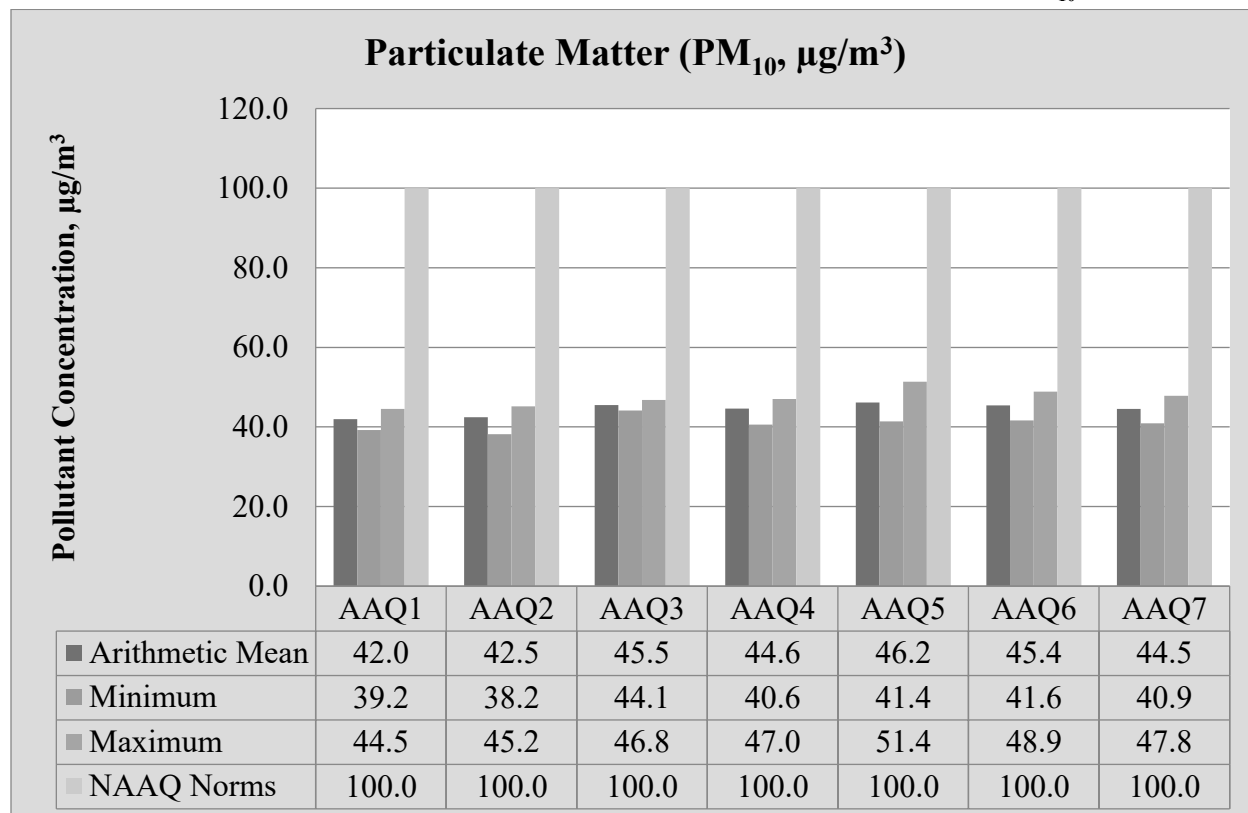
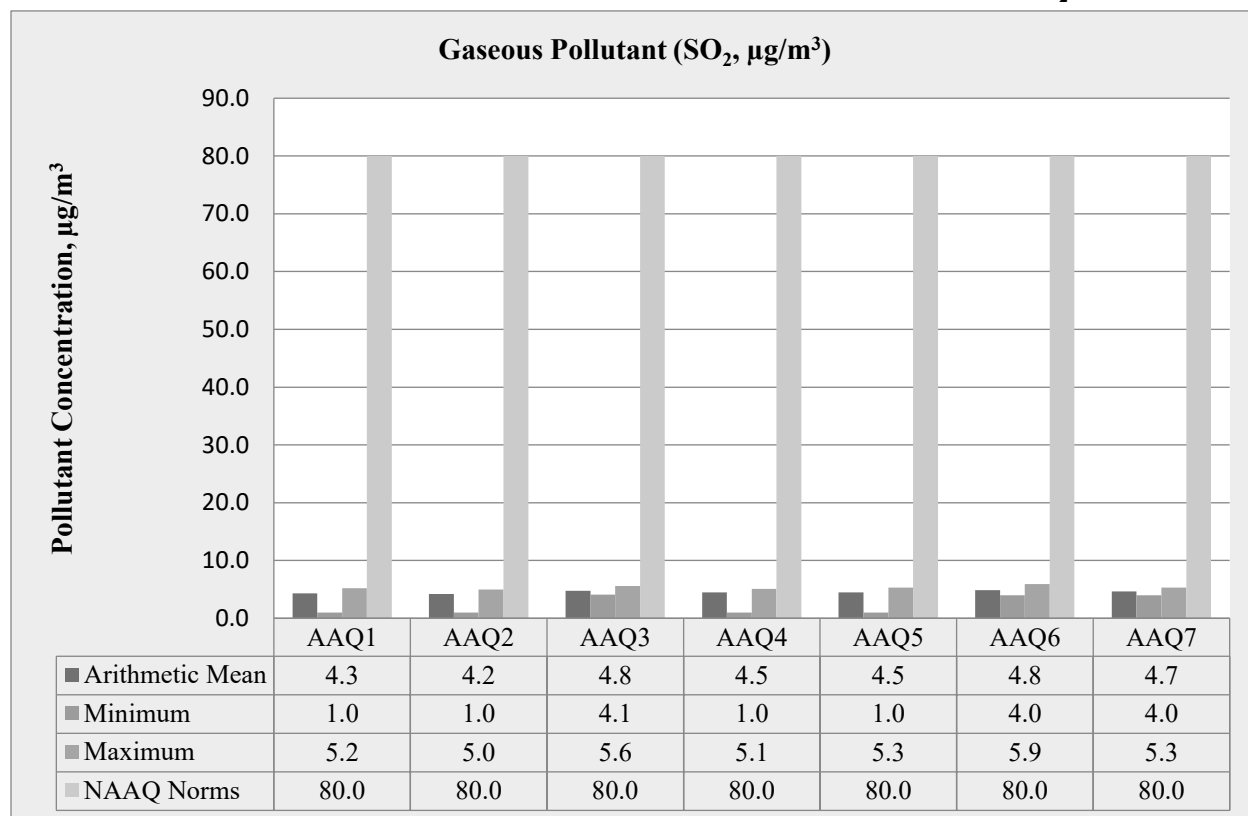
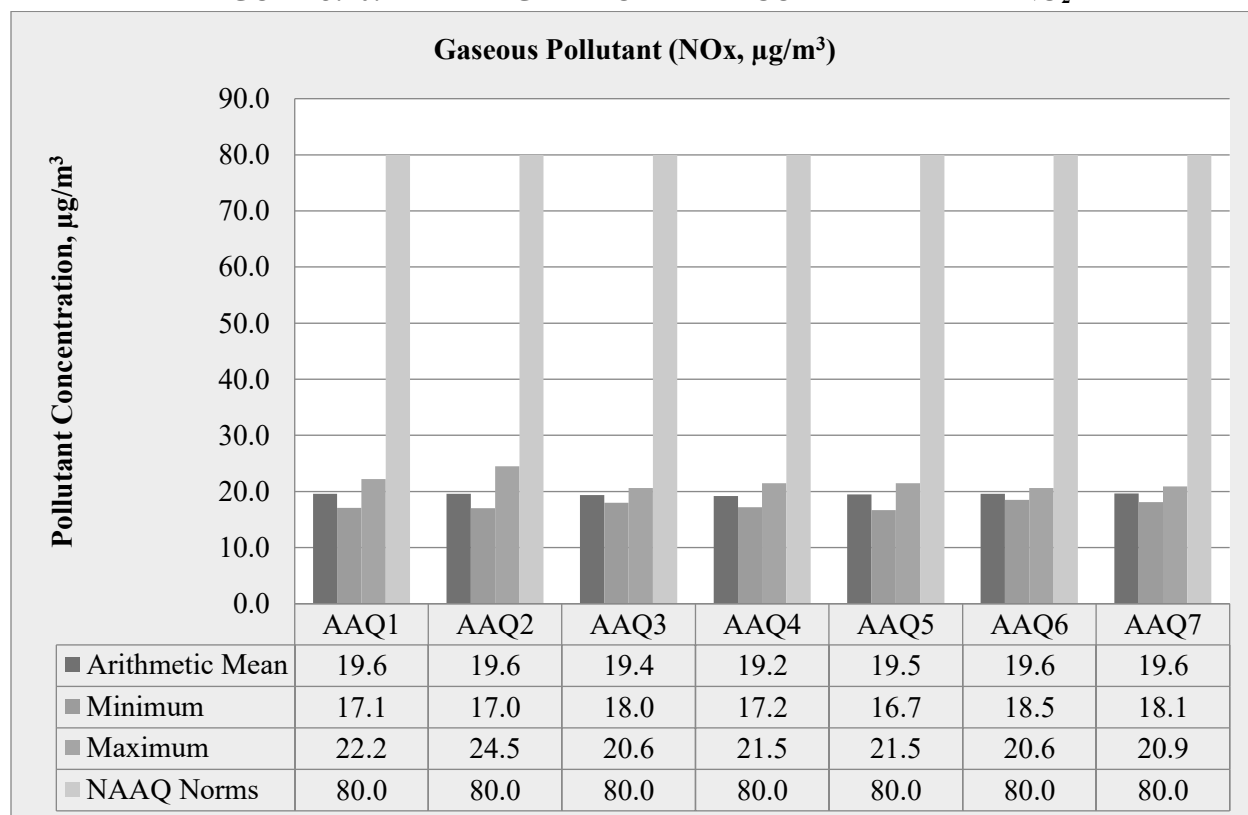
FIGURE 3.17: BAR DIAGRAM OF PARTICULATE MATTER PM_{2.5}**FIGURE 3.18: BAR DIAGRAM OF PARTICULATE MATTER PM₁₀**

FIGURE 3.19: BAR DIAGRAM OF PARTICULATE MATTER SO₂**FIGURE 3.20: BAR DIAGRAM OF PARTICULATE MATTER NO₂**

3.3.6 Interpretations & Conclusion

As per monitoring data, PM₁₀ ranges from 38.2 µg/m³ to 51.4 µg/m³, PM_{2.5} data ranges from 17.3 µg/m³ to 25.9 µg/m³, SO₂ ranges from 1.0 µg/m³ to 5.9 µg/m³ and NO₂ data ranges from 16.7 µg/m³ to 24.5 µg/m³. 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 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 3.19: DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	N1	Core Zone	Core Zone	10°48'27.97"N 76°54'23.95"E
2	N2	Core Zone	Core Zone	10°48'23.91"N 76°54'23.70"E
3	N3	Near Existing Quarry	400m SW	10°48'21.58"N 76°54'18.06"E
4	N4	Pichanur	3.8km NW	10°50'11.18"N 76°52'48.09"E
5	N5	Kanal Pudur	6km South	10°45'19.03"N 76°54'35.65"E
6	N6	Muthugoundanur	4.0km SE	10°47'25.66"N 76°56'19.62"E
7	N7	Kannamanayakkanur	4.3km NE	10°49'6.94"N 76°56'45.64"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

3.4.2 Method of Monitoring

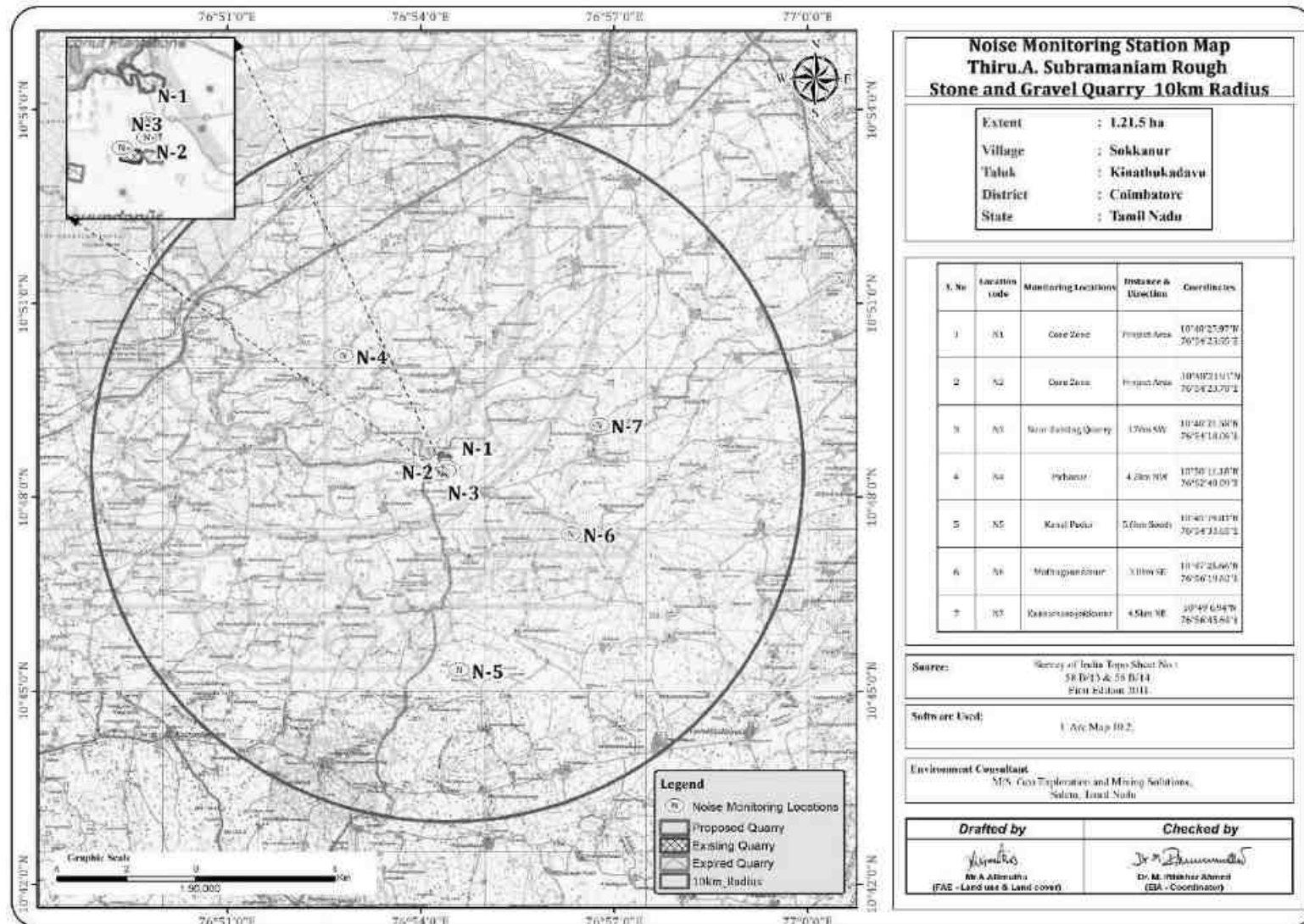
Digital Sound Level Meter was used for the study. All reading was taken on the 'A-Weighting' frequency network, at a height of 1.5 meters from ground level. The sound level meter does not give a steady and consistent reading and it is quite difficult to assess the actual sound level over the entire monitoring period. To mitigate this shortcoming, the Continuous Equivalent Sound level, indicated by Leq, is used. Equivalent sound level, 'Leq', can be obtained from variable sound pressure level, 'L', over a time period by using following equation. The equivalent noise level is defined mathematically as,

$$Leq = 10 \log L / T \sum (10L_n/10)$$

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 60 minutes are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing time varying noise levels.

FIGURE 3.21: 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 3.32.

Day time: 6:00 hours to 22.00 hours.

Night time: 22:00 hours to 6.00 hours.

TABLE 3.20: AMBIENT NOISE QUALITY RESULT

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	45.0	34.3	Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)
2	Core Zone	46.0	35.0	
3	Near Existing Quarry	46.8	35.2	Residential Day Time- 55 dB (A) Night Time- 45 dB (A)
4	Pichanur	47.4	35.1	
5	Kanal Pudur	46.3	34.5	
6	Muthugoundanur	47.6	36.8	
7	Kannamanayakkanur	46.0	35.1	

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

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

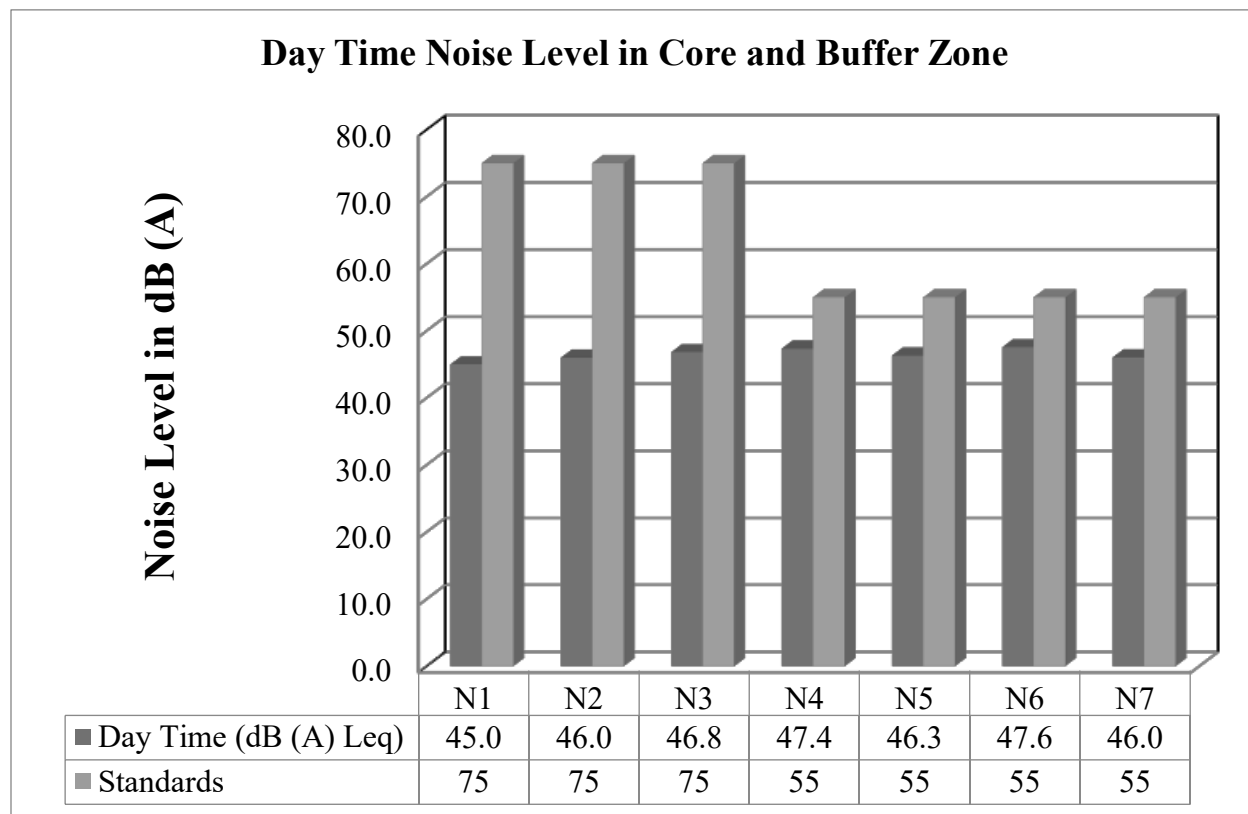
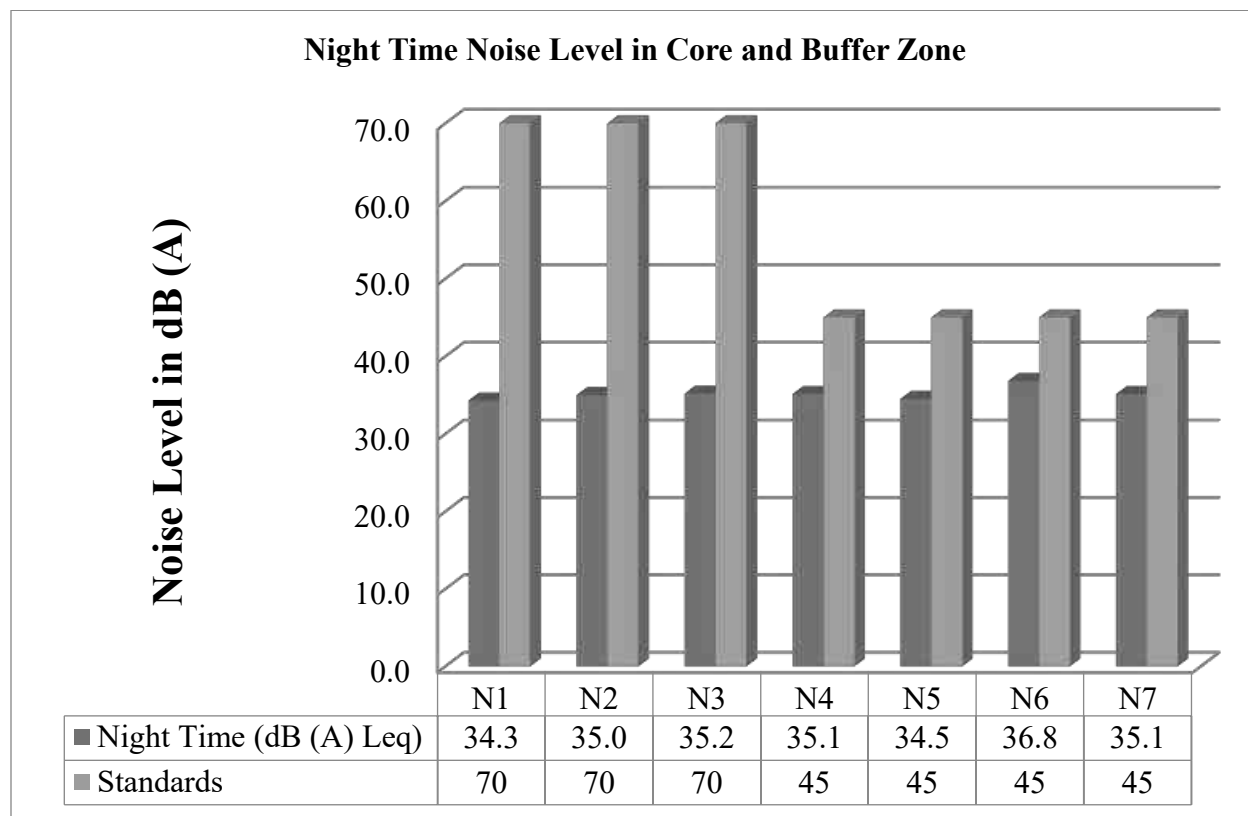


FIGURE 3.23: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE

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 45.0 – 46.0 dB (A) Leq and during night time 34.3 – 35.0 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 46.0 – 47.6 dB (A) Leq and during night time were from 35.1 – 36.8 dB (A) Leq.

Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 ECOLOGICAL ENVIRONMENT

Ecology is a branch of science which dealing the relations and interactions between organisms and their environment. An ecological survey of the study area was conducted, particularly with reference to listing of species and assessment of the existing baseline ecological conditions in the study area. The main objective of biological study is to collect the baseline data regarding flora and fauna in the study area. Data has been collected through extensive survey of the area with reference to flora and fauna. Information is also collected from different sources i.e. government departments such as District Forest Office, Government of Tamil Nadu. On the basis of onsite observations as well as forest department records the checklist of flora and fauna was prepared.

3.5.1 Scope of Work

Scope of work for this study includes identification of ecologically sensitive receptors, based on literature survey, field investigations and their mitigation with conservation action plan. The study was carried out in the core as well as buffer zone of the Proposed Rough stone and gravel quarry. The study was carried out systematically and scientifically using primary and secondary data in order to bring out factual information on the ecological conditions of the mine site and 10 km radius study area.

The study involved assessment of general habitat type, vegetation pattern, preparation of inventory of flora and fauna of terrestrial ecosystem within 10 km radius from the boundary of Proposed Mine site. Biological assessment of the site was done to identify ecologically sensitive areas and whether there are any rare, endangered, endemic or threatened (REET) species of flora & fauna in the core area as well its buffer zone to be impacted. The

study also designed to suggest suitable mitigation measures if necessary for protection of wildlife habitats and conservation of REET species if any.

3.5.2.Study area Ecology

The core area extent of 1.21.5Ha of Rough stone and Gravel quarry has an impact on the diversity of flora and fauna of the surrounding area. But present work was carried out on the detailed study of the impacts of the Rough stone and Gravel quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed area applied area exhibits undulated topography. The following methods were applied during the baseline study of flora, fauna, and diversity assessment.

3.5.3 Objectives of Biological Studies

The present study was undertaken with the following objectives:

- To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measures, if required, for vulnerable biota.
- Undertake intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
- Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972 & Schedule Category is listed as per the Wildlife (Protection) Amendment Act 2022.
- Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area.
- To identify the impacts of mining on agricultural lands and how it affects.
- Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
- Devise management & conservation measures for biodiversity.

3.5.4 Methodology of Sampling

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

The faunal elements (animal species) of core and buffer zone were identified by direct sightings or indirect evidences viz. pug marks, skeletal remains, scats and droppings etc. (Jayson and Easa 2004). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local inhabitants. The status of each faunal element was determined and the Wildlife schedule category was ascertained as per the IUCN-Red Data Book and Indian wildlife (Protection) Amendment Act, 2022.

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

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordinates. Presence of mammals was recorded by direct and indirect signs. All possible transects were taken for birds and butterflies. Birds and butterflies

were classified into species level. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

Sampling

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

Sampling Size

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

Timing of Study

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

Observations from Sampling

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

Equipment/ References

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

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

Part I Field Sampling Techniques

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.

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.

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).

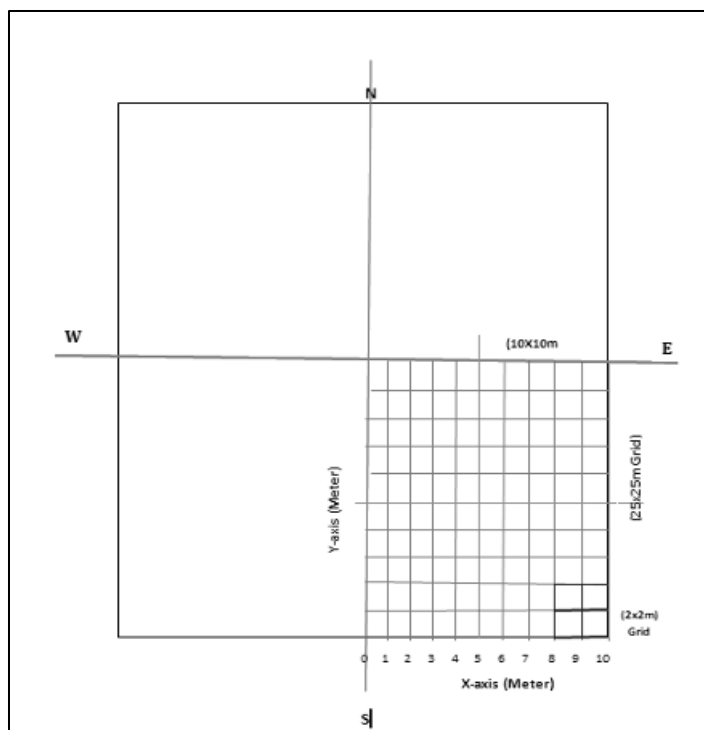
Observational methods- Mammals

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.

Multiple Stage Quadrat – Vegetation

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

FIGURE 3.24: A SCHEMATIC DIAGRAM FOR FLORAL RANDOM SAMPLING



Phyto-sociological Survey method

Phyto-sociological parameters, viz., Abundance, Density, Frequency (%) were measured. A total of 10 quadrats were laid down randomly within core area and 40 quadrats were laid down within four quartiles randomly (10/quartile) in buffer area. In core area 10 quadrats were laid randomly to enumerated trees, shrubs, and herbs as per the Following formulae used for calculating the frequency (%), abundance and density of the floral species encountered in the 10 quadrats studied.

Quadrats method

Quadrats of 20 × 20-m were laid down randomly within core and 5-km buffer area; each quadrat was laid to assess the trees (>5 cm GBH) and one, 10 × 10-m sub-quadrat nested within the quadrat for shrubs. The quadrats were laid randomly to cover the area to maximize the sampling efforts and minimize the species homogeneity, such as small stream area, trees in agricultural bunds, tank bunds, farm forestry plantations, wildlife areas, natural forest area, avenue plantations, house backyards, etc. In each quadrat individuals belonging to tree (20×20-m) and shrub (10 × 10-m) were recorded separately and have been identified on the field.

FLORA

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

Flora in the Core zone of Sokkanur village, Kinathukadavu Taluk, Coimbatore District Rough Stone and gravel quarry

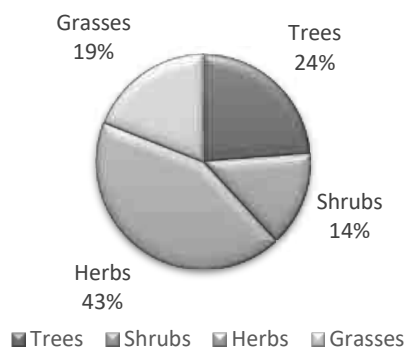
Sl.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Drumstick tree	Murungai Maram	<i>Moringa oleifera</i>	Moringaceae
2.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
3.	Indian mulberry	Nuna maram	<i>Morinda tinctoria</i>	Rubiaceae
4.	Neem or Indian lilac	Vembu maram	<i>Azadirachta indica</i>	Meliaceae
5.	Pongam oiltree	Punga maram	<i>Pongamia pinnata</i>	Fabaceae
Shrubs				
1.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
2.	Devil's trumpet	Umathai	<i>Datura metel</i>	Solanaceae
3.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
Herbs				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Fish poison	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
3.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
4.	Devil's thorn	Nerunji	<i>Tribulus terrestris</i>	Zygophyllales
5.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
6.	Malabar catmint	Pie Viratti	<i>Anisomeles malabarica</i>	Lamiaceae
7.	Indian Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae
8.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
9.	Oval leafed Alysicarpus	moneyworts	<i>Alysicarpus ovalifolius</i>	Fabaceae
Grasses				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
3.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
4.	Nut grass	Korrai pull	<i>Cyperus rotundus</i>	Cyperaceae

FLORA IN CORE ZONE

Taxonomically a total of 21 species belonging to 13 families have been recorded from the core mining lease area. The proposed area applied area exhibits undulated topography. This land is fit for vegetation and cultivation. Based on the habitat classification of the enumerated plants the majority of species were Herbs 9 followed by Shrubs 3, Trees 5, and Grasses 4. Details of flora with the scientific name were mentioned in Table

No. 3.1. The result of the core zone of flora studies shows that Fabaceae and Poaceae are the main dominating species in the study area mentioned in Table No.3.1 No species found as threatened category.

Fig No. 3.35. Graph Showing % Distribution Of Floral Life Forms (Core Zone)



Azadirachta indica



Calotropis gigantea



Moringa oleifera



Morinda coreia

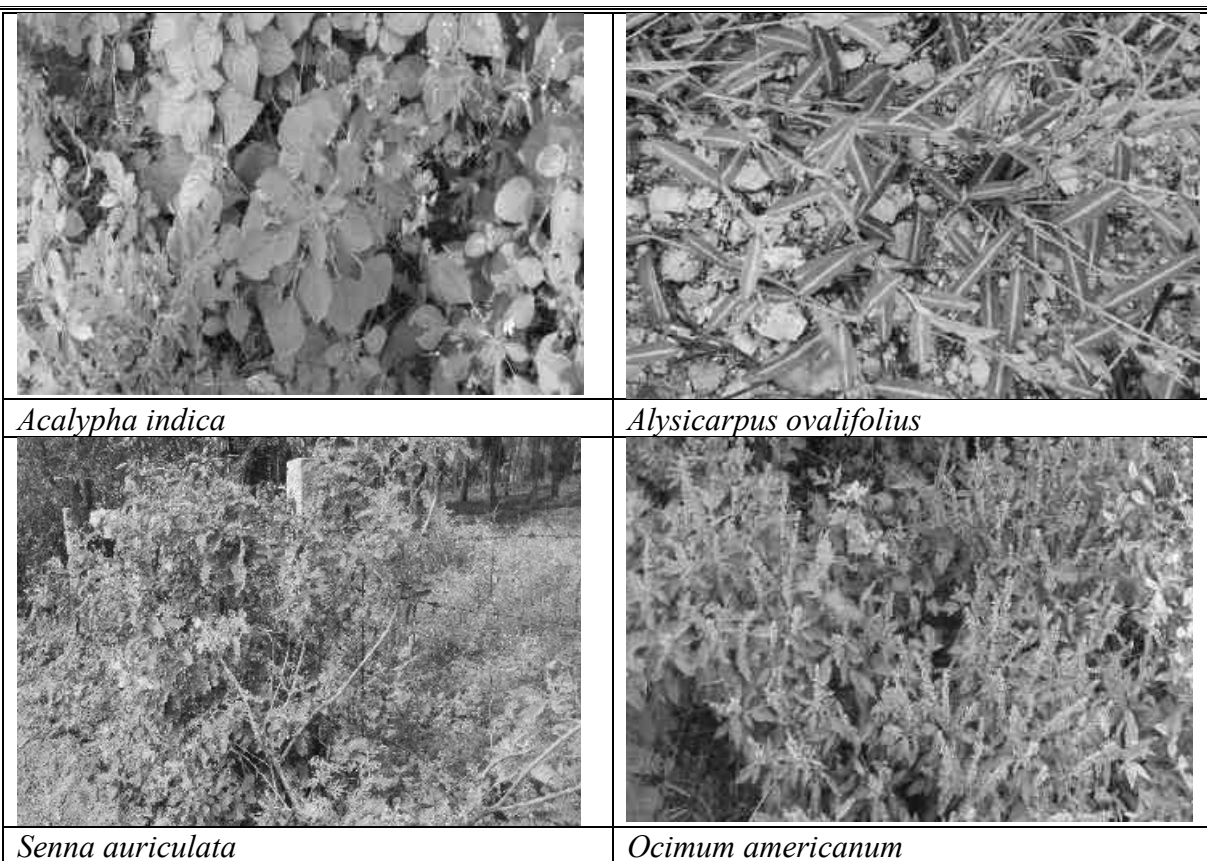


Fig No: 3.1. Flora species observation in the core zone area

Flora in Buffer Zone of Sokkanur village, Kinathukadavu Taluk, Coimbatore District Rough Stone and gravel quarry

SI.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae
3.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
4.	Wild Tamarind	Savundal	<i>Leucaena latisilqua</i>	Mimosaceae
5.	Neem or Indian lilac	Vembu	<i>Azadirachta indica</i>	Meliaceae
6.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
7.	Rain Tree	Mazlhimaram	<i>Samanea saman</i>	Mimosaceae
8.	River tamarind	Soundal maram	<i>Leucaena leucocephala</i>	Fabaceae
9.	Indian siris	Eayal vaagai	<i>Albizia lebbeck</i>	Mimosaceae
10.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	Fabaceae
11.	Indian-almond	Inguti	<i>Terminalia catappa</i>	Combretaceae
12.	Portia tree	Poovarasan	<i>Thespesia Populnea</i>	Malvaceae
13.	Jack fruit	Pala maram	<i>Artocarpusintegrifolia</i>	Moraceae
14.	Bitter Albizia	Unja, Usilai	<i>Albizia amara</i>	Mimosaceae
15.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
16.	Yellow Flame	Manjal kondrai	<i>Peltophorum pterocarpum</i>	Caesalpiniaceae
17.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae
18.	Cutch tree	Karangali	<i>Acacia chundra</i>	Mimosaceae
19.	Gum arabic tree	Karovelam	<i>Vachellia nilotica</i>	Fabaceae
20.	Yellow oleander	Ponarali	<i>Cascabela thevetia</i>	Apocynaceae
21.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae
22.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
23.	Umbrella thorn	Umbrella thorn	<i>Acacia planifrons</i>	Mimosaceae
24.	Golden shower tree	Sarakonnai	<i>Cassia fistula</i>	Caesalpiniaceae
25.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
26.	Curry tree Plant	Karuveppilai	<i>Murraya koenigii</i>	Rutaceae
27.	Jamun Fruit Plant	Naval maram	<i>Syzygium cumini</i>	Myrtaceae
28.	Indian mulberry	Nuna maram	<i>Morinda tinctoria</i>	Rubiaceae
29.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	Moringaceae
30.	Madras thorn	Kudukapuli	<i>Pithecellobium dulce</i>	Fabaceae
31.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes

32.	Eucalyptus	Thailam maram	<i>Eucalyptus tereticornis</i>	Myrtaceae
33.	Amati	Agathi keerai	<i>Sesbania grandiflora</i>	Fabaceae
34.	Horsetail She-oak	Savukku maram	<i>Casuarina equisetifolia</i>	Casuarinaceae
35.	Henna	Marudaani	<i>Lawsonia inermis</i>	Lythraceae
36.	Indian gooseberry	Nelli	<i>Phyllanthus emblica</i>	Phyllanthaceae
37.	Peepal	Asoka maram	<i>Ficus religiosa</i>	Legumes
38.	Java olive tree	Kutiraippitukku	<i>Sterculia foetida</i>	Malvaceae
39.	Rosewood	Eeti, Thodagathi, Tawadi	<i>Dalbergia latifolia</i>	Fabaceae
40.	Butter Tree	Kattu illupai	<i>Madhuca indica</i>	Sapotaceae
41.	Conkerberry	Sirukilaa	<i>Carissa spinarum</i>	Apocynaceae
42.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae
43.	Sacred fig	Arasa maram	<i>Ficus religiosa</i>	Moraceae
44.	Jujube Trees	Elantha Pazham	<i>Ziziphus Mauritiana</i>	Rhamnaceae
45.	Papaya	Pappali maram	<i>Carica papaya L</i>	Caricaceae
46.	Ceylon satinwood	Purush, Porasu	<i>Chloroxylon swietenia</i>	Rutaceae
47.	Banana tree	Vazhaimaram	<i>Musa acuminata</i>	Musaceae
48.	Indian-almond	Badam	<i>Terminalia catappa</i>	Combretaceae
49.	Custard apple	Seethapazham	<i>Annona reticulata</i>	Annonaceae
50.	Manilkara zapota	Sapotas	<i>Manilkara zapota</i>	Sapotaceae
51.	Pongamia pinnata	Pungam	<i>Millettia pinnata</i>	Fabaceae
52.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae
Shrubs				
1.	Kangkong	Sarkaraivalli	<i>Ipomeae aquatica</i>	Convolvulaceae
2.	Devil's trumpet	Umathai	<i>Datura metel</i>	Solanaceae
3.	Senna Coffee	Payaveri	<i>Cassia occidentalis</i>	Caesalpiniaceae
4.	Green amaranth	Kuppaikeerai	<i>Amaranthus vividis</i>	Amaranthaceae
5.	Water-hyacinth	Agayathamara	<i>Eichhornia crassipes</i>	Pontederiaceae
6.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
7.	Castor bean	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae
8.	Devil's claw	Thael kodukkukai	<i>Martynia annua</i>	Pedaliaceae
9.	Jungle geranium	Idly Poo	<i>Ixora coccinea</i>	Rubiaceae
10.	Birch-Leaved Cat Tail	Aathaathazhai	<i>Acalypha fruticosa</i>	Euphorbiaceae
11.	Horn of Plenty	Karu Umathai	<i>Datura metel</i>	Solanaceae
12.	Asian Bushbeech	Sirukumalaan	<i>Gmelina asiatica</i>	Verbenaceae
13.	Shoe flower	Chemparuthi	<i>Hibiscus rosa-sinensis</i>	Malvaceae

14.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
15.	Wild jasmine	Kattumalli	<i>Jasminum trichotomum</i>	Oleaceae
16.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
17.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
18.	Mexican prickly poppy	Bramathndu	<i>Argemone mexicana</i>	Papaveraceae
19.	Clustered Morning Glory	Onan kodi	<i>Ipomoea staphylina</i>	Convolvulaceae
20.	Cypress vine	Mayil maanikam	<i>Ipomoea quamoclit</i>	Convolvulaceae
21.	Indian Balm of Gilead	Mulkilluvai	<i>Commiphora berryi</i>	Burseraceae
22.	Malabar catmint	Pei veratti	<i>Anisomeles malabarica</i>	Lamiaceae
23.	Dwarf Heliotrope	Theelkodu	<i>Heliotropium supinum</i>	Boraginaceae
24.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
25.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
26.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
27.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
28.	Rosary pea	Kundumani	<i>Abrus precatorius</i>	Fabaceae
29.	Rough cocklebur	Marlumuttu	<i>Xanthium indicum</i>	Asteraceae
Herbs				
1.	Indian Mercury	Kuppamani	<i>Acalypha indica</i>	Euphorbiaceae
2.	Sessile Joyweed	Ponnankanni	<i>Alternanthera sessilis</i>	Amaranthaceae
3.	Billygoat weed	Pumpillu	<i>Ageratum conyzoides</i>	Asteraceae
4.	Aloe barbadensis	Katrashai	<i>Aloe vera</i>	Asphodelaceae
5.	Madagascar Periwinkle	Nithyakalyani	<i>Catharanthus roseus</i>	Apocynaceae
6.	Spiny amaranth	Mullu keera	<i>Amaranthus spinosus</i>	Amaranthaceae
7.	Indian nettle	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae
8.	Mexican prickly poppy	Mullu umathai	<i>Argemone mexicana</i>	Papaveraceae
9.	Spreading hogweed	Mookkaratti	<i>Boerhavia diffusa</i>	Nyctaginaceae
10.	Bui	Ciru-pulai	<i>Aerva lanata</i>	Amaranthaceae
11.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
12.	Carry me seed	Kizhar nelli	<i>Phyllanthus amarus</i>	Phyllanthaceae
13.	Malabar spinach	Pasalaikeera, Paasaangalli	<i>Basella alba</i>	Basellaceae
14.	Yellow elder	Manjarali	<i>Tecoma stans</i>	Apocynaceae
15.	Dwarf morning-glory	Vishnu kiranthi	<i>Evolvulus alsinoides</i>	Convolvulaceae
16.	Datura metel	Oomathai	<i>Datura metel</i>	Solanaceae
17.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
18.	Black-jack	Mukkuthi Asteraceae	<i>Bidens pilosa</i>	Aizoaceae

19.	Red Hogweed	Mukurattai	<i>Boerhavia diffusa</i>	Nyctaginaceae
20.	Green amaranth	Kuppai keerai	<i>Amaranthus viridis</i>	Amaranthaceae
21.	Obscure Morning Glory	Siruthaali	<i>Ipomoea obscura</i>	Convolvulaceae
22.	Cleome viscosa	Nai kadugu	<i>Cleome viscosa</i>	Capparidaceae
23.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
24.	Century plant	Agave	<i>Agave americana</i>	Agavaceae
25.	Fish poison	Kolunchi	<i>Tephrosia purpurea</i>	Papilionaceae
26.	Elephant Climber	Kanvali poo	<i>Argyreia cuneata</i>	Convolvulaceae
27.	Porcupine flower	Shemmuli	<i>Barleria prionitis</i>	Acanthaceae
28.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
29.	Eggplant	Kathirikai	<i>Solanum melongena</i>	Solanaceae
30.	European black nightshade	Manathakkali	<i>Solanum nigrum</i>	Solanaceae
31.	Tridax daisy	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
32.	Gale of the wind	Keelaneeli	<i>Phyllanthus niruri</i>	Phyllanthaceae
33.	Malabar catmint	Peymarutti	<i>Anisomeles malabarica</i>	Lamiaceae
Climber/ Creeper				
1.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae
2.	Cucumis maderaspatanus	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae
3.	Rosary Pea	Gundumani	<i>Abrus precatorius</i>	Fabaceae
4.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
5.	Pointed gourd	Kovakkai	<i>Trichosanthes dioica</i>	Cucurbitaceae
6.	Wild water lemon	Siruponaikaali	<i>Passiflora foetida</i>	Passifloraceae
7.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	Cucurbitaceae
8.	Butterfly pea	Sangu poo	<i>Clitoria ternatea</i>	Fabaceae
9.	Shatavari	Thaneervittaan	<i>Asparagus racemosus</i>	Liliaceae
10.	Indian atalantia	Kattu naarangam,	<i>Atalantia monophylla</i>	Rutaceae
11.	Wild bitter	Pavarkai	<i>Momordica charantia</i>	Cucurbitaceae
Grass				
1.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
2.	Giant reed	Elephant grass	<i>Arundo donax</i>	Poaceae
3.	Buffel grass	Erumaipul	<i>Cenchrus ciliaris</i>	Poaceae
4.	Native millet	Umbrella grass	<i>Panicum decompositum</i>	Poaceae
5.	Swollen windmill grass	Kuruthu-pillu	<i>Chloris barbata</i>	Poaceae
6.	Nut grass	Korai	<i>Cyperus rotundus</i>	Poaceae
7.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae

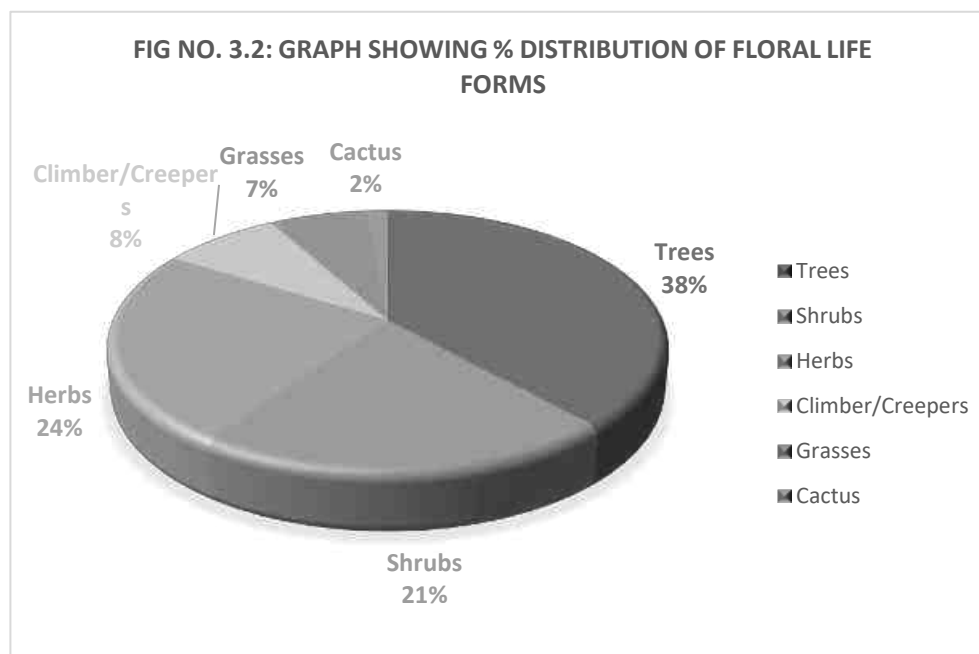
8.	Windmill grass	Chevvarakupul	<i>Chloris truncata</i>	Poaceae
9.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
Cactus				
1.	Prickly pear	Sappathikalli	<i>Opuntia dillenii</i>	Cactaceae
2.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae

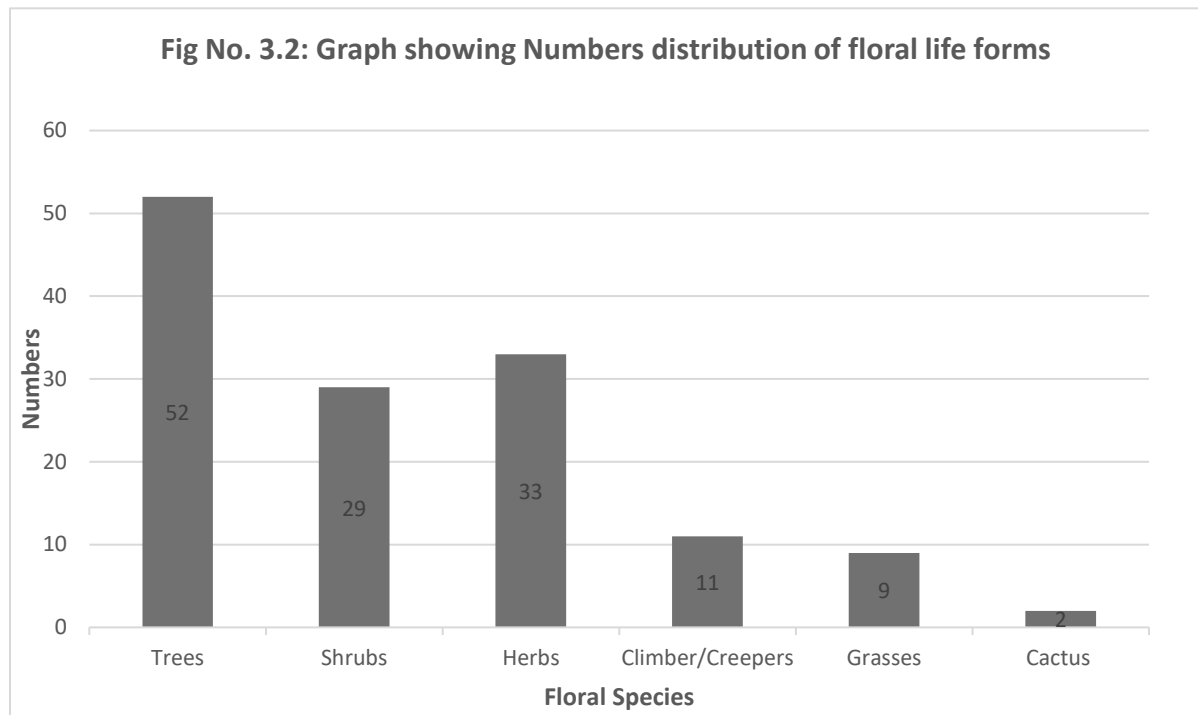
FLORA IN BUFFER ZONE

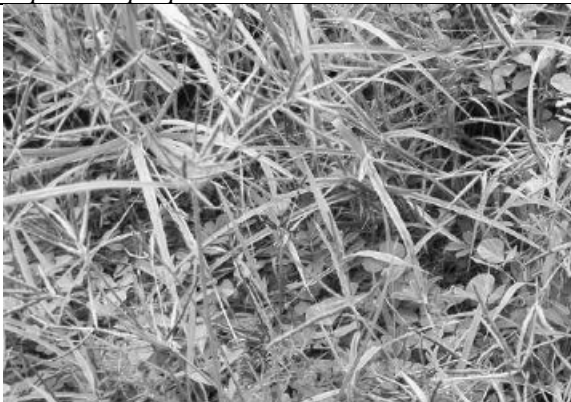
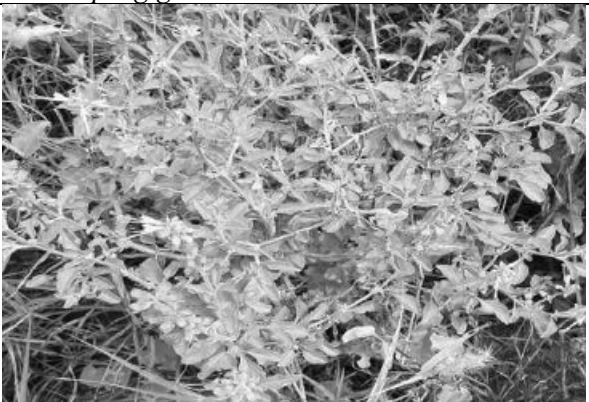
Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The buffer zone study area contains a total of 136 species that have been recorded from the buffer zone. The floral (136) varieties of them Trees 52, herbs 33, shrubs 29, Climbers 11, Grasses 9, and Cactus 2 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Poaceae, Mimosaceae is the main dominating species in the study area mentioned in Table No.3.2. 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 a primary survey (site observations) and discussion with local people (Secondary data). The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.3 and their % distribution is shown in Figure 3.2.

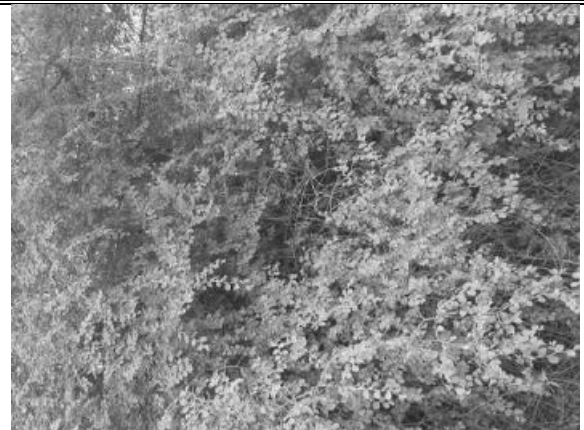
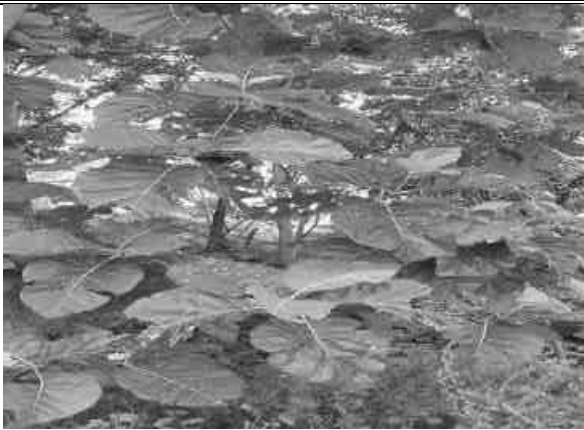
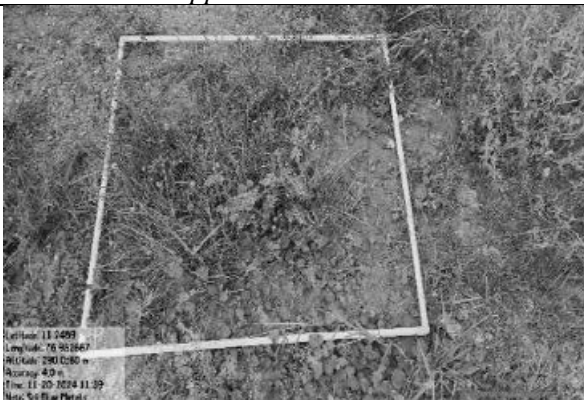
Number of floral life forms in the Study Area

S. No	Plant Life Form	Number of Species
1	Trees	52
2	Shrubs	29
3	Herbs	33
4	Climber	11
6	Grass	9
7	Cactus	2
Total No. of Species		136



*Opuntia dillenii**Prosopis juliflora**Abutilon indicum**Clitoria ternatea*

	
<i>Leucas aspera</i>	<i>Cenchrus ciliaris</i>
	
<i>Tephrosia purpureae</i>	<i>Calotropis gigantea</i>
	
<i>Cyperus rotundus</i>	<i>Ocimum tenuiflorum</i>
	
<i>Azadirachta indica</i>	<i>Jatropha curcas</i>

	
<i>Ziziphus Mauritiana</i>	<i>Tectona grandis</i>
	
<i>Musa acuminata</i>	<i>Terminalia catappa</i>
	
<i>Muntingia calabura</i>	Quadrat method
	

<i>Pithecellobium dulce</i>	<i>Borassus flabellifer</i>
	
<i>Cassia fistula</i>	<i>Catharanthus roseus</i>
	
<i>Lantana camara</i>	<i>Passiflora foetida</i>
	
<i>Leucaena latisiliqua</i>	<i>Cocos Nucifera</i>

	
<i>Thespesia populnea</i>	<i>Parthenium hysterophorus</i>
	
<i>Sida acuta</i>	<i>Tamarindus indica</i>
	
<i>Canthium coromandelicum</i>	<i>Chromolaena odorata</i>

Flora species observation in the Buffer zone area

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

Bolampatti R.F., is located 8 km on North western side of the area. There are no protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no 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.

Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no impacts due to this mining activity. There are 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.

FAUNA

The faunal survey has been carried out as per the methodology cited and listed out Mammals, birds, Reptiles, Amphibians, and Butterflies. All the listed species were compared with Red Data Book and Indian Wildlife Protection Act, 1972 / Indian Wildlife Protection Amendment Act, 2022 . There are no rare, endangered, threatened (RET), and endemic species present in the core area.

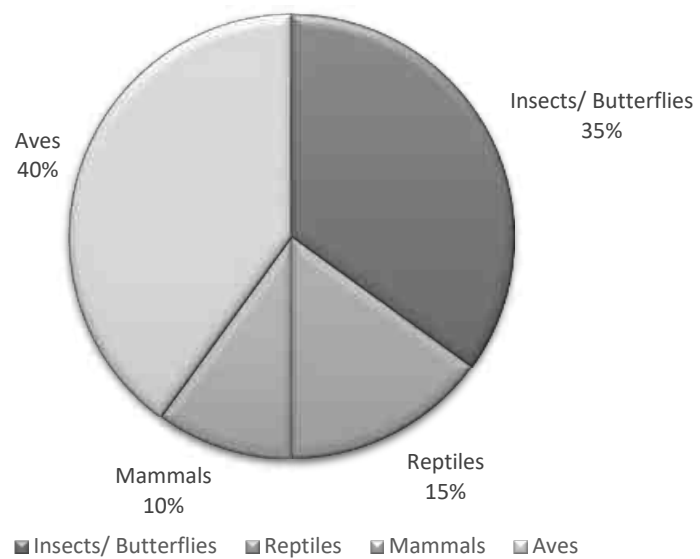
FAUNA IN CORE ZONE

Core Zone: During the study, it was found that the faunal diversity in the core site was limited to Butterflies, insects, and some species of mammals & reptiles among them numbers Insects / Butterflies 7, Reptiles 3, Mammals 2, and Avian 8. The core site has avifauna species like crow, Black drongo, Koel, etc. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and 8 species are under Schedule II species remaining species not listed according to the Indian Wildlife Protection Amendment Act 2022. There are no critically endangered, endangered, vulnerable, and endemic species were observed..

TABLE 3.21: FAUNA IN CORE ZONE

Sl. No	Common Name	Scientific Name	Schedule list WLPC, Amendment Act, 2022
Insects/Butterflies			
1.	Common Tiger	<i>Danaus genutia</i>	---
2.	Common rose	<i>Pachliopta aristolochiae</i>	---
3.	Danaid Eggfly	<i>Hypolimnas misippus</i>	Schedule II
4.	Grasshopper	<i>Hieroglyphus sp</i>	----
5.	Dragonfly	<i>Ceratogomphus pictus</i>	---
6.	Common Crow	<i>Euploea core</i>	---
7.	Ant	<i>Camponotus Vicinus</i>	---
Reptiles			
1.	Oriental garden lizard	<i>Calotes versicolor</i>	---
2.	Indian forest skink	<i>Sphenomorphus indicus</i>	---
3.	House lizards	<i>Hemidactylus flaviviridis</i>	---
Mammals			
1.	Indian palm squirrel	<i>Funambulus palmarum</i>	---
2.	Indian Field Mouse	<i>Mus booduga</i>	---
Aves			
1.	Rose-ringed parakeet	<i>Psittacula krameri</i>	Schedule II
2.	Common myna	<i>Acridotheres tristis</i>	Schedule II
3.	House sparrow	<i>Passer domesticus</i>	Schedule II
4.	Indian robin	<i>Copsychus fulicatus</i>	Schedule II
5.	Green Bee Eater	<i>Merops orientalis</i>	Schedule II
6.	Asian Koel	<i>Eudynamys scolopaceus</i>	Schedule II
7.	Black drongo	<i>Dicrurus macrocercus</i>	Schedule II
8.	House crow	<i>Corvus splendens</i>	---

Fig No:3.4. Distribution Of Faunal Communities (Core Zone)



FAUNA IN BUFFER ZONE

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

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

The list of bird species recorded during the field survey and literature from the study area are given in Table 3.6. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.7. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.9. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.8. 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 78 species recorded were from the buffer zone area. Based on habitat classification the majority of species were Insects 5, followed by birds 32, Reptiles 8, Mammals 4, Amphibians 5, and Butterflies 24. There are 34 Schedule II species, according to the Indian Wildlife Protection Amendment Act 2022. A total of 32 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. There is no Schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

List of Fauna & Their Conservation Status, Mammals:

Sl. No	Common Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Brown rat	<i>Rattus norvegicus</i>	---
2.	Indian palm squirrel	<i>Funambulus palmarum</i>	---
3.	Indian hare	<i>Lepus nigricollis</i>	Schedule II
4.	Indian Field Mouse	<i>Mus booduga</i>	---

Listed birds (Primary & Secondary data)

Sl. No	Common Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2002
1.	Rose-ringed Parakeet	<i>Psittaculakrameria</i>	Schedule II
2.	Common myna	<i>Acridothores tristis</i>	Schedule II
3.	Tawny pipit	<i>Anthus campestris</i>	Schedule II
4.	Cattle egret	<i>Bubulcus ibis</i>	Schedule II
5.	Indian roller	<i>Coracias benghalensis</i>	Schedule II
6.	Black-crowned night heron	<i>Ncticorax ncticorax</i>	Schedule II
7.	Greater Coucal	<i>Centropus sinensis</i>	Schedule II
8.	Purple sunbird	<i>Cinnyris asiaticus</i>	Schedule II
9.	Yellow browed Bulbul	<i>Acritillas indica</i>	Schedule II
10.	Black-rumped Flameback	<i>Dinopium benghalense</i>	Schedule II
11.	Tree Pipit	<i>Anthus trivialis</i>	Schedule II
12.	Yellow wagtail	<i>Motacilla flava</i>	Schedule II
13.	Spotted owlet	<i>Athene brama</i>	Schedule II
14.	House Sparrow	<i>Passer domesticus</i>	Schedule II
15.	Common HawkCuckoo	<i>Hieroccyx varius</i>	Schedule II
16.	Brown Shrike	<i>Lanius cristatus</i>	Schedule II
17.	Spotted dove	<i>Streptopelia chinensis</i>	Schedule II
18.	Square tailed Black Bulbul	<i>Hypsipetes ganeesa</i>	Schedule II
19.	Asian koel	<i>Eudynamys scolopacea</i>	Schedule II
20.	Common kingfisher	<i>Alcedo atthis</i>	Schedule II
21.	White-thorated kingfisher	<i>Halcyon smyrnensis</i>	Schedule II
22.	Ashy Drongo	<i>Dicrurus leucophaeus</i>	Schedule II
23.	Blue-rock pigeon	<i>Colomba livia</i>	---
24.	House crow	<i>Corvus splendens</i>	---
25.	Large-billed Crow	<i>Corvus macrorhynchos</i>	Schedule II
26.	Black Drongo	<i>Dicrurus macrocercus</i>	Schedule II
27.	Ashy Prinia	<i>Prinia socialis</i>	Schedule II
28.	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Schedule II
29.	Yellow-billed Babbler	<i>Argya affinis</i>	Schedule II
30.	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>	Schedule II
31.	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Schedule II
32.	Baya Weaver	<i>Ploceus philippinus</i>	Schedule II

List of Reptiles either spotted or reported from the study area

SI. No	Common Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Oriental garden lizard	<i>Calotes versicolor</i>	---
2.	Common krait	<i>Bungarus caeruleus</i>	---
3.	House lizards	<i>Hemidactylus flaviviridis</i>	---
4.	Green vine snake	<i>Ahaetulla nasuta</i>	---
5.	Russell's viper	<i>Vipera russelli</i>	---
6.	Common skink	<i>Mabuya carinatus</i>	---
7.	Bornze Grass Skink	<i>Eutropis macularia</i>	---
8.	Keeled / Common Grass Skink	<i>Eutropis carinata</i>	---

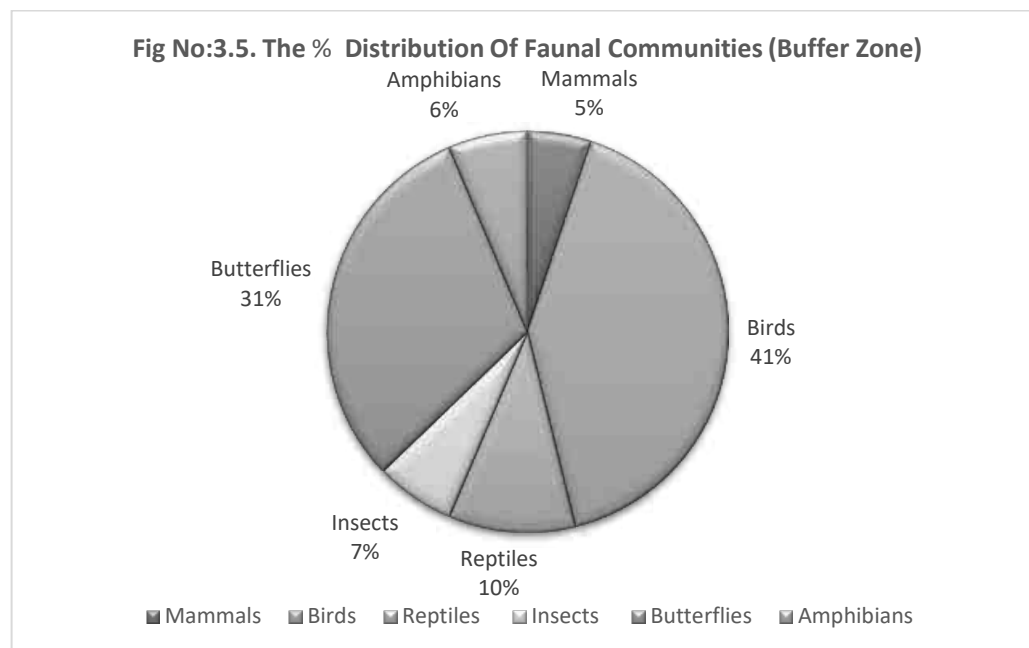
List of Butterflies reported from the study area and Secondary data

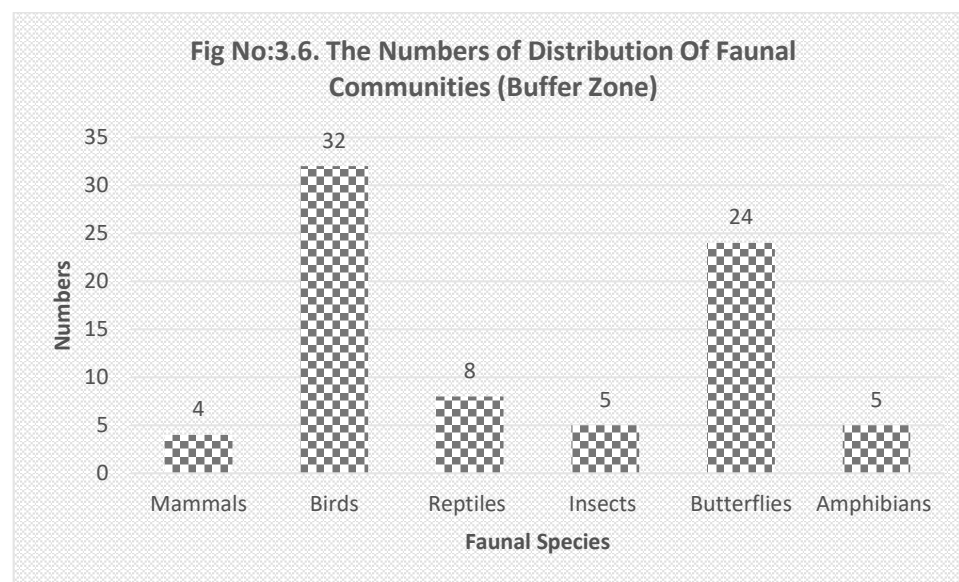
SI. No	Common Name	Scientific Name	Schedule
1.	Indian palm bob	<i>Suastus gremius</i>	---
2.	Common Mormon	<i>Papilio polytes</i>	---
3.	Lemon Pansy	<i>Junonia lemonias</i>	---
4.	Common Crow	<i>Euploea core</i>	---
5.	Common rose	<i>Pachliopta aristolochiae</i>	---
6.	Spotless grass yellow	<i>Eurema laeta</i>	---
7.	Common Evening Brown	<i>Melanitis leda</i>	---
8.	Peacock Royal	<i>Tajuria cippus</i>	Schedule II
9.	Common Tiger	<i>Danaus genutia</i>	---
10.	Lime Butterfly	<i>Papilio demoleus</i>	---
11.	Blue Mormon	<i>Papilio polymnestor</i>	---
12.	Danaid Eggfly	<i>Hypolimnas misippus</i>	Schedule II
13.	Great Eggfly	<i>Hypolimnas bolina</i>	---
14.	Common emigrant	<i>Catopsilia pomona</i>	---

15.	Tiny Grass Blue	<i>Zizula hylax</i>	---
16.	Blue Tiger	<i>Tirumala limniace</i>	---
17.	Crimson tip	<i>Colotisdanae</i>	---
18.	Common Indian crow	<i>Euploea core</i>	---
19.	Yellow Pansy	<i>Junonia hierta</i>	---
20.	Chocolate Pansy	<i>Junonia iphita</i>	---
21.	Peacock Pansy	<i>Junonia almana</i>	---
22.	Plain Tiger Butterfly	<i>Danaus chrysippus</i>	---
23.	Pale Grass Blue	<i>Pseudozizeeria maha</i>	---
24.	Common Mime	<i>Papilio clytia</i>	Schedule II

List of insects either spotted or reported from the study area

Sl. No	Common Name	Scientific Name	Schedule list WLPAA 2022
1.	Indian honey bee	<i>Apis cerana</i>	---
2.	Termite	<i>Hamitermes silvestri</i>	---
3.	Grasshopper	<i>Hieroglyphus daganensis</i>	---
4.	Ant	<i>Camponotus Vicinus</i>	---
5.	Dragonfly	<i>Ceratogomphus pictus</i>	---





Aquatic Ecology

The study area has canal is situated 3km (SE) away from the proposed project site. But no major drainage system can be found within the study area. No Aquatic diversity is noticed in the core zone area. 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.

Objectives of Aquatic Studies

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

Macrophytes

The macrophytes observed within the study area are tabulated in Table 3.10.

Description of Macrophytes

S.No	Scientific Name	Common Name	Type
1.	<i>Eichhornia crassipes</i>	Common water hyacinth	Free floating hydrophytes
2.	<i>Typha angustifolia</i>	Lesser Bulrush	Emergent hydrophytes
3.	<i>Hydrilla verticillata</i>	Hydrilla	Submerged hydrophytes
4.	<i>Pistia stratiotes</i>	Water lettuce	Free floating hydrophytes
5.	<i>Cyperus articulatus</i>	Jointed flatsedge	Emergent Hydrophytes
6.	<i>Ipomea aquatica</i>	Water Morning Glory	Marshy amphibious hydrophytes

Aquatic Faunal Diversity

Amphibian species like the common Pond frog, Skipper frog, Indian Pond Frog etc., were sighted near the water bodies located in the study area.

Amphibians Observed/Recorded from the Study Area

Sl. No	Common Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Indian Burrowing frog	<i>Sphaerotheca breviceps</i>	---
2.	Indian pond frog	<i>Phrynoderma hexadactylum</i>	Schedule II
3.	Asian common Toad	<i>Duttaphrynus melanostictus</i>	---
4.	Indian bull Frog	<i>Hoplobatrachus tigerinu</i>	Schedule II
5.	Paddyfield / Cricket Frog	<i>Limnonectes limnocharis</i>	---

Findings/Results

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

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

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

Breeding and spawning grounds

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

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

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

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

Conclusion

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

3.6 SOCIO ECONOMIC ENVIRONMENT

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

3.6.1 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 of the proposed mining project.

- 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.

3.6.2 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

3.6.3 District Profile

Coimbatore district is divided into 12 taluks. The taluks are further divided into 18 blocks, which further divided into 860 villages. In 2011, Coimbatore had population of 2,464,875 of which male and female were 1,235,889 and 1,228,986 respectively. In 2001 census, Coimbatore had a population of 2,186,125 of which males were 1,095,859 and remaining 1,090,266 were females. Coimbatore District population constituted 3.42 percent of total Maharashtra population. In 2001 census, this figure for Coimbatore District was at 3.50 percent of Maharashtra population.

There was change of 12.75 percent in the population compared to population as per 2001. In the previous census of India 2001, Coimbatore District recorded increase of 7.01 percent to its population compared to 1991.

3.6.4 Study area:

SOKKANUR VILLAGE

Sokkanur is a large village located in Kinathukadavu Taluk of Coimbatore district, Tamil Nadu with total 1776 families residing. The Sokkanur village has population of 6020 of which 2978 are males while 3042 are females as per Population Census 2011.

In Sokkanur village population of children with age 0-6 is 464 which makes up 7.71 % of total population of village. Average Sex Ratio of Sokkanur village is 1021 which is higher than Tamil Nadu state average of 996. Child Sex Ratio for the Sokkanur as per census is 1128, higher than Tamil Nadu average of 943.

Sokkanur village has lower literacy rate compared to Tamil Nadu. In 2011, literacy rate of Sokkanur village was 65.28 % compared to 80.09 % of Tamil Nadu. In Sokkanur Male literacy stands at 74.86 % while female literacy rate was 55.83 %.

As per constitution of India and Panchyat Raaj Act, Sokkanur village is administrated by Sarpanch (Head of Village) who is elected representative of village. Our website, don't have information about schools and hospital in Sokkanur village.

TABLE 3.22: SOKKANUR VILLAGE POPULATION FACTS

Number of Households	1776
Population	6020
Children Population	464
Scheduled Tribes (ST)	339
Scheduled Caste (SC)	1166
Literacy	65.28%
Total Workers	3810
Main Worker	3654
Marginal Worker	156

Source: Sokkanur Village Population - Pollachi - Coimbatore, Tamil Nadu

DEMOGRAPHICS POPULATION OF VILLAGE SOKKANUR

Total Population	Male Population	Female Population
6020	2978	3042

Sex Ratio of Sokkanur Village -Census 2011

As per the Census Data 2011 there are 1021 Femals per 1000 males out of 6020 total population of village. There are 1128 girls per 1000 boys under 6 years of age in the village.

Literacy of Sokkanur Village

Out of total poplation total 3627 people in Sokkanur Village are literate, among them 2066 are male and 1561 are female in the village. Total literacy rate of of Sokkanur is 65.28%, for male literacy is 74.86% and for female literacy rate is 55.83%.

Worker's profile of Sokkanur Village

Total working population of Sokkanur is 3810 which are either main or marginal workers. Total workers in the village are 3810 out of which 2051 are male and 1759 are female. Total main workers are 3654 out of which female main workers are 2013 and male main workers are 1641. Total marginal workers of village are 156

TABLE 3.23: SOKKANUR VILLAGE CENSUS DATA

Description	Census 2011 Data
Village Name	Sokkanur
Teshil Name	Pollachi
District Name	Coimbatore
State Name	Tamil Nadu
Total Population	6020
Total Area	2309 (Hectares)
Total No of House Holds	1776
Total Male Population	2978
Total Female Population	3042
0-6 Age group Total Population	464
0-6 Age group Male Population	218
0-6 Age group Female Population	246
Total Person Literates	3627
Total Male Literates	2066
Total Female Literates	1561
Total Person Illiterates	2393
Total Male Illiterates	912
Total Female Illiterates	1481
Scheduled Caste Persons	1166
Scheduled Caste Males	584
Scheduled Caste Females	582
Scheduled Tribe Males	165
Scheduled Tribe Females	174

Source: <https://etrace.in/census/village/sokkanur-pollachi-district-coimbatore-tamil-nadu-644484/>

TABLE 3.24: SOKKANUR WORKING POPULATION

	Total	Male	Female
Total Workers	3810	2051	1759
Main Workers	3654	2013	1641
Main Workers Cultivators	925	531	394
Agriculture Labourer	1990	945	1045
Household Industries	46	22	24
Other Workers	693	515	178
Marginal Workers	156	38	118
Non Working Persons	2210	927	1283

Source: <https://etrace.in/census/village/sokkanur-pollachi-district-coimbatore-tamil-nadu-644484/>

TABLE 3.25: POPULATION DATA OF STUDY AREA

Sl.No.	Village Name	No of House Holds	Total Population	Male	Female	Total Literate Population	Male Literate	Female Literate	Total Illiterate Population	Male Illiterate	Female Illiterate
1	Arisippalayam	700	2400	1212	1188	1670	883	787	730	329	401
2	Govindapuram	335	1249	619	630	684	373	311	565	246	319
3	Karunchamigoundenpalayam	95	343	171	172	213	111	102	130	60	70
4	Kuthiraialampalayam	444	1448	685	763	887	483	404	561	202	359
5	Mavuthampathi	818	2843	1442	1401	1870	1057	813	973	385	588
6	Muthur	378	1385	683	702	897	508	389	488	175	313
7	Nachippalayam	878	3008	1517	1491	2019	1105	914	989	412	577
8	Palathurai	767	2727	1346	1381	1906	1033	873	821	313	508
9	Pichanur	1687	6261	3094	3167	4312	2333	1979	1949	761	1188
10	Poravipalayam	1874	6568	3280	3288	4130	2311	1819	2438	969	1469
11	Pottaiyandiporambu	445	1530	764	766	901	502	399	629	262	367
12	Sangarayapuram	255	816	416	400	604	338	266	212	78	134
13	Sokkanur	1776	6020	2978	3042	3627	2066	1561	2393	912	1481
14	Sulakkal	852	2869	1399	1470	1790	971	819	1079	428	651
15	Thambagoundenpalayam	133	482	234	248	374	193	181	108	41	67
16	Vadaputhur	1467	5176	2561	2615	3663	1985	1678	1513	576	937
17	Valukkupparai	1412	4891	2376	2515	3043	1670	1373	1848	706	1142

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

TABLE 3.26: WORKERS PROFILE OF STUDY AREA

Sl.No.	Village Name	Total Workers Population	Male Workers	Female Workers	Total Main Workers	Main Workers Male	Main Workers Female	Main Cultivation Workers	Main Agriculture Workers	Main Other Workers	Non-Worker Population
1	Arisippalayam	1126	771	355	974	702	272	117	281	561	1274
2	Govindapuram	768	412	356	768	412	356	369	232	151	481
3	Karunchamigoundenpalayam	182	113	69	152	109	43	57	2	93	161
4	Kuthiraialampalayam	896	473	423	806	441	365	172	437	185	552
5	Mavuthampathi	1603	942	661	1289	777	512	358	551	358	1240
6	Muthur	827	489	338	781	465	316	144	454	177	558
7	Nachippalayam	1803	1047	756	1598	934	664	458	479	642	1205
8	Palathurai	1403	894	509	768	557	211	93	85	579	1324
9	Pichanur	3214	1928	1286	3094	1868	1226	534	1288	1224	3047
10	Poravipalayam	4248	2355	1893	3377	2082	1295	524	1772	983	2320
11	Pottaiyandiporambu	889	518	371	498	321	177	150	106	241	641
12	Sangarayapuram	518	301	217	446	274	172	178	120	144	298
13	Sokkanur	3810	2051	1759	3654	2013	1641	925	1990	693	2210
14	Sulakkal	1724	1001	723	1674	986	688	223	795	624	1145
15	Thambagoundenpalayam	224	142	82	193	134	59	37	20	135	258
16	Vadaputhur	2670	1677	993	2479	1623	856	491	466	1487	2506
17	Valukkupparai	3055	1645	1410	2640	1429	1211	898	1135	570	1836

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

TABLE 3.27: COMMUNICATION & TRANSPORT FACILITIES IN THE STUDY AREA

Sl	Village Name	PO	SPO	PTO	T	PCO	MP	IC / CSC	PCF	BS	PBS	RS	NH	SH	MDR	BTR	GR	NWR	FP
1	Arisippalayam	2	1	2	1	2	1	2	2	1	1	2	2	1	2	1	1	2	1
2	Govindapuram	2	2	2	1	1	1	2	2	1	1	2	2	2	1	1	1	2	1
3	Karunchamigoundenpalayam	2	2	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
4	Kuthiraialampalayam	2	2	2	1	2	1	2	2	1	2	2	2	1	2	1	1	2	1
5	Mavuthampathi	2	1	2	1	1	1	2	2	1	2	2	1	1	1	1	1	2	1
6	Muthur	2	1	2	1	1	1	2	2	1	1	2	2	2	1	1	1	2	1
7	Nachippalayam	2	2	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
8	Palathurai	2	1	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
9	Pichanur	2	1	2	1	1	1	2	2	1	1	2	1	1	1	1	1	2	1
10	Poravipalayam	2	1	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
11	Pottaiyandiporambu	2	2	2	1	1	1	2	2	1	2	2	2	1	1	1	1	2	1
12	Sangarayapuram	2	2	2	1	1	1	2	2	2	2	2	2	2	2	1	1	2	1
13	Sokkanur	2	1	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
14	Sulakkal	2	1	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
15	Thambagoundenpalayam	2	2	2	1	1	1	2	2	1	1	2	2	2	2	1	1	2	1
16	Vadaputhur	2	2	2	1	1	1	1	2	1	1	2	2	2	2	1	1	2	1
17	Valukkupparai	2	1	2	1	1	1	1	1	1	1	2	2	2	2	1	1	2	1

Abbreviations: PO - Post Office; MP - Mobile Phone Coverage; RS - Railway Station; GR - Gravel Roads; SPO - Sub Post Office; IC / CSC - Internet Cafe/Common Service Centre; NH - National Highways; NWR - Navigate waterways River; PTO - Post & Telegraph office; PCF - Private Courier Facility; SH - State Highways; FP - Foot path; T- Telephone (Landline); BS - Public Bus Service; MDR - Major District Road; PCO - Public call office / Mobile; PBS - Private Bus Service; BTR - Black Topped (Pucca Roads). Note: 1 - Available within the village 2 - Not available

TABLE 3.28: WATER & DRAINAGE FACILITIES IN THE STUDY AREA

Sl	Village Name	TP	CW	UCW	HP	TW/BH	S	R/C	T/P/L	CD	OD	CT
1	Arisippalayam	1	2	2	2	1	2	1	2	1	1	1
2	Govindapuram	1	1	1	1	1	2	2	2	1	1	2
3	Karunchamigoundenpalayam	1	2	1	1	1	2	2	2	1	1	1
4	Kuthiraiampalayam	1	1	1	1	1	2	2	2	1	1	1
5	Mavuthampathi	1	1	1	1	1	1	1	1	1	1	1
6	Muthur	1	1	1	1	1	2	2	2	1	1	2
7	Nachippalayam	1	1	1	1	1	2	2	2	1	1	1
8	Palathurai	1	1	1	1	1	2	2	2	1	1	1
9	Pichanur	1	1	1	1	1	1	2	2	1	1	2
10	Poravipalayam	1	1	1	2	1	1	2	2	1	1	1
11	Pottaiyandiporambu	1	1	1	2	1	2	2	2	1	1	1
12	Sangarayapuram	1	1	1	1	1	2	2	2	1	1	2
13	Sokkanur	1	1	1	2	1	1	2	2	1	1	2
14	Sulakkal	1	1	1	2	1	1	2	2	1	1	2
15	Thambagoundenpalayam	1	2	2	2	2	2	2	2	1	1	2
16	Vadaputhur	1	1	1	1	1	2	2	2	1	1	1
17	Valukkupparai	1	1	1	1	1	1	2	1	1	1	1

Abbreviations: T - Tap Water; R / C - River / Canal; CW - Covered Well; T/P/L - Tank / Pond / Lake; UCW - Uncovered Well; CD - Covered Drainage; HP - Hand Pump; OD - Open Drainage; TW/BH - Tube / Bore Well; CT - Community Toilet Complex for General public; S - Spring

Note – 1 - Available within the village; 2 - Not available

TABLE 3.29: OTHER FACILITIES IN THE STUDY AREA

Sl	Village Name	ATM	CB	COB	ACS	SHG	PDS	RM	AMS	NC	NC-AC	CC	SF	PL	NPS	APS	BDRO	PS
1	Arisippalayam	2	2	2	2	1	1	2	2	1	1	2	1	1	1	1	1	1
2	Govindapuram	2	2	2	2	1	1	1	2	1	1	2	1	1	1	1	1	1
3	Karunchamigoundenpalayam	2	2	2	2	2	1	2	2	1	1	2	2	2	1	1	1	1
4	Kuthiraialampalayam	2	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1
5	Mavuthampathi	2	2	2	2	1	1	2	2	1	1	1	1	1	1	1	1	1
6	Muthur	2	2	2	2	1	1	1	2	1	1	2	2	2	1	1	1	1
7	Nachippalayam	2	1	2	2	1	1	1	2	1	1	2	2	2	1	1	1	1
8	Palathurai	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1
9	Pichanur	2	2	2	1	1	1	1	2	1	1	1	1	2	1	1	1	1
10	Poravipalayam	2	2	2	1	1	1	1	2	1	1	1	1	2	1	1	1	1
11	Pottaiyandiporambu	2	2	2	2	1	1	2	2	1	1	1	1	1	1	1	1	1
12	Sangarayapuram	2	2	2	2	1	1	1	2	1	1	2	2	2	2	2	1	2
13	Sokkanur	2	1	2	1	1	1	2	2	1	1	1	1	2	1	1	1	1
14	Sulakkal	2	2	2	1	1	1	2	2	1	1	1	1	2	1	1	1	1
15	Thambagoundenpalayam	2	2	2	2	1	2	2	2	1	1	2	2	2	1	1	2	1
16	Vadaputhur	1	2	2	2	1	1	2	2	1	1	1	1	1	1	1	1	1
17	Valukkupparai	2	2	1	1	1	1	2	2	1	1	1	1	2	1	1	1	1

Abbreviations: ATM - Automatic Teller Machine; PDS - Public Distribution System (Shop); CB - Commerical Bank; RM - Regular Market; COB - Co-operative Bank; AMS - Agricultural Market Society; ACS - Agricultural Credit Societies; NC - Nutritional Centres; SHG - Self Help Group; NC-AC - Nutritional Centres - Anganwadi Centre; DBRO - Birth & Death Registration Office; PS - Power Supply
 Note – 1 - Available within the village; 2 - Not available

TABLE 3.30: EDUCATIONAL FACILITIES IN THE STUDY AREA

Sl	Village Name	PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
		G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
1	Arisippalayam	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
2	Govindapuram	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Karunchamigoundenpalayam	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	Kuthiraialampalayam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Mavuthampathi	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2
6	Muthur	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Nachippalayam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Palathurai	1	2	1	2	1	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2
9	Pichanur	1	2	1	2	1	2	1	2	2	2	2	1	2	1	2	2	2	1	2	1	2	2	2	2
10	Poravipalayam	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	Pottaiyandiporambu	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	Sangarayapuram	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Sokkanur	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14	Sulakkal	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	Thambagoundenpalayam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	Vadaputhur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	Valukkupparai	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Abbreviations: PPS-Pre Primary School; SSS-Senior Secondary School; DC-Degree School; PT-Polytechnic; PS-Primary School; G-Government; EC-Engineering College; VTS-Vocational School /ITI; MS-Middle School; P-Private; MC-Medical College; SSD-Special School For Disabled; SS-Secondary School; MI-Management College/Institute;

Note – 1 - Available within the village; 2 - Not available

TABLE 3.31: MEDICAL FACILITIES IN THE STUDY AREA

Sl. No.	Village Name	CHC	PHC	PHSC	MCW	TBC	HA	HAM	D	VH	MHC	FWC	NGM-I/O
1	Arisippalayam	0	1	1	1	1	0	0	1	0	0	1	a
2	Govindapuram	0	0	0	0	0	0	0	0	0	0	0	b
3	Karunchamigoundenpalayam	0	0	0	0	0	0	0	0	0	0	0	b
4	Kuthiraialampalayam	0	0	0	0	0	0	0	0	0	0	0	b
5	Mavuthampathi	0	0	0	0	0	0	0	0	0	0	0	b
6	Muthur	0	0	0	0	0	0	0	0	0	0	0	b
7	Nachippalayam	0	0	1	0	0	0	0	0	0	0	0	a
8	Palathurai	0	0	1	0	0	0	0	0	0	0	0	b
9	Pichanur	0	0	3	0	0	0	0	0	1	0	0	c
10	Poravipalayam	0	1	1	1	1	0	0	1	1	0	1	b
11	Pottaiyandiporambu	0	0	1	0	0	0	0	0	0	0	0	b
12	Sangarayapuram	0	0	0	0	0	0	0	0	0	0	0	b
13	Sokkanur	0	1	1	1	1	0	0	1	1	0	1	a
14	Sulakkal	0	0	1	0	0	0	0	0	0	0	0	b
15	Thambagoundenpalayam	0	0	0	0	0	0	0	0	0	0	0	b
16	Vadaputhur	0	0	1	0	0	0	0	0	0	0	0	b
17	Valukkupparai	0	0	1	0	0	0	0	0	1	0	0	a

Abbreviations: CHC-Community Health Centre; TBC-TB Clinic; VH- Vetrernity Hospital; PHC-Primary Health Centre; HA-Aallopathic Hospital; FWC-Family Welfare Centre; PHSC-Primary Health Sub Centre; HAM-Alternative Medicine Hospital; MH-Mobile Health Clinic; MCW-Maternity and Child Welfare Centre; D-Dispensary; NGM-I/O-Non Government Medical Facilities In & Out Patient

Note – 1 - Available within the village; 2 - Not available a-facility available at <5kms b-facility available at>10kms

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

3.6.6 Recommendation and Suggestion

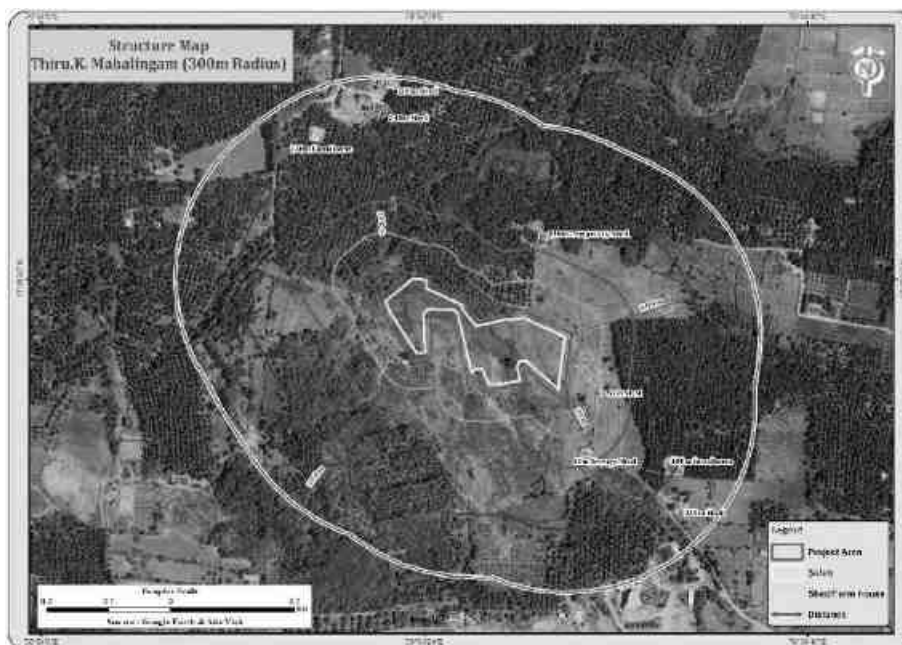
- Awareness program to be conducted to make the population aware to get education and a better livelihood.
- Vocational training programme can be organized to make the people self - employed, particularly for women and unemployed youth.
- On the basis of qualification and skills local community may be preferred. Long term and short-term employments can be generated.
- Health care centre and ambulance facility can be provided to the population to get easy access to medical facilities. Maternity facility should be made available at the place to avoid going to distant places for treatment which involves risks. Apart from that as these areas are prone to various diseases a hospital with modern facilities should be opened on a priority basis in a central place to provide better health facilities to the villagers around the project.
- 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.

3.7 Structure Study



Structure Numbers	Distance & Direction from the project site	Structure Details and Usage Purpose	Type of Structure Structures (Kutchi/ Brick/ Cement/ RCC/ Framed Structures)	No. of Occupants	Structure belongs to owner (Yes/No)	Remarks
1	50m – East	Shed	Sheet Structure	Nil	No	Used for agriculture purpose– No Stay
2	80m – South East	Storage Shed	Tiled & Brick Structure	Nil	No	Used for agriculture purpose– No Stay
3	110m – North	Shed	Sheet Structure	Nil	No	Used to store Mine Materials– No Stay
4	180m – South East	Farmhouse	Sheet, Tiled & Brick Structure	2 Nos	No	Storage purpose– No Stay
5	230m – North West	Farmhouse	Sheet & Brick Structure	1 No	No	Used for agriculture purpose– No Stay
6	240m – North	Shed	Sheet & Brick Structure	Nil	No	Storage purpose– No Stay
7	240m – South East	Shed	Sheet Structure	Nil	No	Used to store Mine Materials– No Stay
8	280m – North	Shed	Sheet & Brick Structure	Nil	No	Storage purpose– No Stay

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:

4.1.2 Anticipated Impact from Proposed Project

- Permanent or temporary change on land use and land cover.
- Change in Topography: Topography of the ML area will change at the end of the life of the mine.
- 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 Common Mitigation Measures for Proposed Project

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.
- Construction of garland drains all around the quarry pits and construction of check dam 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.,

- At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir
- In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier and other safety provided) so as to help minimise dust emissions.
- Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.3 Soil Environment

The proposed projects area is covered by thin layer of gravel formation and the average thickness is about 1m - 2 m, the excavated gravel will be directly sold to needy customers in open market.

4.1.4 Impact on Soil Environment from Proposed Project

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).

4.1.5 Common Mitigation Measures for Proposed Project

- Run-off diversion – Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry works areas. 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. 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.

4.1.6 Waste Dump Management

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

4.2 WATER ENVIRONMENT

4.2.1 Anticipated Impact from Proposed Project

- 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

Detail of water requirements in KLD as given below:**TABLE 4.1: WATER REQUIREMENT**

*Purpose	Quantity	Source
Dust Suppression	0.6 KLD	From Nearby Existing bore well
Green Belt development	1.0 KLD	From Nearby Existing bore well
Domestic purpose	0.4 KLD	Approved water vendors
Total	2.0 KLD	

* Water for drinking purpose will be brought from approved water vendors

Source: Approved Mining Plan Pre-Feasibility Report

4.2.2 Common Mitigation Measures for Proposed Project

- 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 judiciously utilize the rainwater as part of rainwater harvesting system.
- Providing benches with inner slopes and through a system of drains and channels, allowing rain water to descent into surrounding drains, so as to minimize the effects of erosion & water logging arising out of uncontrolled descent of water.
- Reuse the water collected during storm for dust suppression and greenbelt development within the mines
- Installing interceptor traps/oil separators to remove oils and greases. Water from the tipper wash-down facility and machinery maintenance yard will pass through interceptor traps/oil separators prior to its reuse;
- Using flocculating or coagulating agents to assist in the settling of suspended solids during monsoon seasons;
- 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.
- Waste water 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.
- Regular monitoring (every 6 month once) and analysing the quality of water in open well, bore wells and surface water

4.3 AIR ENVIRONMENT**4.3.1. Anticipated Impact from Proposed Project**

- 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.

4.3.1.1. Modelling of Incremental Concentration from Proposed Project

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM₁₀ & PM_{2.5} and emissions of Sulphur dioxide (SO₂) & Oxides of Nitrogen (NO_x) 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.

The impact on Air Environment is due to the mining and allied activities during Land Development phase, Mining process and Transportation. The emissions of Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Rough Stone, wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities releasing Particulate Matter (PM₁₀) affecting Ambient Air of the area. Prediction of impacts on air environment has been carried out taking into consideration cumulative production three proposed quarries. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

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 Frame work of Computation & Model details

By using the above-mentioned inputs, ground level concentrations due to the quarrying activities have been estimated to know the incremental concentration in ambient air quality and impact in the study area. The effect of air pollutants upon receptors are influenced by concentration of pollutants and their dispersion in the atmosphere. Air quality modelling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for emission control to meet the regulatory standards and to apply mitigation measures to reduce impact caused by quarrying activities. 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 PM₁₀ was observed close to the source due to low to moderate wind speeds. Incremental value of PM₁₀ was superimposed on the base line data monitored at the proposed site to predict total GLC of PM₁₀ due to combined impacts

TABLE 4.2: ESTIMATED EMISSION RATE FOR PM₁₀

Activity	Source type	Value	Unit
Drilling	Point Source	0.110336433	g/s
Blasting	Point Source	0.003955571	g/s
Mineral Loading	Point Source	0.045957025	g/s
Haul Road	Line Source	0.00250414	g/s/m
Overall Mine	Area Source	0.044670449	g/s

TABLE 4.3: ESTIMATED EMISSION RATE FOR SO₂

Activity	Source type	Value	Unit
Overall Mine	Area Source	0.001380823	g/s

TABLE 4.4: ESTIMATED EMISSION RATE FOR NO_x

Activity	Source type	Value	Unit
Overall Mine	Area Source	0.000041332	g/s

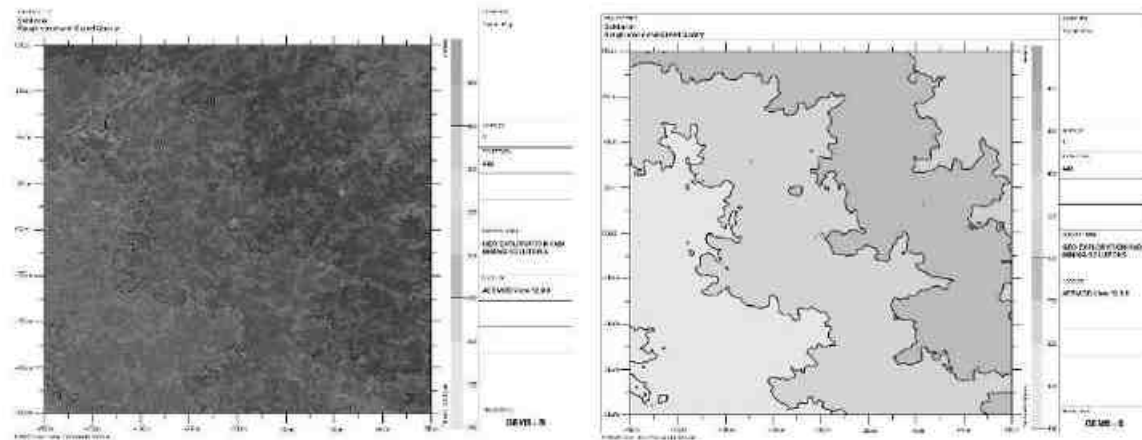
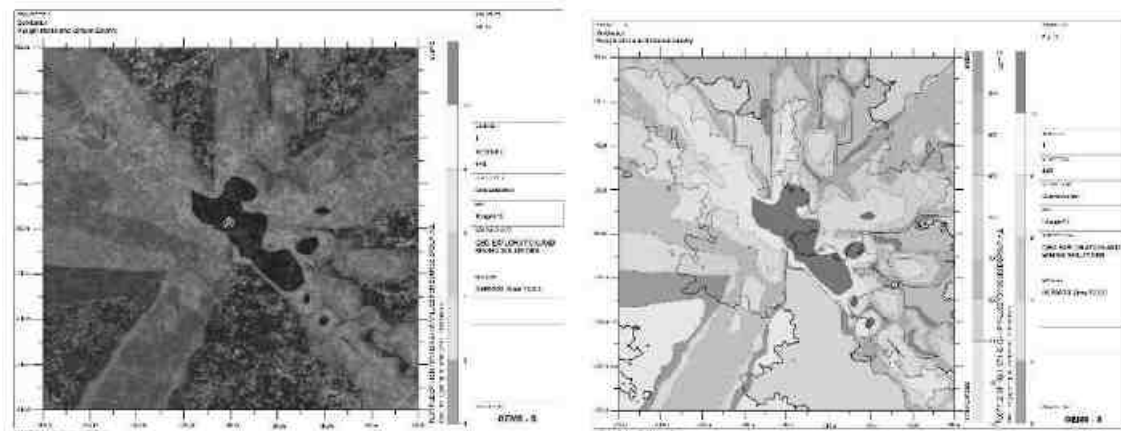
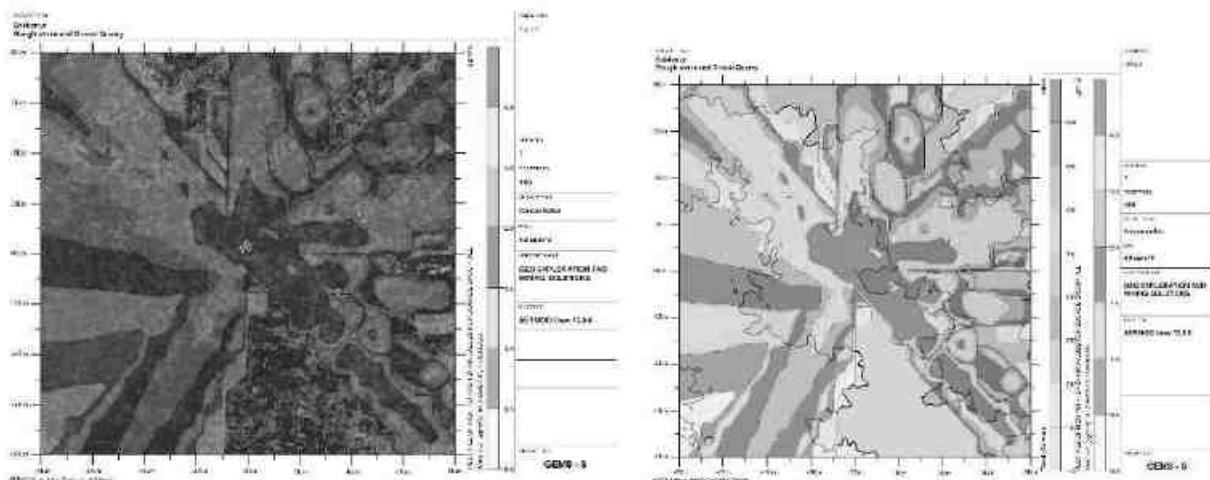
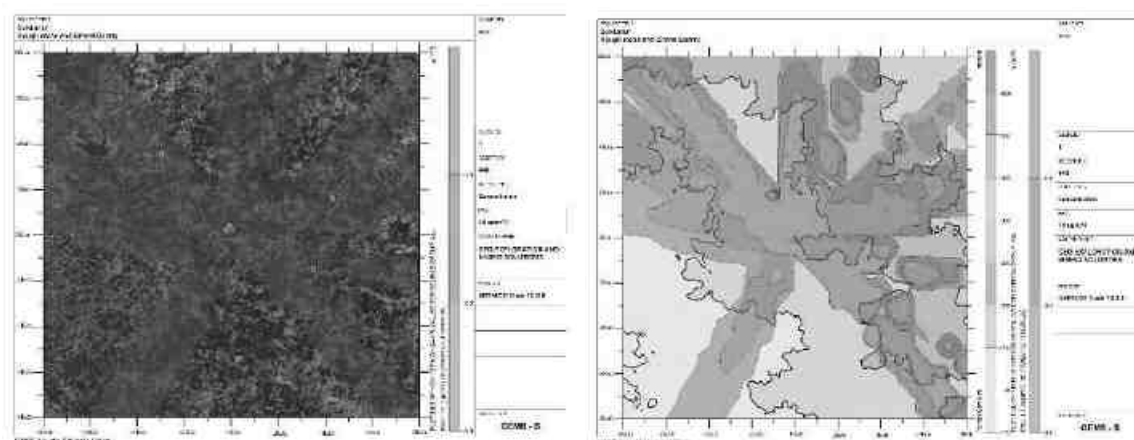
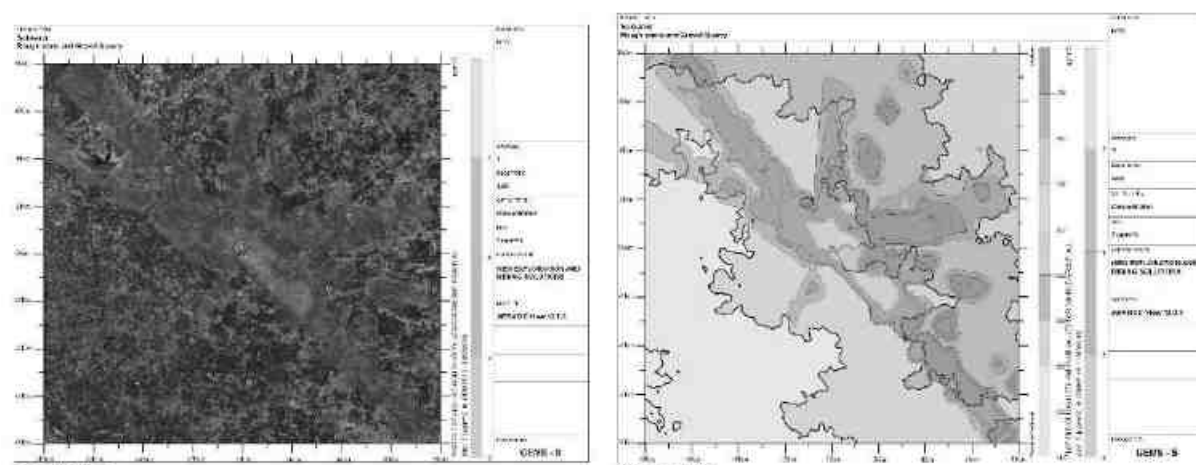
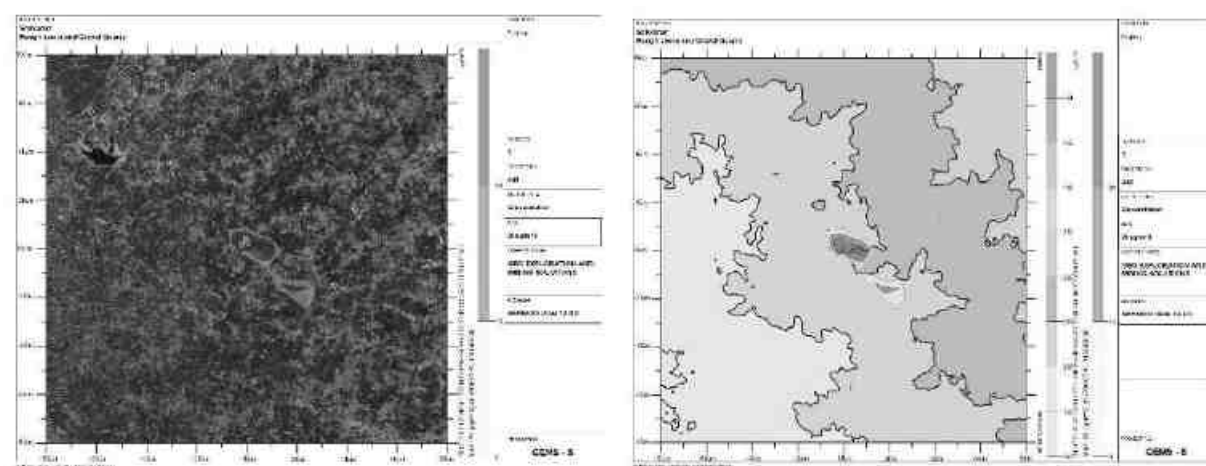
FIGURE 4.1: AERMOD TERRAIN MAP**FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM₁₀****FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM_{2.5}**

FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF SO₂**FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF NO_x****FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST**

4.3.2.1 Model Results

The post project Resultant Concentrations of PM₁₀, PM_{2.5}, SO₂& NO_x (GLC) is given in Table below:

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF PM₁₀

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM ₁₀ (µg/m ³)	Incremental value of PM ₁₀ due to mining (µg/m ³)	Total PM ₁₀ (µg/m ³)
AAQ1	10°48'27.79"N 76°54'22.88"E	-51	46	42.0	10.69	52.69
AAQ2	10°48'23.96"N 76°54'26.21"E	56	-80	42.5	10.23	52.73
AAQ3	10°48'21.40"N 76°54'17.70"E	-207	-159	45.5	9.86	55.36
AAQ4	10°50'10.14"N 76°52'47.94"E	-2950	3196	44.6	9.00	53.6
AAQ5	10°45'19.47"N 76°54'33.93"E	290	-5766	46.2	0	46.2
AAQ6	10°47'26.39"N 76°56'19.14"E	3508	-1854	45.4	0	45.4
AAQ7	10°49'6.89"N 76°56'45.83"E	4323	1243	44.5	8.50	44.5

TABLE 4.6: 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	10°48'27.79"N 76°54'22.88"E	-51	46	20.5	4.89	25.39
AAQ2	10°48'23.96"N 76°54'26.21"E	56	-80	21.0	4.67	25.67
AAQ3	10°48'21.40"N 76°54'17.70"E	-207	-159	23.8	4.30	28.1
AAQ4	10°50'10.14"N 76°52'47.94"E	-2950	3196	24.1	3.79	27.89
AAQ5	10°45'19.47"N 76°54'33.93"E	290	-5766	24.3	0	24.3
AAQ6	10°47'26.39"N 76°56'19.14"E	3508	-1854	24.1	0.33	24.43
AAQ7	10°49'6.89"N 76°56'45.83"E	4323	1243	23.5	3.47	26.97

TABLE 4.7: 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	10°48'27.79"N 76°54'22.88"E	-51	46	4.3	1.49	5.79
AAQ2	10°48'23.96"N 76°54'26.21"E	56	-80	4.2	1.38	5.58

AAQ3	10°48'21.40"N 76°54'17.70"E	-207	-159	4.8	1.27	6.07
AAQ4	10°50'10.14"N 76°52'47.94"E	-2950	3196	4.5	1.19	5.69
AAQ5	10°45'19.47"N 76°54'33.93"E	290	-5766	4.5	0	4.5
AAQ6	10°47'26.39"N 76°56'19.14"E	3508	-1854	4.8	0	4.8
AAQ7	10°49'6.89"N 76°56'45.83"E	4323	1243	4.7	1.00	5.7

TABLE 4.8: INCREMENTAL & RESULTANT GLC OF NOX

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NO _x (µg/m ³)	Incremental value due to mining (µg/m ³)	Total NO _x (µg/m ³)
AAQ1	10°48'27.79"N 76°54'22.88"E	-51	46	19.6	20	39.6
AAQ2	10°48'23.96"N 76°54'26.21"E	56	-80	19.6	16	35.6
AAQ3	10°48'21.40"N 76°54'17.70"E	-207	-159	19.4	0	19.4
AAQ4	10°50'10.14"N 76°52'47.94"E	-2950	3196	19.2	0	19.2
AAQ5	10°45'19.47"N 76°54'33.93"E	290	-5766	19.5	0	19.5
AAQ6	10°47'26.39"N 76°56'19.14"E	3508	-1854	19.6	0	19.6
AAQ7	10°49'6.89"N 76°56'45.83"E	4323	1243	19.6	0	19.6

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 & NO_x respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.4. Common Mitigation Measures for Proposed Project

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 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-metalled 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 –

- 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

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 in close proximity to the project area. 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 a 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.

$A_{e1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

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

4.4.1 Anticipated Impact from Proposed Project

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 4.9: 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

*50 feet from source = 15.24 meters

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

The total noise to be produced by mining activity is calculated to be 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 noise prediction modelling.

TABLE 4.10: PREDICTED NOISE INCREMENTAL VALUES

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	45	46	46.8	47.4	46.3	47.6	46
Incremental Value dB(A)	60.1	60.1	56.6	27.4	25.6	28.1	27.8
Total Predicted Noise level dB(A)	60.2	60.3	57.0	47.4	46.3	47.6	46.1

The incremental noise level is found within the range of 60.1 dB (A) in Core Zone and 25.6 – 56.6 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 Common Mitigation Measures for Proposed Project

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;

- 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 through 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

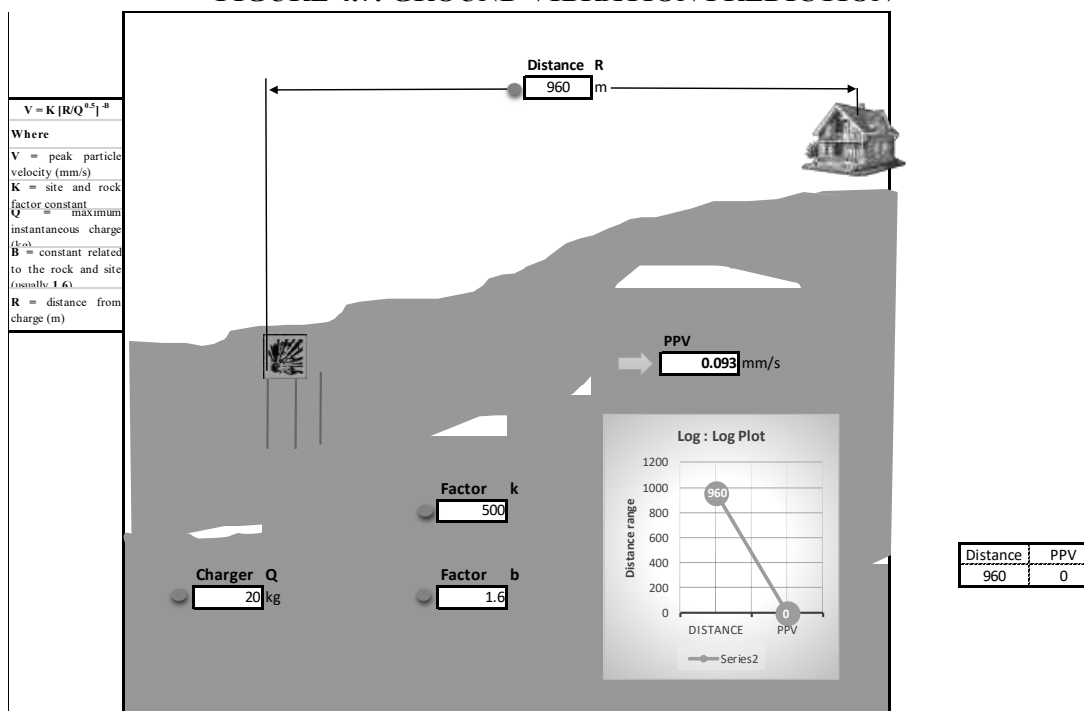
Q = maximum instantaneous charge (kg)

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

R = distance from charge (m)

TABLE 4.11: PREDICTED PPV VALUES DUE TO BLASTING

Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
20	960m -SE	0.093

FIGURE 4.7: GROUND VIBRATION PREDICTION

From the above graph, the charge per blast of 20kg 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 proponents ensure that the charge per blast shall be less than 2 kg and 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.

4.4.3.1 Common Mitigation Measures for Proposed Project

- 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 mm/s.
 - Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4.5 ECOLOGY AND BIODIVERSITY

4.5.1 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. The present study determined to predict the likely impacts of the Proposed Rough stone and Gravel quarry, mining Project in the surrounding environment with a specific focus on biological attributes covering habitats/ecosystems and associated biodiversity. 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.

4.5.2. Impact on Flora

The proposed mine lease area exhibits undulated topography and it is not fit for cultivation. It is mostly devoid of any considerable vegetation. The proposed mine lease 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 of mining activity on local flora, fauna and agricultural land

1. Mining of rough stone involves clearing the flora and fauna in core zone. This can lead to habitat destruction for plant species and removal of trees from the site. However, the core zone contains widely occurring herbs, shrubs and trees. This must be compensated with suitable green belt development practices.
2. The excavation process can remove topsoil, which is crucial for plant growth. In some cases, this can lead to erosion, loss of soil fertility, and changes in soil structure, making it difficult for native plant species to thrive.
3. Mining activity can they destroy the natural habitats of various animal species. However, the proposed area is very small and the animals can migrate to buffer zone.
4. During the loading of the truck, dust generation will be likely to occur. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.

4.5.3 Mitigation Measures

4.5.3.1. General Guidelines for Green Belt Development

Drone survey was covered the green belt and fencing as per the terms of references. The 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 500 trees will be planted per hectare all around the quarry safety barrier, 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.

4.5.3.4. Development of Green Belt

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.

4.5.3.5. 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 green belt will be developed along the periphery of the Proposed Rough stone quarry. The greenbelt development plan has been formulated considering the parameters such as climate, soil types, topography, etc.

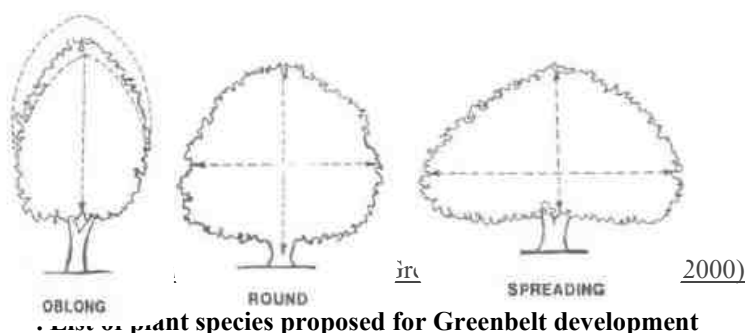
a. Characteristic features of plants to be used for Absorption of pollutant gases

- 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).

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 was planted as given in the table No 4.1 & 4.2 in consulted with the DFO. The plant species with dense/moderate canopy of native origin was chosen are given below. Species of small/ medium/tall trees alternating with shrubs was planted.

- Plants that grow fast will be preferred.
- Preference for high canopy covers plants with local varieties.
- Perennial and evergreen plants will be preferred.
- The development of the Green Belt is an important aspect for any plant because:

- It improves the ambient air quality by controlling Suspended Particulate Matter (SPM) in the air.
- It helps in noise abatement for the surrounding area.
- It helps in the settlement of new birds and insects within itself.
- It maintains the ecological balance.
- It increases the aesthetic value of the site.



S. No	Scientific name	Tamil Name
1	<i>Aegle marmelos</i>	Vilva maram
2	<i>Albizia lebbek</i>	Vaagai maram
3	<i>Cassia fistula</i>	Konrai tree
4	<i>Lannea coromandelica</i>	Othiyam
5	<i>Limonia acidissima</i>	Vila maram
6	<i>Syzygium cumini</i>	Naval maram
8	<i>Ficus hispida</i>	Aththi maram
9	<i>Borassus flabellifer</i>	Panai-maram
10	<i>Madhuca longifolia</i>	Illupai maram
11	<i>Pongamia pinnata</i>	Pongamaram
12	<i>Cassia roxburghii</i>	Sengondrai

(*Source: Term of Reference-ToR)

Species suitable for abatement of noise and dust pollution

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

-
- ✓ 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

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed Rough stone quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. Kindly refer the clause no 3.6.3. 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, Biosphere Reserve, Wildlife corridors, and Tiger/Elephant Reserve found within 10 km radius of the project site.

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. Mostly around the project site <i>Cocus nucifera</i> tree is planted. 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	Bolampatti I R.F has located about 8 km on the Northwest side of the area. Indira Gandhi (Anamalai) Wildlife Sanctuary is located 28.2km on the Southern side 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.

TABLE 4.12: GREENBELT DEVELOPMENT PLAN

Year	No.of trees proposed to be planted	Area to be covered sq.m	Name of the species
I	1500	Along safety distance, panchayat road and approach road	Neem, Mahogany etc,

TABLE 4.13: BUDGET FOR GREENBELT DEVELOPMENT PLAN

S.No	Details of work	Year wise details plantation for each area	
		Total No. plants (5years)	Total Cost (Rs.)

1	Sapling of plant (Approximately cost @ INR 200 per sapling/ plant).	1500	1500	3,00,000.00
2	Maintenance (Rs.) (Manuring, Fertilizer, Insecticide application, watchman etc.)	Cost (Rs. 10000/-) per year for five-year period		50,000.00
		Total		3,50,000.00

After complete extraction of mineral, the pit will be allowed to collect rain and seepage water to serve as a reservoir to charge the nearby wells. Fish culture will also be attempted. A bund will be constructed around the pits. In order to minimize the impact of mining on the vegetation outside the mine lease area, it is recommended that adequate protection measures must be implemented. As mining involves movement of vehicles and increased anthropogenic activities, some of the areas can be fenced by involving local people and educating them about increased benefits of such activities.

TABLE 4.14: ANTICIPATED IMPACT OF ECOLOGY AND BIODIVERSITY

Sl. No	Aspect Description	Likely Impacts on Ecology and Biodiversity (EB)	Impact Consequence - Probability Description / Justification	Significance	Mitigation Measures
Pre-Mining Phase					
1	Uprooting of vegetation of lease area	Site specific loss of common floral diversity (Direct impact)	Site possesses common floral (not trees) species. Clearance of these species will not result in loss of flora	Less severe	No immediate action required. However, Greenbelt /plantation will be developed in project site and in periphery of the project boundary, which will improve flora and fauna diversity of the project area.
		Site specific loss of associated faunal diversity (Partial impact)	Site supports only common species, which use wide variety of habitats of the buffer zone reserve forest area. So, there is no threat of faunal diversity.		
		-Loss of Habitat (Direct impact)	Site does not form Unique / critical habitat structure for unique flora or fauna.		
Mining phase					
2	Excavation of mineral using machine and labours, Transportation activities will generate noise.	Site-specific disturbance to normal faunal movements at the site due to noise. (Partial impact)	Site does not form unique / critical habitat structure for unique flora or fauna.	Less severe	Mining activity should not be operated after 5PM. Excavation of dump and transportation work should stop before 7PM.
3	Vehicular Movement for transportation of materials will result in generation of dust	Impact on surrounding agriculture and associated fauna	Impact is less as the agricultural land far from core area.	Less severe	All vehicles will be certified for appropriate Emission levels.

	(SPM) due to haul roads and emission of SO ₂ ,NO ₂ ,CO etc.	due to deposition of dust and Emission of CO. (Indirect impact)			More plantation has been suggested Upgrade the vehicles with alternative fuel such biodiesel, methanol and biofuel around the mining area.
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4.6 SOCIO ECONOMIC

4.6.1 Anticipated Impact from Proposed Project

- 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 Common Mitigation Measures for Proposed Project

- 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

Long-term exposure to silica dust may cause silicosis the following measures are proposed:

- Cabins of excavators and tippers will be enclosed with AC and sound proof
- Use of personal dust masks will be made compulsory

4.7.2 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

4.7.3 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

4.7.4 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, Spirometry 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 from any of the proposed quarries.

4.9 MINE CLOSURE

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

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

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

4.9.1 Mine Closure Criteria

The criteria involved in mine closure are discussed below:

4.9.1.1 Physical Stability

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

4.9.1.2 Chemical Stability

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

4.9.1.3 Biological Stability

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

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

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

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

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 INTRODUCTION

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

5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE

Thiru.K.Mahalingam Rough Stone and Gravel Quarry Project at Sokkanur Village is a mining project for excavation of Rough Stone, which is site specific. The proposed project has following advantages: -

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

5.2 ANALYSIS OF ALTERNATIVE SITE

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

5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY

Mechanized open cast mining operation with drilling and blasting method will be used to extract Rough Stone in the area. All the applied mining lease areas have following advantages –

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

5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY

Open cast mechanized method is being practiced in this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

6. ENVIRONMENTAL MONITORING PROGRAMME

6.0 GENERAL

The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness or deficiency of the measures adopted and provides insight for future corrections.

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 Project Proponent. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed 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 the Respective 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.

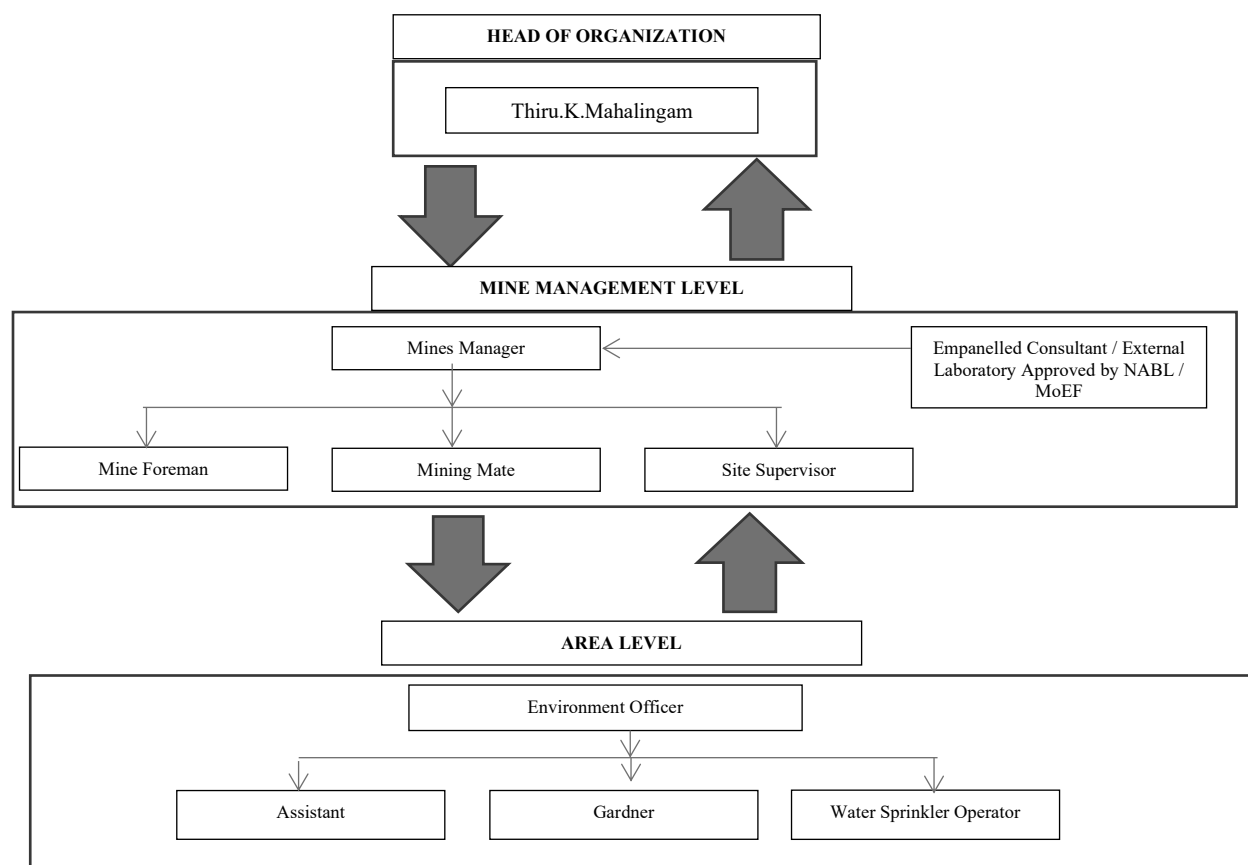
The responsibilities of this cell will be:

- 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

Monitoring shall confirm that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges, emissions and wastes, for measurement against statutory standards. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints.

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	Monitoring water level depth variations
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/- and the recurring cost is Rs 76,000/- per annum.

TABLE 6.3 ENVIRONMENT MONITORING BUDGET

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 Mine Management Coordinator and 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

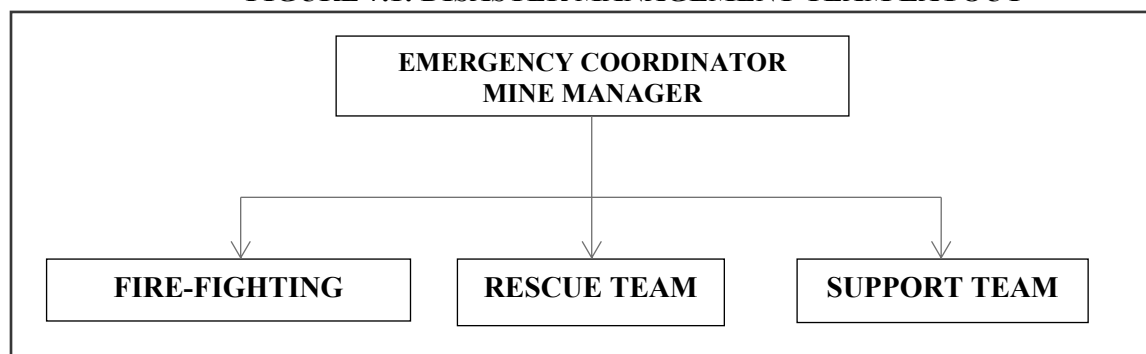
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

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 for respective proposed quarries. 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.

The features of alarm system will be explained to one and all to avoid panic or misunderstanding during disaster. In order to prevent or take care of hazard / disasters if any the following control measures have been adopted.

- All safety precautions and provisions of Metalliferous Mines Regulations (MMR), 1961 is strictly followed during all mining operations.
- Observance of all safety precautions for blasting and storage of explosives as per MMR 1961.
- Entry of unauthorized persons into mine & allied areas is completely prohibited.
- Fire-fighting and first-aid provisions in the mines office complex and mining area are provided.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees and the use of same is strictly adhered to through regular monitoring.
- Training and refresher courses for all the employees working in hazardous premises.
- Working of mine, as per approved plans and regularly updating the mine plans.
- Cleaning of mine faces is regularly done.
- Handling of explosives, charging and blasting are carried out only by qualified persons following SOP.
- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Provision of high-capacity standby pumps with generator sets with enough quantity of diesel for emergency pumping especially during monsoon.
- A blasting SIREN is used at the time of blasting for audio signal.
- Before blasting and after blasting, red and green flags are displayed as visual signals.
- Warning notice boards indicating the time of blasting and NOT TO TRESPASS are displayed at prominent places.
- Regular maintenance and testing of all mining equipment were carried out as per manufacturer's guidelines.

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

*PROPOSED QUARRIES				
CODE	Name of the Owner	S.F. Nos	Extent	Status
P1	Thiru. K.Mahalingam	816(P), 818, 819/1, 822/1(P), 822/2A(P), 824/1A	3.01.0 ha	File No.12979 TOR Identification No. TO25B0108TN5419651N Dated: 19.12.2025
P2	Thiru.A.Subramaniam	834/2(Part), Sokkanur	1.21.5 ha	Pending With SEIAA
Total			4.22.5 ha	
*EXISTING QUARRY				
CODE	Name of the Owner	S.F. No	Extent	Status
E-1	N.K.Ravikumar	860/1D(P) & 893/1	1.21.0 ha	29.10.2021 – 28.10.2026

TOTAL			1.21.0 ha	
EXPIRED QUARRIES				
CODE	Name of the Owner	S.F. No	Extent	Status
EX-1	Thiru.S.Kavitha	859/3A1	1.09.0 ha	22.01.2019 – 21.01.2024
EX-2	Thiru.A.Subramaniam	894	1.01.5 ha	25.01.2019 – 24.01.2024
ABANDONED QUARRY				
Nil				
TOTAL CLUSTER EXTENT*			5.43.5 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 Quarry	Thiru. K.Mahalingam Rough stone and Gravel quarry		
Land Ownership	It is a Own Patta land,		
SF No & Area (Ha)	816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A & 3.01.0 ha		
Village,Taluk & District	Sokkanur Village, Kinathukadavu Taluk, Coimbatore District.		
Toposheet No	58 B/13		
Latitude between	10°48'33.40”N to 10°48'40.79”N		
Longitude between	76°54'16.85"E to 76°54'27.67”E		
Highest Elevation	248m AMSL		
Proposed Depth of Mining	39m (2m Gravel +2m Weathered Rock + 35m Rough Stone) bgl		
Geological Resources	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	10,53,500m ³	60,200m ³	60,200m ³
Mineable Reserves	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	2,50,625 m ³	32,590m ³	34,028m ³
Year wise Production	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	2,50,625 m ³	32,590m ³	34,028m ³
Ultimate Pit Dimension	XY-AB = 51m (L) X 69m(W) X 24m (D) BGL X1Y1-CD = 94m (L) X 97m(W) X 39m (D) BGL X2Y2-EF = 66m (L) X 64m(W) X 29m (D) BGL		
Water Level in the surrounds area	105m bgl		
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting		
Topography	The lease applied area is exhibits undulated topography. The area has gentle sloping towards Northern side. The altitude of the area is 268m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel formation. Massive Charnockite which is clearly inferred from the existing quarry pits.		
Machinery proposed	Jack Hammer	7 Nos	
	Compressor	2 Nos	
	Excavator with Bucket and Rock Breaker	1 No	
	Tipper	3 Nos	
	Water Sprinkling Tanker	1 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	31 Nos	
Project Cost	Rs. 97,79,000/-	
EMP cost	Rs. 3,80,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Odai	50m Safety North
	Kuttai	50m South
	Kumitipathi Stream	3.2km NW
	Walayar Reservoir	5.6km NW
	Koraiyar River	8.3km SE
Greenbelt Development Plan	It is proposed to plant 1500 Nos of trees in the safety barrier and village road.	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	960m SouthEast	

Source: Approved Mining Plan

TABLE 7.5: SALIENT FEATURES OF PROPOSAL “P2”

Name of the Quarry	Thiru. A. Subramaniam Rough stone and Gravel quarry	
Land Ownership	It is a Own Patta land,	
SF No & Area (Ha)	834/2 (Part) & 1.21.50 ha	
Village,Taluk & District	Sokkanur Village, Kinathukadavu Taluk, Coimbatore District.	
Toposheet No	58 B/13	
Latitude between	10°48'23.73"N to 10°48'28.30"N	
Longitude between	76°54'22.54"E to 76°54'26.67"E	
Highest Elevation	268m AMSL	
Proposed Depth of Mining	37m (2m Gravel + 35m Rough Stone) below the ground level	
Geological Resources	Rough Stone in m ³	Gravel m ³
	4,28,730 m³	25,492 m³
Mineable Reserves	Rough Stone in m ³	Gravel m ³
	1,24,456 m³	17,174 m³
Year wise Production	Rough Stone in m ³	Gravel m ³
	1,24,456 m³	17,174 m³
Ultimate Pit Dimension	XY-AB - 100m (L) x 73m (W) x 37m (D) bgl X1Y1-CD - 33m (L) x 39m (W) x 15m (D) bgl	
Water Level in the surrounds area	68 m – 73m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits undulated topography. The area has gentle sloping towards Northern side. The altitude of the area is 268m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel formation. Massive Charnockite which is clearly inferred from the existing quarry pits.	
Machinery proposed	Jack Hammer	4 Nos
	Compressor	1 Nos
	Excavator with Bucket and Rock Breaker	1 No
	Tipper	2 Nos
	Water Sprinkling Tanker	1 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	25 Nos	
Project Cost	Rs. 36,73,000/-	
EMP cost	Rs. 3,80,000/-	
CER Cost	Rs. 5,00,000/-	

Nearby Water Bodies	Vari	70m SE
	Kuttai	100m North
	Odai	400m NW
	Kumitipathi Stream	3.7km NW
	Walayar Reservoir	6km NW
Greenbelt Development Plan	It is proposed to plant 610 Nos of trees in the safety barrier and village road.	
Proposed Water Requirement	2.5 KLD	
Nearest Habitation	780m SouthEast	

Source: Approved Mining Plan

TABLE 7.6: SALIENT FEATURES OF PROPOSAL “E1”

Name of the Quarry	Thiru. N.K.Ravikumar Rough Stone & Gravel Quarry	
S.F.No	860/1D(P) & 893/1(P)	
Extent	1.21.0 Ha	
Toposheet No	58 B/13	
Latitude between	10°48'18.19"N to 10°48'21.44"N	
Longitude between	76°54'17.80"E to 76°54'22.68"E	
Proposed Depth of Mining	32 m bgl	
Proposed quantity of reserves for production in m ³	Rough Stone in m ³	Gravel m ³
	1,25,150	17,388
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is flat Terrain. The area has gentle sloping towards Southeast side. The altitude of the area is 320 m above mean sea level. The area is covered by 2m thickness of Gravel with 2m weathered Rock and followed by Massive Charnockite is found after 4m (Gravel + Weathered Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	2 Nos
	Compressor	1 No
	Hydraulic 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	24 Nos	
Project Cost	Rs.55,18,000/-	
CER Cost	Rs 1,38,000/-	
Greenbelt Development Plan	Proposed to plant 650 trees in the 7.5 m Safety Zone, Village Road & Panchayat Road	
Proposed Water Requirement	2.17 KLD	

Source: Approved Mining Plan

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 7.16 & 7.17.

TABLE 7.7: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE

Quarry	Production for five-year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day
P1	2,50,625	50,125	167	14
P2	1,24,456	24,891	82	7

E1	1,25,150	25,030	83	7
Grand Total	5,00,231	1,00,046	332	28

TABLE 7.8: CUMULATIVE PRODUCTION LOAD OF GRAVEL

Quarry	Production for five-year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day
P1	34,028	11,343	38	3
P2	17,174	5,724	19	1
E1	17,388	5,796	19	1
Grand Total	68,590	22,863	76	5

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is 332m³ per day and overall production of Gravel is 76m³ per day with a capacity of 28 trips of Rough Stone per day and 5 Trips per day of Gravel from the cluster.

Note: Per day production of Rough Stone is calculated for 5 Years Lease Period and for Gravel production with 1 or 3 years of production period. And the load of existing quarries is covered under existing environment of the cluster.

Based on the above production quantities the emissions due to various activities in all the 11 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 7.18.

TABLE 7.9: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS

EMISSION ESTIMATION FOR QUARRY "P1"				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.110336525	g/s
	Blasting	Point Source	0.003955571	g/s
	Mineral Loading	Point Source	0.045957025	g/s
	Haul Road	Line Source	0.002503143	g/s
	Overall Mine	Area Source	0.044670449	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.001380723	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000041232	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.110520554	g/s
	Blasting	Point Source	0.003988703	g/s
	Mineral Loading	Point Source	0.045986404	g/s
	Haul Road	Line Source	0.002504481	g/s
	Overall Mine	Area Source	0.044619025	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.001388435	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000041415	g/s
EMISSION ESTIMATION FOR QUARRY "E1"				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.110520654	g/s
	Blasting	Point Source	0.003988703	g/s
	Mineral Loading	Point Source	0.045986404	g/s
	Haul Road	Line Source	0.002504281	g/s
	Overall Mine	Area Source	0.044619025	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.001388435	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000041420	g/s

Source: Emission Calculation

TABLE 7.10: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM₁₀ in µg/m³	
Background	24.2
Incremental	17.72
Resultant	41.92
NAAQ Norms	100 µg/m³
PM_{2.5} in µg/m³	
Background	43.4
Incremental	10.95
Resultant	54.35
NAAQ Norms	60 µg/ m³
So₂ in µg/m³	
Background	19.8
Incremental	3.59
Resultant	23.39
NAAQ Norms	80 µg/ m³
No₂ in µg/m³	
Background	23.4
Incremental	11.85
Resultant	35.25
NAAQ Norms	80 µg/ m³

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.

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

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 7.11: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
Proposed				
Habitation Near P1	42.6	42.3	48.5	55-45
Habitation Near P2	46.8	42.3	48.1	
Existing				
Habitation Near E1	47.0	40.1	47.8	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 47.8 – 48.5 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 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), dated 19.09.2006 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 11 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 the all the 9 mines 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 areas and may cause injury to persons or damage to the structures.

Nearest Habitations from 11 mines respectively are as in below Table 7.21.

TABLE 7.12: NEAREST HABITATION FROM EACH MINE

Location ID	Distance & Direction
Proposed	
Habitation Near P1	960m-SE
Habitation Near P2	780m-SE
Existing	
Habitation Near E1	1040m SE

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 7.13: GROUND VIBRATIONS AT 2 MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	20	960m-SE	0.093
P2	20	780m-SE	0.130
E1	20	1040m SE	0.082

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 –

The 4 mines shall contribute towards CER and the community shall develop.

TABLE 7.14: SOCIO ECONOMIC BENEFITS FROM 3 MINES

Location ID	Project Cost	CER Cost
P1	Rs.1,18,00,000/-	Rs. 3,00,000/-
P2	Rs.36,73,000/-	Rs. 5,00,000/-
E1	Rs. 55,18,000/-	Rs 1,38,000 /-
Grand Total	Rs. 2,09,91,000/-	Rs. 9,38,000/-

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is ≤ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

- Proposed Projects shall fund towards CER – **Rs 8,00,000/-**
- Existing Projects shall fund towards CER – **Rs.1,38,000/-**
- Projects in Cluster shall fund towards CER – **Rs 9,38,000/-**

TABLE 7.15: EMPLOYMENT BENEFITS FROM 3 MINES

Description	Employment
P1	31
P2	25
E1	24
Grand Total	80

A total of 56 people will get employment due to 2 proposed mines in cluster and 24 people are already employed at existing mines.

TABLE 7.16: GREENBELT DEVELOPMENT

Code	No of Trees proposed to be planted	Area to be covered	Name of the Species
P1	1500	Safety barrier & village road	Vembu, Poovarasu, Pungan, Mahogany etc.,
P2	610		
E1	650		
Total	2,760		

Based on the Proposed Mining Plan it's anticipated that there shall growth of native species of Vembu, Poovarasu, Pungan, Naval etc., in the Cluster at a rate of 2760 Trees Planted over a period of 5 Years with Survival Rate of 80 %.

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 7.17: 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

Carbon Emission.

Carbon dioxide (CO₂): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH₄): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.

Nitrous oxide (N₂O): Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater.

In this quarrying activities, anticipated GHG is mainly CO₂ as its proposed for usage of HSD (High Speed Diesel) for proposed machinery totally deployed are 1 Compressor, 1 Excavator and 2 Tippers for which an approximate usage of HSD is around 150 Liters per day (as per pre-feasibility report). Which contributes to 40.20 kg of CO₂ for the stretch of daily activity of 20 kms @ 1 Litter Diesel produces 2.68 kg of CO₂ on the contrast 1 tree absorbs approximately 20-40 kgs of CO₂ per year.

- It is proposed to plant 1260 Nos trees from this project shall absorb 25,200 kgs of CO₂ per year on average basis.
- Apart from which, its proposed for deployment of New Modern Machineries (BSVI) and PUC certified Vehicles

Therefore, the implementation of proposed mitigation measures for winning of mineral may not have much of impact on the surrounding environment leading to release of Greenhouse gases (GHC), rise in temperature & livelihood of local people.

Hydrothermal/Geothermal effect due to destruction in the Environment.

- Hydrothermal – relating to hot water — used especially of the formation of minerals by hot solutions rising from a cooling magma.
- Geothermal – relating to or produced by the internal heat of the earth.

-
- The proposed activity is for quarrying of Rough stone by opencast mechanized mining method for an ultimate depth of 37 m bgl.
 - The proposed mining area and the surrounding falls under hard rock formation i.e., Charnockite Formation and the district has not recorded any Hydrothermal / Geothermal effect and as per the Seismic Zonation Map of India, the district falls under the Zone II of seismic zones classification.
 - The resultant of this open cast mining shall not have any Hydrothermal/Geothermal effect on the surrounding environment.

Bio-geochemical processes and its foot prints including environmental stress.

- Bio-geochemical cycle – any of the natural pathways by which essential elements of living matter are circulated. The term biogeochemical is a contraction that refers to the consideration of the biological, geological, and chemical aspects of each cycle.
- This proposed activity is for quarrying of rough stone quarry and maximum depth of mining is 37 m bgl and the applied area for quarrying is a patta land with no major vegetation and it is proposed for greenbelt development all along the safety barrier and construction of garland drainage and implement the proposed EMP strictly to mitigate the impacts on surrounding environment.
- No Bio-geochemical processes and its foot prints including environmental stress are anticipated and at the end of life of mine the proposed quarry shall be left as an artificial reservoir structure and allowed to collect rain water and shall enrich the ecosystem.

Sediments geochemistry in the surface streams.

- Sedimentary Geochemistry has been in use to understand the conditions of deposition, climatic variations, tectonic setting, provenance, reservoir characteristics, etc.,
- The elemental composition of sediments in surface streams is the product of physical and chemical erosion of rocks, which is then transported across drainage networks.
- The project area when broken up lead to create void and land use pattern of the proposed area is alerted by ways of formation of open pit and as mitigation measure its proposed for garland drain all along the boundary barrier to ensure that no natural drainage pattern is disturbed and the garland drains are in turn connected to settlement traps were its ensured that no debris are carried away and hence the proposed activity shall not lead to any deposition of sediments in the nearby surface streams.

7.6 CLUSTER MANAGEMENT COMMITTEE

The cluster management committee is proposed to form including of 2 Proposed quarries and 1 existing quarries total extent of the cluster is 5.43.5 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

*PROPOSED QUARRIES				
CODE	Name of the Owner	S.F. Nos	Extent	Status
P1	Thiru. K.Mahalingam	816(P), 818, 819/1, 822/1(P), 822/2A(P), 824/1A	3.01.0 ha	File No.12979 TOR Identification No. TO25B0108TN5419651N Dated: 19.12.2025
P2	Thiru.A.Subramaniam	834/2(Part), Sokkanur	1.21.5 ha	Pending With SEIAA
Total			4.22.5 ha	
*EXISTING QUARRY				
CODE	Name of the Owner	S.F. No	Extent	Status
E-1	N.K.Ravikumar	860/1D(P) & 893/1	1.21.0 ha	29.10.2021 – 28.10.2026
TOTAL			1.21.0 ha	
EXPIRED QUARRIES				
CODE	Name of the Owner	S.F. No	Extent	Status
EX-1	Thiru.S.Kavitha	859/3A1	1.09.0 ha	22.01.2019 – 21.01.2024
EX-2	Thiru.A.Subramaniam	894	1.01.5 ha	25.01.2019 – 24.01.2024
ABANDONED QUARRY				
Nil				
TOTAL CLUSTER EXTENT*			5.43.5 Ha	

STANDARD OPERATING PROCEDURE FOR SOKKANUR 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-metalled 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 through 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.
-

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- 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
-

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- Implement monitoring programme to provide early warning of any deficiency or unanticipated performance in environmental safeguards
 - Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement
 - Monitoring of the water/ waste water quality, air quality and solid waste generated
 - Analysis of the water and air samples collected through external laboratory
 - Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
 - Co-ordination of the environment related activities within the project as well as with outside agencies
 - Collection of health statistics of the workers and population of the surrounding villages
 - Green belt development
 - Monitoring the progress of implementation of the environmental monitoring programme

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

8. PROJECT BENEFITS

8.0 GENERAL

The Proposed Project for Quarrying Rough Stone at Sokkanur Village aims to produce 2,50,625m³ Rough Stone over a period of 5 Years and Gravel 34,028 m³ of 3 Years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits

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

8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 31 persons for carrying out mining operations and give preference to the local people in providing employment. 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 project area is located in Sokkanur Village, Kinathukadavu Taluk and Coimbatore 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 this project.

- 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.,
-

CORPORATE SOCIAL RESPONSIBILITY

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.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 10 km of the project site. For this purpose, separate budget will be provided every year. For finalization of these schemes, proponent will interact with LSG. The schemes will be selected from the following broad areas –

- Health Services
- Social Development
- Infrastructure Development
- Education & Sports
- Self-Employment

CSR Cost Estimation

- CSR activities will be taken up in the Moooduthurai 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.

CORPORATE ENVIRONMENT RESPONSIBILITY

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.

The project proponent will have spent Rs.3,00,000/- towards Corporate Environmental Responsibility for the Nearby Government School (Panchayat Union Primary School-Marichettipathi, Coimbatore)

TABLE 8.1: CER – ACTION PLAN

Activity	Beneficiaries	Total
Providing Sanitation facilities to the school	Sokkanur villagers	Rs 3,00,000/-
Planting and maintaining of trees in the school compound	Sokkanur villagers	
Painting the classrooms and providing RO water facilities	Sokkanur villagers	
Providing Environmental related books to the school library	Sokkanur villagers	

Source: Field survey conducted by FAE, consultation with project proponent

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

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

10. ENVIRONMENTAL MANAGEMENT PLAN

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. K,Mahalingam 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. Aesthetic of the Environment will not be affected. 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
Re-fuelling 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 overburden or waste anticipated from proposed project.

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 upto a depth of 39 m BGL, the water table in the area is 105 m 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 are carried out in the project area and in surrounding villages to assess 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.C 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 900 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

TABLE 10.7. PROPOSED GREENBELT ACTIVITIES

No. of trees proposed to be planted	Recommended area	Name of the species
1500	Safety barrier, Unutilized land, Village roads	Vembu, Poovarasu, Pungan, Mahogany etc.,

Source: Conceptual Plan of Approved Mining plan & Proposed by FAE's & EIA Coordinator

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 10.8.: RECOMMENDED SPECIES TO PLANT IN THE GREENBELT

S.No	Botanical Name	Local Name	Importance
1.	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2.	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3.	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4.	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

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 –

- Identifying workers with conditions that may be aggravated by exposure to dust & noise and establishing baseline measures for determining changes in health.
- Evaluating the effect of noise on workers
- Enabling corrective actions to be taken when necessary
- Providing health education

The health status of workers in the mine shall 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 10.9.: MEDICAL EXAMINATION SCHEDULE

Sl.No	Activities	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th 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)					

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	PME as per Mines Rules 1955	Special Examination
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies
Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.		

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.
- Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment.
- 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.
- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- The width of road will be maintained more than thrice the width of the vehicle. A code of traffic rules will be implemented.
- 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.

TABLE 10.10.: LIST OF PERIODICAL TRAININGS PROPOSED FOR EMPLOYEES

Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees exposed to mine hazards	Once	One week	Employee rights Supervisor responsibilities Self-rescue Respiratory devices Transportation controls Communication systems Escape and emergency evacuation Ground control hazards Occupational health hazards Electrical hazards First aid Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health & safety procedures and SOP for various mining activity. Supervised practice in assigned work tasks.
Refresher Training	All employees who received new-hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems Escape ways, emergency evacuations Fire warning Ground control hazards First aid Electrical hazards Accident prevention Explosives Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

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 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

TABLE 10.11: EMP BUDGET FOR PROPOSED PROJECT

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring per annum
Air Environment	Haul road maintenance & Water sprinkling	Lump sum fund allocation for daily maintenance of haul roads and thrice a day water sprinkling by fixed sprinklers or water tankers	0	50000
	Muffle blasting – To control fly rocks during blasting	Lump sum fund allocation Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure	Lump sum fund allocation for ensuring wet drilling by covering drill holes with wet gunny bags and spraying water while drilling	0	10000
	No overloading of trucks/tippers/tractors	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Enforcing speed limits of 20 km/hr within ML area	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Regular monitoring of exhaust fumes as per RTO norms	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	5000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0

	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision made in Operating Cost	0	0
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Provision made in Operating Cost	0	0
	3. Greenbelt development under safety zone during the mining period	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	100000
	Workers will be provided with Personal Protective Equipment's	Lumpsum fund allocation	50000	15000
	Health checkup for workers will be provisioned	IME & PME Health checkup for all the employees will be covered batch wise.	0	50000

	First aid facility will be provided	Lumpsum fund allocation	0	5000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Lumpsum fund allocation	50000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			5,60,000	3,02,000

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

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

Thiru. K.Mahalingam Rough Stone and Gravel (Extent – 3.01.0 ha) 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.

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 March -May 2025 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed.

Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone as per market demand.

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for 31 people directly in the proposed project and indirectly around 50 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Thiru.K.Mahalingam Rough Stone and Gravel Quarry. (Extent 3.01.0 ha)

12. DISCLOSURE OF CONSULTANT

The Project Proponent Thiru. K.Mahalingam Proprietor of Thiru.K.Mahalingam Rough Stone and Gravel Quarry 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 for the proposed project.

Name and address of the consultancy:

GEO EXPLORATION AND MINING SOLUTIONS

No 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004

Tamil Nadu, India

Email:infogeoexploration@gmail.com

Web: www.gemssalem.com

Phone: 0427 2431989.

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

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	Dr. M. Ifthikhar Ahmed	In-house	1	A	WP GEO SC	B A A
2	Dr. P. Thangaraju	In-house	-	-	HG GEO	A A
3	Mr. A. Jagannathan	In-house	-	-	AP NV SHW	B A B
4	Mr. N. Senthilkumar	Empanelled	38 28	B B	AQ WP RH	B B A
5	Mrs. Jisha parameswaran	In-house	-	-	SW	B
6	Mr. Govindasamy	In-house	-	-	WP	B
7	Mrs. K. Anitha	In-house	-	-	SE	A
8	Mrs. Amirtham	In-house	-	-	EB	B
9	Mr. Alagappa Moses	Empanelled	-	-	EB	A
10	Mr. A. Allimuthu	In-house	-	-	LU	B
11	Mr. S. Pavel	Empanelled	-	-	RH	B
12	Mr. J. R. Vikram Krishna	Empanelled	-	-	SHW RH	A A

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

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Thiru.K.Mahalingam Rough Stone & Gravel Quarry Project over an Extent of 3.01.0 ha in Sokkanur Village of Kinathukadavu Taluk, Coimbatore District of Tamil Nadu. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

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

Designation: **EIA Coordinator**

Date & Signature:

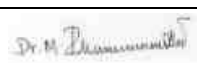
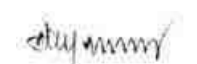
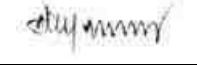
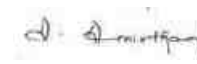


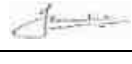
Period of Involvement: **July 2023 to till date**

Associated Team Member with EIA Coordinator:

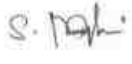
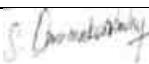
1. Mr. S. Nagamani
2. Mr.P. Viswanathan
3. Mr. M.Santhoshkumar
4. Mr. S. Ilavarasan

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	
			Mr. N. Senthilkumar	
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. M. Ifthikhar Ahmed	
			Dr. P. Thangaraju	
5	SE	- Revision in secondary data as per Census of India, 2011. - Impact Assessment & Preventive Management Plan - Corporate Environment Responsibility.	Mrs. K. Anitha	
6	EB	- Collection of Baseline data of Flora and Fauna. - Identification of species labelled as Rare, Endangered and threatened as per IUCN list.	Mrs. Amirtham	

		- Impact of the project on flora and fauna. - Suggesting species for greenbelt development.	Mr. Alagappa Moses	
7	RH	- Identification of hazards and hazardous substances - Risks and consequences analysis - Vulnerability assessment - Preparation of Emergency Preparedness Plan - Management plan for safety.	Mr. N. Senthilkumar	
			Mr. S. Pavel	
			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. A. Jagannathan	
			Mr. J. R. Vikram Krishna	

LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. S. Nagamani	AP; GEO; AQ	- Site Visit with FAE - Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures - Provide inputs on Geological Aspects - Analyse & provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures	
2	Mr. Viswathanan	AP; WP; LU	- Site Visit with FAE - Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures - Assisting FAE on sources of water pollution, its impacts and suggest control measures - Assisting FAE in preparation of land use maps	
3	Mr. Santhoshkumar	GEO; SC	- Site Visit with FAE - Provide inputs on Geological Aspects - Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan - Provide inputs & Assisting FAE with soil conservation methods and identifying impacts	
4	Mr. Umamahesvaran	GEO	- Site Visit with FAE - Provide inputs on Geological Aspects	

			Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan	
5	Mr. A. Allimuthu	SE	- Site Visit with FAE - Assist FAE with collection of data's - Provide inputs by analysing primary and secondary data	<i>allimuthu</i>
6	Mr. S. Ilavarasan	LU; SC	- Site Visit with FAE - Assisting FAE in preparation of land use maps - Provide inputs & Assisting FAE with soil conservation methods and identifying impacts	<i>S. Ilavarasan</i>
7	Mr. E. Vadivel	HG	- Site Visit with FAE - Assist FAE & provide inputs on aquifer characteristics, ground water level/table - Assist with methods of ground water recharge and conduct pump test, flow rate	<i>E. Vadivel</i>
8	Mr. D. Dinesh	NV	- Site Visit with FAE - Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures - Assist FAE with prediction modelling	<i>D. Dinesh</i>
9	Mr. Panneer Selvam	EB	- Site Visit with FAE - Assist FAE with collection of baseline data - Provide inputs and assist with labelling of Flora and Fauna	<i>P. Panneer Selvam</i>
10	Mrs. Nathiya	EB	- Site Visit with FAE - Assist FAE with collection of baseline data - Provide inputs and assist with labelling of Flora and Fauna	<i>T. Annappa</i>

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 the EIA/EMP for Thiru. K.Mahalingam Rough Stone & Gravel Quarry Project over an Extent of 3.01.0 ha in Sokkanur Village of Kinathukadavu Taluk, Coimbatore 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

ANNEXURE

THIRU. MAHALINGAM ROUGH STONE AND GRAVEL QUARRY

Sokkanur

Village, Kinathukadavu Taluk, Coimbatore District

CLUSTER EXTENT = 3.01.0 ha

Project Proponent

Proponent Name	Extent (Ha)	ToR
Thiru. K. Mahalingam S/o. kanthasamy No. 8/129, Madheshwarar Kovil Thottam, Kuttigoundenpathy, Kumittipathy Post, Coimbatore District – 641 032	3.01.0 ha	File No. 12979 TOR Identification No. TO25B0108TN5419651N Dated:19.12.2025

LIST OF ANNEXURES

CODE	DESCRIPTION	PAGE NO.
P1	COPY OF TERMS OF REFERENCE	1A-14A
	COPY OF MINING PLAN APPROVAL LETTER	15A-17A
	COPY OF 500m RADIUS LETTER	18A-19A
	COPY OF APPROVED MINING PLAN AND PLATES	20A-100A
	COPY OF EXPLOSIVE CERTIFICATE	101A-108A
	COPY OF CER LETTER	109A-110A
	COPY OF 300M RADIUS LETTER	111A-112A
E1	COPY OF EC	113A – 128A
	COPY OF BASE LINE MONITORING DATA	129A-227A
	COPY OF NABET CERTIFICATE	228A



File No: 12979
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated: 19/12/2025



To,

Thiru. K.Mahalingam
No. 8/129, Madheshwar Kovil Thottam, Kuttigoundenpathy, Kummittipathy Post, Coimbatore District,
Coimbatore , TAMIL NADU - 641032
mahalingammahal68@gmail.com

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

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Rough Stone and Gravel Quarry over an extent of 3.01.0 Ha at S.F. No. 816 (P), 818, 819/1, 822/1(P), 822/2A(P) & 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu by Thiru. K.Mahalingam – “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/557121/2025, Dated: 08.11.2025.

2. Minutes of the 648th Meeting of SEAC held on 05.12.2025.

3. Minutes of the 931st Meeting of Authority held on 15.12.2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108TN5419651N
(ii) File No.	12979
(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 K. Mahalingam
(viii) Name of Company/Organization	KANDASAMY GOUNDER MAHALINGAM
(ix) Location of Project (District, State)	COIMBATORE, 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 **15.12.2025** 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. K.Mahalingam** 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, Coimbatore District,
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. Assistant Director, Department of Geology & Mining, Coimbatore District,
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Annexure 1

Specific Terms of Reference 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-II and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 2,50,625m³ of Rough Stone & 34,028m³ of Gravel up to the depth of 39m BGL and the annual peak production is 60,850m³ of Rough Stone & 14,328m³ 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.

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 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. <u>Agriculture & Agro-Biodiversity</u> 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. <u>Forests</u> 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. <u>Water Environment</u> 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

S. No	Terms of Reference
	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: - Hydrothermal/Geothermal effect due to destruction in the Environment. - Bio-geochemical processes and its foot prints including Environmental stress. - Sediment geochemistry in the surface streams. <u>Energy</u> 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. <u>Climate Change</u> 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. <u>Mine Closure Plan</u> 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. <u>EMP</u> 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. <u>Risk Assessment</u> 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. <u>Disaster Management Plan</u> 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. <u>Others</u> 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

S. No	Terms of Reference
	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.

Additional Terms of Reference

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 Organization 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.

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.

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.

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

20) 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.

21) 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).

22) 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.

23) 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.

24) 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.

25) 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.

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

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

29) 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.

30) 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.

31) 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.

32) 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.

33) 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.

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

35) 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.

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) 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) 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.

40) 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.

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

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

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

44) 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) A detailed study of the lithology of the mining lease area shall be furnished.

- 6) Details of village map, "A" register and FMB sketch shall be furnished.
- 7) Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
- 8) 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.
- 9) EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
- 10) Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
- 11) The EIA study report shall include the surrounding mining activity, if any.
- 12) 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.
- 13) A study on the geological resources available shall be carried out and reported.
- 14) A specific study on agriculture & livelihood shall be carried out and reported.
- 15) Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
- 16) Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
- 17) Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
- 18) Likely impact of the project on air, water, land, flora-fauna and nearby population
- 19) Emergency preparedness plan in case of natural or in plant emergencies
- 20) Issues raised during public hearing (if applicable) and response given
- 21) CER plan with proposed expenditure.
- 22) Occupational Health Measures
- 23) Post project monitoring plan
- 24) The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
- 25) A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
- 26) The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
- 27) A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
- 28) Reserve funds should be earmarked for proper closure plan.
- 29) A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

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

e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J - 11013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.

• After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above-mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

• The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.

• The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.



Signature Not Verified

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

Date: 19/12/2025 ☐

From

Thiru.L.Suresh, M.Sc.,
Joint Director,
Geology and Mining,
Coimbatore

To

Thiru.K.Mahalingam,
S/o.Kandasamy Gounder,
8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy,
Kumittipathy (po),
Coimbatore.

Rc.No.748/Mines/2023 Dated: 23.09.2025.

Sir,

Sub: Mines and Minerals – Minor Mineral – Coimbatore District
- Kinathukadavu Taluk – Sokkanur Village – Survey
Nos.816 (part) (0.67.5 Hec), 818 (0.25.0 Hec), 819/1
(0.54.0 Hec), 822/1(part) (0.32.5 Hec), 822/2A(Part)
(0.19.5 Hec) and 824/1A (1.02.5 Hec) - over an extent of
3.01.0 hectares of patta land - Rough stone & Gravel
quarry lease – Precise area communicated – Draft mining
plan submitted by Thiru.K.Mahalingam - Approved of
mining plan - Regarding.

Ref: 1. Application of Thiru.K.Mahalingam dated: 29.06.2022
& 28.07.2023.
2. Precise area communication in Rc.No.748/Mines/ 2022
dated: 06.03.2025.
3. Thiru.K.Mahalingam letter dt. 19.09.2025.

In the reference 1st cited, Thiru.K.Mahalingam has applied for the grant of rough stone & Gravel quarry lease over an extent of 3.01.0 hectares of patta land in Survey Nos. 816 (part) (0.67.5 Hec), 818 (0.25.0 Hec), 819/1 (0.54.0 Hec), 822/1(part) (0.32.5 Hec), 822/2A(Part) (0.19.5 Hec) and 824/1A (1.02.5 Hec) of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2) Based on the recommendations of the Tahsildar, Kinathukadavu, Sub Collector, Pollachi, Block Development Officer, Kinathukadavu and the Assistant Geologist of Geology and Mining, Coimbatore, and instructions of the District Collector in the office note order dated 07.02.2025 the precise area has been communicated to the applicant vide reference 2nd cited.

3) In exercise of powers delegated under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the mining plan submitted by Thiru.K.Mahalingam for grant of rough stone & gravel quarry lease over an extent of 3.01.0 hectares of patta land in Survey Nos. 816 (part) (0.67.5 Hec), 818 (0.25.0 Hec), 819/1 (0.54.0 Hec), 822/1(part) (0.32.5 Hec), 822/2A(Part) (0.19.5 Hec) and 824/1A (1.02.5 Hec) of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District for a period of Five years and the proposed mineable reserves after leaving safety distance is arrived as **6,89,219 MT** of rough stone **65,180 MT** of weathered Rock and **68,056 MT** of gravel upto a depth of 39 m. This approval is subject to the following conditions:-

- (i). That the mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.
- (ii). This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884(Central Act IV of 1884) and the rules made there under the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii). That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv). No hindrance should be caused to the Public and nearby patta lands.
- (v). A safety distance of 7.5 meters should be provided for adjacent patta land from the lease applied area.
- (vi). A safety distance of 10 meters should be provided from the government poramboke lands in S.F.Nos 815, 824/2 and 817.
- (vii). A safety distance of 50 meters should be provided EB line crossing through S.F.No. 824/1A or the EB line should be shifted 50 meters away from the lease area.

(viii). A safety distance of 50 meters should be provided from the water body located in S.F.No.822/2A.

(ix). DGPS survey should be done by the Government recognized agency and boundary stones should be erected along the entire boundary of the leased out area.


Joint Director,
Geology and Mining,
Coimbatore

Encl: 2 copies of Approved Mining Plan.

Copy submitted to :

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

From

Thiru.L.Suresh, M.Sc.,
Joint Director (Addl. Charge),
Geology and Mining,
Coimbatore

To

Thiru.K.Mahalingam,
S/o.Kandasamy Gounder,
8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy,
Kumittipathy (po),
Coimbatore.

Rc.No.748/Mines/2022 Dated:15.10.2025.

Sir,

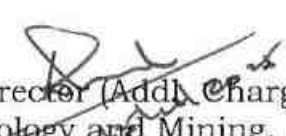
Sub: Mines and Quarries – Minor Minerals – Coimbatore District - Kinathukadavu Taluk – Sokkanur Village - Survey Nos.816 (part) (0.67.5 Hec), 818 (0.25.0 Hec), 819/1 (0.54.0 Hec), 822/1(part) (0.32.5 Hec), 822/2A(Part) (0.19.5 Hec) and 824/1A (1.02.5 Hec) - over an extent of 3.01.0 hectares of patta land - Rough stone & Gravel quarry lease – Precise area communicated – Draft mining plan submitted by Thiru.K.Mahalingam – 500 mts Radius letter requested- regarding.

Ref: 1. Application of Thiru.K.Mahalingam dated: 29.06.2022 & 28.07.2023.
2. Precise area communication in Rc.No.748/Mines/ 2022 dated: 06.03.2025.
3. Thiru.K.Mahalingam letter dt. 06.10.2025

With reference to your letter in the reference 3rd cited, the details of existing and lease expired quarries located within 500 mts radius from the proposed Rough stone & gravel quarry over an extent of 3.01.0 hectares of patta land in Survey Nos. 816 (part) (0.67.5 Hec), 818 (0.25.0 Hec), 819/1 (0.54.0 Hec), 822/1(part) (0.32.5 Hec), 822/2A(Part) (0.19.5 Hec) and 824/1A (1.02.5 Hec) of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District are as follows:

Sl. No	Name of the quarry Owner	Name of the Village & Survey Number	Extent (in Hects)	Remarks
a. Existing Quarries				
1	N.K.Ravikumar	Sokkanur, 860/1D(P) & 893/1 (P)	1.21.0	29-10-2021 to 28.10.2026

b. Expired Quarries				
1	Subramaniam.A	Sokkanur 894(P)	1.01.5	25.01.2019 to 24.01.2024
2	S.Kavitha	Sokkanur 859/3A1	1.09.0	22.01.2019 to 21.01.2024
c. Abandoned Quarries				
-NIL-				
d. Present proposed Quarries				
1	K.Mahalingam	Sokkanur, 816 (P), 818, 819/1 822/1 (P), 822/2A(P) 824/1A	3.01.0	Subject area
2	A.Subramanian	Sokkanur 834/2(P)	1.21.5	Pending with SEIAA


 Joint Director (Addl. charge),
 Geology and Mining,
 Coimbatore


 15/10/23

**MINING PLAN ALONG WITH
PROGRESSIVE QUARRY CLOSURE PLAN FOR
SOKKANUR 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 : 3.01.0 Ha
S.F.NO.s : 816 (Part), 818, 819/1, 822/1 (Part),
822/2A (Part) and 824/1A
VILLAGE : SOKKANUR
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMIL NADU

FOR

APPLICANT

THIRU. K. MAHALINGAM,
S/o. Kanthasamy,
No. 8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy, Kumittipathy Post,
Coimbatore District,
Tamil Nadu State – 641 032.

PREPARED BY

S. ILAVARASAN, M.SC.,
Qualified Person

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

No. 289, Shanthi Nagar First Cross,
Chinnakollappatti, Kannankurichi post,
Salem District – 636 008.
Mobile No.: +91 94880 69569
E-mail ID: ilageo.s@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
- BGL - Below Ground Level
- MT - Metric Tonnes

K. Mahalingam,
S/o. Kanthasamy,
No. 8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy, Kumittipathy Post,
Coimbatore District,
Tamil Nadu State – 641 032
Mobile No. : +91 96008 15888.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Sokkanur Rough Stone and Gravel Quarry over an extent 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared by

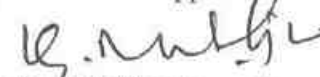
S. Ilavarasan, M.Sc.,
Qualified Person

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, Coimbatore District, Tamil Nadu State to make further correspondence regarding the modification of the Mining plan with the said Qualified Person at his following address.

S. Ilavarasan, M.Sc.,
Qualified Person
No. 289, Shanthi Nagar First Cross,
Chinnakollappatti, Kannankurichi post,
Salem District – 636 008.
Mobile No.: +91 94880 69569
E-mail ID: ilageo.s@gmail.com

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


K. Mahalingam

Place: Coimbatore

Date: 03.04.2025

K. Mahalingam,
S/o. Kanthasamy,
No. 8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy, Kumittipathy Post,
Coimbatore District,
Tamil Nadu State – 641 032
Mobile No. : +91 96008 15888.



DECLARATION OF THE APPLICANT

The Mining plan and Progressive Quarry Closure Plan in Respect of Sokkanur Rough Stone and Gravel Quarry over an extent 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared in full consultation with me by.

S. Ilavarasan, M.Sc.,
Qualified Person

We 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

K. Mahalingam

Place: Coimbatore

Date: 05.04.2025

CERTIFICATE

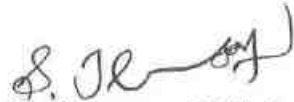


Certified that I am, **S. Ilavarasan, M.Sc.**, residing at, No. 289, Shanthi Nagar First Cross, Chinnakollappatti, Kannankurichi post, Salem District – 636 008, holding a Post Graduate Degree in Geology (M.Sc. Applied Geology) from Bharathidasan University, Trichy and I worked in the field of Mining 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 Sokkanur Rough Stone and Gravel Quarry over an extent 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State for **Thiru. K. Mahalingam**, S/o. Kanthasamy, residing at No. 8/129, Madheshwarar Kovil Thottam, Kuttigoundenpathy, Kumittipathy Post, Coimbatore District, Tamil Nadu State – 641 032. 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


(S. Ilavarasan, M.Sc.)

Place: Salem

Date: 05.04.2025

S. Ilavarasan, M.Sc.,
No. 289, Shanthi Nagar First Cross,
Chinnakollappatti, Kannankurichi post,
Salem District – 636 008.
Mobile: +91 94880 69569
E-mail: ilageo.s@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 Sokkanur Rough Stone and Gravel Quarry over an extent 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared for

Thiru. K. Mahalingam,

S/o. Kanthasamy,

No. 8/129, Madheshwarar Kovil Thottam,

Kuttigoundenpathy, Kumittipathy Post,

Coimbatore District,

Tamil Nadu State – 641 032

Mobile No. : +91 96008 15888.

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, Coimbatore 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


(S. Ilavarasan, M.Sc.)

Place: Salem

Date: 05.04.2025

S. Ilavarasan, M.Sc.,
No. 289, Shanthi Nagar First Cross,
Chinnakollappatti, Kannankurichi post,
Salem District – 636 008.
Mobile: +91 94880 69569
E-mail: ilageo.s@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 Sokkanur Rough Stone and Gravel Quarry over an extent 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared for

Thiru. K. Mahalingam,

S/o. Kanthasamy,
No. 8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy, Kumittipathy Post,
Coimbatore District,
Tamil Nadu State – 641 032
Mobile No. : +91 96008 15888.

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


(S. Ilavarasan, M.Sc.)

Place: Salem

Date: 05.04.2025



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**MINING PLAN ALONG WITH
PROGRESSIVE QUARRY CLOSURE PLAN FOR
SOKKANUR 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. K. Mahalingam**, S/o. Kanthasamy, residing at No. 8/129, Madheshwarar Kovil Thottam, Kuttigoundenpathy, Kumittipathy Post, Coimbatore District, Tamil Nadu State – 641 032 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 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District for the period of Five years under rule 19 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, Coimbatore District and passed a precise area communication letter vide **R.C.No.748/Mines/2022, Dated: 06.03.2025** 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 five years with following conditions (Refer Annexure No. I):

General Condition:

1. No hindrance shall be caused to the adjacent patta lands and Public while quarrying Rough stone and Gravel.
2. A safety distance of 7.5 meters should be provided to the adjacent patta lands while quarrying operation.
3. The applicant should fix the boundary pillars of the lease applied area along with DGPS (Differential Global Positioning System) Survey by a Government Authorized Agency.

Special Conditions:

1. A safety distance of 50 meters should be provided to the Kuttai on remaining part of the applied area in S.F.No. 822/2A situated on the Southern side and no hindrance shall be caused to the Kuttai while quarrying operation.

This Mining Plan along with Progressive quarry closure Plan is prepared in full consent with **Thiru. K. Mahalingam**, S/o. Kanthasamy, residing at No. 8/129, Madheshwarar Kovil Thottam, Kuttigoundenpathy, Kumittipathy Post, Coimbatore District, Tamil Nadu State – 641 032 for his proposed Rough stone and Gravel quarry over an extent 3.01.0 Hectares of patta lands in S.F.Nos. 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and 824/1A of Sokkanur Village, Kinathukadavu Taluk, Coimbatore 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.

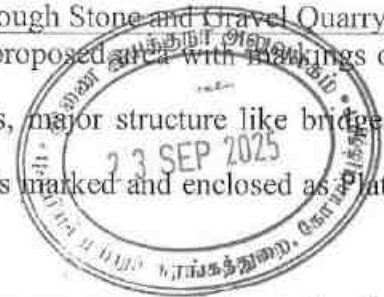
In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12-13 of 2011 in Special Leave Petition SLP (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 “All mining lease area in respect of minor mineral mining leases and ≤ 250 ha mining lease area in respect of major mineral mining lease other than coal” would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field investigation was carried out by the Qualified Person and his Team as on 05.04.2025.

Short Notes of Mining plan:

- a. Village Panchayat - Sokkanur
- b. Panchayat Union - Kinathukadavu
- c. Total extent of the lease applied area is 3.01.0 Ha.
- d. Topography of the area - Flat topography.
- e. The Estimated Geological Resources are **28,97,125 MT** of Rough stone, **1,20,400 MT** of Weathered Rock and **1,20,400 MT** of Gravel in the entire area.
- f. The Tentative mineable reserves have been estimated as **6,89,219 MT** of Rough stone, **65,180 MT** of Weathered Rock and **68,056 MT** of Gravel in the entire area.
- g. The proposed quantity of reserves/ (level of production) to be mined are as **6,89,219 MT** of Rough stone for five years, **65,180 MT** of Weathered rock and **68,056 MT** of Gravel for first three years in the entire area.
- h. Proposed Depth of mining = 39m – BGL (2m Gravel + 2m Weathered + 35m Rough stone)
- i. Mining Plan period = Five Years.
- j. It is a fresh lease applied area, at present the area is virgin. Hence, no existing pit.
- k. 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,
- l. 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.
- m. No trees will be uprooted due to this quarry operation.
- n. The approach road from the main road to quarry will be constructed and same has been maintained in a good condition for the haulage of quarry materials and machineries.
- o. There is No Export of this Rough stone and Gravel.

- p. 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.
- q. The lease applied area is bounded by twenty six corners; the corners are designated as 1 – 26 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.
- r. 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.
- s. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,
- i) Protected area under wild life protection ACT 1972,
 - ii) Critically polluted areas as identified by CPCB,
 - iii) Notified Eco sensitive areas.
- t. The Kerala - Tamil Nadu inter state Boundary located on 600m Southwestern side of the lease applied area.
- u. There is no waste anticipated during entire quarry operation. Hence, waste dump is not proposed in the lease applied area.
- v. Around 31 employees are proposed to deploying the quarrying operation.
- w. Total Cost of the project is about **Rs. 1,18,00,000/-**.



**1.0 GENERAL INFORMATION****1.1 Name of the Applicant with Address:**

Name : **Thiru. K. Mahalingam,
S/o. Kanthasamy**

Address : **No. 8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy, Kumittipathy Post,
Coimbatore District**

State with PIN Code : **Tamil Nadu State – 641 032.**

Mobile No. : **+91 96008 15888**

Aadhaar No. : **5798 9699 6314**

E-mail ID : **mahalingamkanthasamy69@gmail.com.**

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:

Five years as mentioned in Precise area Communication letter.

1.5 Name and address of the Qualified Person who preparing the Mining Plan:

Name : **S. Ilavarasan, M.Sc.,
Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)**

Address : **No. 289, Shanthi Nagar First Cross,
Chinnakollappatti, Kannankurichi post,
Salem District – 636 008.**

Mobile No. : **+91 94880 69569**

E-mail id : **ilageo.s@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 and the Rough stone is clearly inferred from the nearby existing pit and out crops. 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, Coimbatore District vide **R.C.No.748/Mines/2022, Dated: 06.03.2025** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant's production schedule.

2.0 LOCATION AND ACCESSIBILITY:**2.1. Details of the area with location map:**

The lease applied area is located about 22km Southwestern side of Coimbatore town, 12km Western side of Kinathukadavu town and 4km Western side of Sokkanur Village.

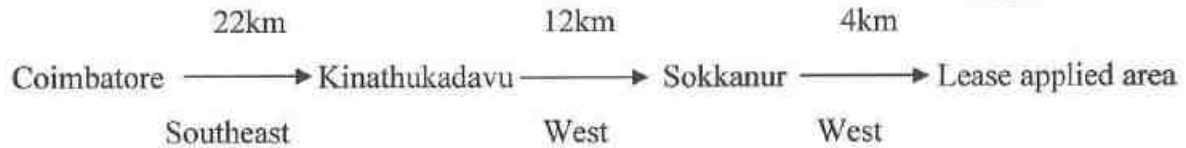
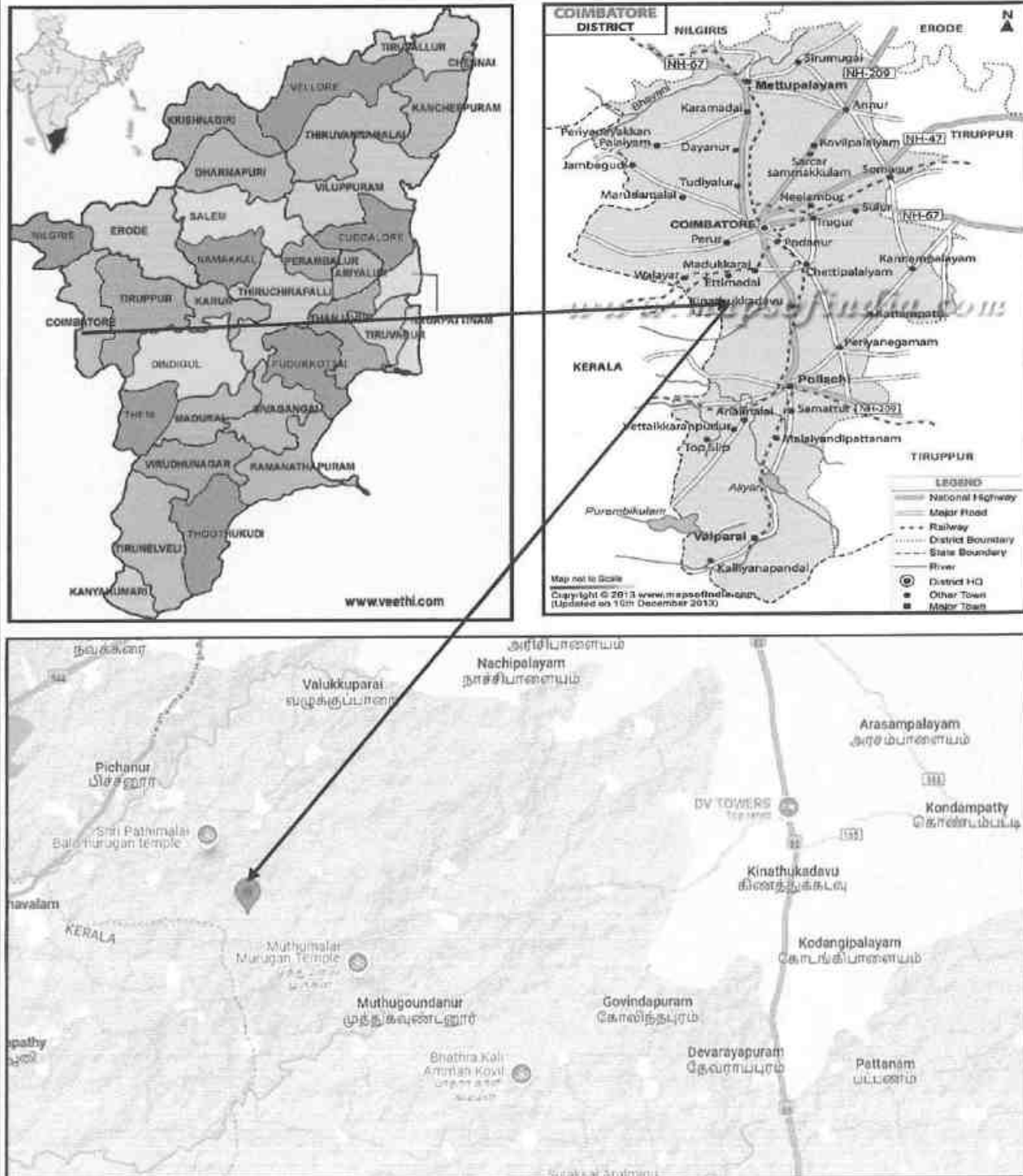
**Location Map of the Lease Applied area**

Table - I

District	Taluk	Village	S.F. No.	Area (Ha.)	Patta no.
Coimbatore	Kinathukadavu	Sokkanur	816 (Part)	0.67.5	2445
			818	0.25.0	
			819/1	0.54.0	
			822/1 (Part)	0.32.5	
			822/2A(Part)	0.19.5	
			824/1A	1.02.5	
Total				3.01.0	

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 lands, registered in the name of the applicant (Thiru. K. Mahalingam) vide patta No. 2445 (Refer Annexure Nos. IV to VI).

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

The approach road is situated on the Eastern side, which is connects to the Village Road situated at 10m on the Eastern 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 will be constructed and the same will be utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Coimbatore - Palakkad which is located at 7.9km 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: 58B/13 Latitude between: 10°48'33.40"N to 10°48'40.79"N and Longitude between: 76°54'16.85"E to 76°54'27.67"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 western side and altitude of the area is 248m above from Mean Sea Level. The area is covered by 2m thickness of Gravel, 2m thickness of Weathered formation and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit and rock exposure.

The Water level in the surrounding area is 105m below from general ground profile. The Normal rainfall is about 902mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with accumulation of recent quaternary formation. On regional scale of the Charnockite body is $N45^{\circ}E - S45^{\circ}W$ with dipping towards $SE60^{\circ}$.

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 Coimbatore 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 and rock exposure adjacent on the southwestern side.

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, one section drawn Length wise as (X-Y, X1-Y1 & X2-Y2) and another two cross sections drawn Width wise (A-B, C-D & E-F) to cover the maximum area considered for lease upto 39m 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. No Exploration has been carried out.

Estimation of Geological Resources (Plate No. IID):

The Geological Resources of Rough Stone and Gravel are estimated upto a depth of 39m [2m Gravel + 2m Weathered Rock + 35m Rough stone].

The total Geological Resources are estimated by area method. The total geological resources are given table below:

TABLE - 2

GEOLOGICAL RESOURCES									
Area (Ha)	Area in Sq.m/Ha (m)	Depth (m)	Rough stone (m ³) 100%	Weathered Rock (m ³)	Gravel (m ³)	Bulk Density	Rough stone in (MT) 100%	Weathered Rock (MT)	Gravel (MT)
3.01.0	10000	2	-	-	60200	2	-	-	120400
3.01.0	10000	2	-	60200	-	2	-	120400	-
3.01.0	10000	35	1053500	-	-	2.75	2897125	-	-
Total			1053500	60200	60200	-	2897125	120400	120400

Estimated Geological Resources of Rough Stone : 28,97,125 MT

Estimated Weathered Rock

: 1,20,400 MT

Estimated Gravel

: 1,20,400 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 - 3

MINABLE RESERVES											
Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (m ³) 100%	Weathered Rock (m ³)	Gravel (m ³)	Bulk Density	Rough stone (MT) 100%	Weathered Rock (MT)	Gravel (MT)
XY-AB	i	51	72	2	-	-	7344	2	-	-	14688
	ii	49	70	2	-	6860	-	2	-	13720	-
	iii	45	66	5	14850	-	-	2.75	40838	-	-
	iv	35	56	5	9800	-	-	2.75	26950	-	-
	v	25	46	5	5750	-	-	2.75	15812	-	-
	vi	15	36	5	2700	-	-	2.75	7425	-	-
Total=					33100	6860	7344		91025	13720	14688
X1Y1-CD	i	94	97	2	-	-	18236	2	-	-	36472
	ii	93	95	2	-	17670	-	2	-	35340	-
	iii	91	91	5	41405	-	-	2.75	113864	-	-
	iv	86	81	5	34830	-	-	2.75	95782	-	-
	v	81	71	5	28755	-	-	2.75	79076	-	-
	vi	76	61	5	23180	-	-	2.75	63746	-	-
	vii	71	51	5	18105	-	-	2.75	49789	-	-
	viii	58	41	5	11890	-	-	2.75	32698	-	-
	ix	42	31	5	6510	-	-	2.75	17902	-	-
Total=					164675	17670	18236		452856	35340	36472
X2Y2-EF	i	66	64	2	-	-	8448	2	-	-	16896
	ii	65	62	2	-	8060	-	2	-	16120	-
	iii	63	58	5	18270	-	-	2.75	50243	-	-
	iv	58	48	5	13920	-	-	2.75	38280	-	-
	v	53	38	5	10070	-	-	2.75	27692	-	-
	vi	48	28	5	6720	-	-	2.75	18480	-	-
	vii	43	18	5	3870	-	-	2.75	10643	-	-
Total=					52850	8060	8448		145338	16120	16896
Grand Total=					250625	32590	34028		689219	65180	68056



The Tentative mineable reserves have been estimated as 6,89,219 MT of Rough Stone, 65,180 MT of Weathered Rock and 68,056 MT of Gravel at the rate of 100% recovery upto a depth of 39m (2m Gravel + 2m Weathered Rock + 35m Rough stone) below from the ground profile.



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.

Year wise Development and Production

TABLE-4

YEARWISE RESERVES													
Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (m³) 100%	Weathered Rock (m³)	Gravel (m³)	Bulk Density	Rough stone (MT) 100%	Weathered Rock (MT)	Gravel (MT)	
I	XY-AB	i	51	72	2	-	-	7344	2	-	-	14688	
		ii	49	70	2	-	6860	-	2	-	13720	-	
		iii	45	66	5	14850	-	-	2.75	40838	-	-	
		iv	35	56	5	9800	-	-	2.75	26950	-	-	
		v	25	46	5	5750	-	-	2.75	15812	-	-	
	X1Y1-CD	i	36	97	2	-	-	6984	2	-	-	13968	
		ii	34	95	2	-	6460	-	2	-	12920	-	
		iii	30	91	5	13650	-	-	2.75	37538	-	-	
		iv	20	81	5	8100	-	-	2.75	22275	-	-	
		v	10	71	5	3550	-	-	2.75	9762	-	-	
II	X1Y1-CD	Total=					13320	14328	-	153175	26640	28656	
		i	42	97	2	-	-	8148	2	-	-	16296	
		ii	42	95	2	-	7980	-	2	-	15960	-	
		iii	42	91	5	19110	-	-	2.75	52553	-	-	
		iv	42	81	5	17010	-	-	2.75	46777	-	-	
		v	42	71	5	14910	-	-	2.75	41003	-	-	
		Total=					7980	8148	-	140333	15960	16296	
		i	16	97	2	-	-	3104	2	-	-	6208	
		ii	17	95	2	-	3230	-	2	-	6460	-	
		iii	19	91	5	8645	-	-	2.75	23774	-	-	
III	X1Y1-CD	iv	24	81	5	9720	-	-	2.75	26730	-	-	
		v	29	71	5	10295	-	-	2.75	28311	-	-	
		i	66	64	2	-	-	8448	2	-	16120	-	
		ii	65	62	2	-	8060	-	2	-	-	-	
		iii	63	58	5	18270	-	-	2.75	50242	-	-	
	X2Y2-EF	iv	58	48	5	13920	-	-	2.75	38280	-	-	
		Total=					11290	11552	-	167337	22580	-	
		சென்னை மாநகராட்சி, இலாப நோக்கமின்றி செயல்பாட்டில் உள்ளது. (சென்னை, தமிழ்நாடு) 23 SEP 2025 16896											

IV	XY-AB	vi	15	36	5	2700	-	-	2.75	7425	-	-
	X1Y1-CD	vi	76	61	5	23180	-	-	2.75	63745	-	-
		v	53	38	5	10070	-	-	2.75	27693	-	-
	X2Y2-EF	vi	48	28	5	6720	-	-	2.75	18480	-	-
		vii	43	18	5	3870	-	-	2.75	10642	-	-
					Total=	46540	-	-	-	127985	-	-
V	X1Y1-CD	vii	71	51	5	18105	-	-	2.75	49789	-	-
		viii	58	41	5	11890	-	-	2.75	32698	-	-
		ix	42	31	5	6510	-	-	2.75	17902	-	-
							Total=	36505	-	-	100389	-
Grand Total=						250625	32590	34028	-	689219	65180	68056

The Recoverable reserves have been computed as **6,89,219 MT** of Rough stone, **65,180 MT** of Weathered Rock and **68,056 MT** of Gravel at 100% recovery for five years upto a depth of 39m below from the ground level (Refer Plate No. III).

The peak production capacity in the quarry is **1,67,337 MT** of Rough stone, **26,640 MT** of Weathered Rock and **28,656 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 the lease period	=	89,219 MT
Total Excavation during the lease period (RS + WR + Gravel)=	=	8,22,455 MT
Maximum material handling on one year		
(RS 1,67,337 MT + WR 22,580 MT + Gravel 23,104 MT)	=	2,13,021 MT
Hence maximum lorry loads per day	=	2,13,021 MT/30 Ts
	=	7,101 lorry loads
	=	7,101/300 Days
	=	24 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 – 5

I. DRILLING MACHINE:

S. No.	Type	Nos.	Dia Hole mm	Size Capacity	Motive power
1	Hand Jackhammer	7	32	1.2m to 2.0m	Air Compression
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	Tipper	3	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 based 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 – 6

Section	Length (m)	Width (m)	Depth (m) (Max.)
XY-AB	51	69	24m – BGL
X1Y1-CD	123	97	39m – BGL
X2Y2-EF	66	64	29m – 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 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.

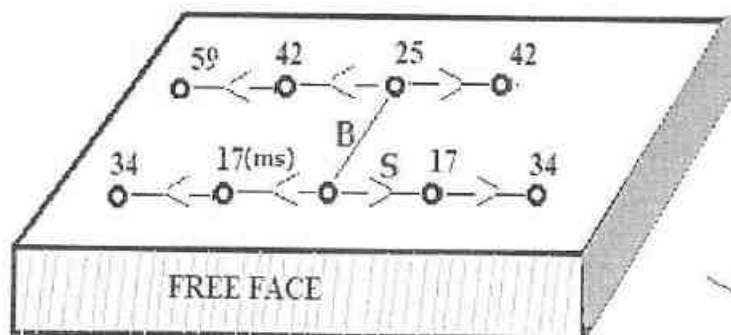
The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).

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 stemming. The quarrying operation is proposed to be carried out by Jack hammer drilling and blasting of shattering effect for loosening 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 a 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)	=	186 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 adopted 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	= 1,67,337 Tons
No of Holes	= 186 Holes
Yield	= 558 Tons
Powder factor	= 6 Tons/ Kg of explosives
Maximum explosive required	= 93Kg-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 – 7

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)
93	1	93	186	186	1 (2 Holes)	960	0.318

From the above table, the charge per blast of 93kg 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 based on the site condition under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

5.4 Storage and safety measures to be taken while blasting:

The applicant will engage 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 105m 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 – 8

Type	Distance & Direction	Location
Bore Well	1.3km Southeast side	10°48'02.31"N 76°54'53.45"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 10HP 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 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 - 9

S.No.	Description - Nearest	Particulars	Aerial Distance & Direction
1	National Highway	(NH-544) Coimbatore – Palakkad	6.7km – NW
2	State Highways	(SH-26) Ettimadai – Kozhinjampara	4km – NW
3	Railway station	Walayar	8.4km – NW
4	Airport	Coimbatore	28.8km – NE
5	Town	Kinathukadavu	12km – East
6	Government School	Sokkanur Govt. School	2.5km – SE
7	Government Hospital	Kinathukadavu	12.3km – East
8	Habitation	960m – SE	
9	Reserved Forest	Solakari Reserve Forest – 7.5km NW.	
10	Water Bodies	Odai passing on the northwestern side of the lease applied area, hence 50m safety distance has been provided. Kuttai – South side – 50m.	
11	Defence Installation/ Historical Monuments/ Archaeological	Nil within 500m radius.	
12	Interstate Boundary	Around 600m – SW (Kerala State border)	
13	Critically Polluted areas identified by the CPCB	Around 15.8km – NE (Coimbatore)	

14	Protected areas Notified under wildlife (Protection) Act, 1972.	Around 28.6 km – South (Indira Gandhi Wild 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.Nos. 820, 821, 824/1B East - S.F.No. 824/1B South - S.F.Nos. 823, 822/1, 822/2A, 817 and 816 West - S.F.No. 815 and 819/2																							
19	Adjacent Patta lands / Govt. Land	<table border="1"> <thead> <tr> <th>Direction</th><th>Classification</th><th>Safety Distance</th></tr> </thead> <tbody> <tr> <td rowspan="2">North</td><td>Patta land</td><td>7.5m</td></tr> <tr> <td>Village road</td><td>10m</td></tr> <tr> <td rowspan="2">East</td><td>Patta land</td><td>7.5m</td></tr> <tr> <td>Village road</td><td>10m</td></tr> <tr> <td rowspan="2">South</td><td>Patta land</td><td>7.5m</td></tr> <tr> <td>Govt. Land</td><td>10m</td></tr> <tr> <td rowspan="2">West</td><td>Odai</td><td>50m</td></tr> <tr> <td>Govt. Land</td><td>10m</td></tr> </tbody> </table> (Refer Plate No. II):	Direction	Classification	Safety Distance	North	Patta land	7.5m	Village road	10m	East	Patta land	7.5m	Village road	10m	South	Patta land	7.5m	Govt. Land	10m	West	Odai	50m	Govt. Land	10m
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	Govt. Land	10m																							
West	Odai	50m																							
	Govt. Land	10m																							

9.2 Employment potential (skilled, semi-skilled, un skilled):

TABLE – 10

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	-	3	3
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	14	14
c) Unskilled			
Security	-	1	1
Labour & Helper	-	2	2
Co-operator and Cleaner	-	5	5
Total	-	31	31

The proposed output per man shift:

TABLE – II

Annual Peak Production of Rough stone	1,67,337 MT
No. of days likely to be worked	300 days
Average production per day	558 MT
O/S = Average Production per day / Average employment per day	558 / 31 = 18 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 Sokkanur village which is located about 4km on the Eastern 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 Lessee's vehicle. Hospital is available in Kinathukadavu located at 12.3km on the Eastern side of the area.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in Lessee'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. iv. Excavated benches shall be developed by planting with grasses, herbs and shrubs of local species to prevent soil erosion and landslide.



	c) Propagation of foreign material like polythene bag or undecomposed waste materials dumping.	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 and catchment of nearby water bodies (Odai) will interrupting during rainy season due to modification of topography. ii. Surface water bodies (Odai and Kuttai) will be contaminated due to dust propagation and machinery and vehicular emissions.	i. The constructed Garland drain all along the boundary barrier will be maintained during entire lease period to prevent surface runoff rain water entering into the pit. ii. Greenbelt will be developed in the safety zone with thick long leave plants to arrest the fugitive dust and vehicular emissions propagation on the surrounding water bodies. 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 waste water will be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pit during rain from seepage water. v. The mine pit water collected due to rain and seepage will be utilized for water spraying on the haul Roads and watering for plantations, if excess water availed the same will be drained in to the Odai. vi. 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. 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 (PM₁₀ & PM_{2.5}), Nitrogen oxides and Sulphur dioxide (NO₂ & SO₂). 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. Greenbelt will be developed in the safety zone which will act as acoustical 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. 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, Mahogany, Kadamba, Teak, Cocos nucifera, 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.



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 31 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.
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**11.1 Environmental impact assessment statement describing impact of mining on the next Five 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 39m 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 1200 tree saplings (Area 10,680 m²) also the applicant proposed to plant 150 tree saplings in the quarried out top benches and 200 saplings on approach road and maintain at least 1300 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 – 12

Year	No. of trees proposed to be planted	Area to be covered (m ²).	Survival (%)	Name of the species	No. of trees expected to be grown
I	240	2136	80%	Ncem, Pongamia Pinnata, Cordia dichotoma, Mantharai, etc.,	192
II	240	2136	80%		192
III	240	2136	80%		192
IV	240	2136	80%		192
V	240	2136	80%		192

11.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period:

TABLE – 13

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, <table><tr><td>Area (Ha)</td><td>Cost / Ha.</td><td>Total/Rs.</td></tr><tr><td>3.01.0</td><td>12,35,500</td><td>37,18,855</td></tr></table> Total Land Cost (Round off) = Rs.37,19,000/- (source : https://tnreginet.gov.in/portal/)	Area (Ha)	Cost / Ha.	Total/Rs.	3.01.0	12,35,500	37,18,855	37,19,000
Area (Ha)	Cost / Ha.	Total/Rs.						
3.01.0	12,35,500	37,18,855						
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).	50,00,000						
iii) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	5,00,000						
iv) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around.	1,00,000						
v) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	1,90,000						
vi) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	1,00,000						
vii) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.	1,00,000						
viii) CCTV arrangements.	Installation of CCTV cameras in the quarry area.	70,000						
Total Cost			97,79,000					

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 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 1140m x Rs. 300/meter).	3,42,000
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 980m x Rs. 300/meter).	2,94,000
5.	First aid room & accessories	50,000
6.	Dust extractor unit for Jackhammer (7 Nos.)	1,75,000
7.	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 (150 saplings x Rs. 200/sapling).	30,000
	Greenbelt development will be carried out on approach road; the cost would be around (200 saplings x Rs. 200/sapling).	40,000
Total EMP Cost (B)		20,21,000
Description		Cost (Rs.)
A. Operational Cost		97,79,000
B. EMP Cost		20,21,000
Total Project Cost (A+ B)		1,18,00,000
The applicant Indents to involve Corporate Environment Responsibilities (CER) activity as recommended by the competent authority @ 2% from the total Project Cost. If competent authority is directed to modify the CER cost and mode of utilization of the cost, the applicant will ensure to implement the same.		
The total cost would be around one crore eighteen lakhs 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.

- Barbed wire fencing will be constructed around the quarry.
- Benches will be smoothening.
- Quarry will be closed & sentries will be posted round the clock.
- Green belt development will be maintained.
- Machineries will be removed from pit and engaged in another site.

12.2 Present and Post Land use pattern:

TABLE – 14

Description	Present area (Ha)	Area at the end of the lease period (Ha)
Area Under Quarrying	Nil	1.90.00
Infrastructure	Nil	0.02.00
Roads	Nil	0.02.00
Green Belt	Nil	1.06.80
Unutilized Area	3.01.00	0.00.20
Grand Total	3.01.00	3.01.00

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 : **S. Ilavarasan, M.Sc.,**
Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : No. 289, Shanthi Nagar First Cross,
Chinnakollappatti, Kannankurichi post,
Salem District – 636 008.

Mobile No. : +91 94880 69569

E-mail id : ilageo.s@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 to unauthorized 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 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 – 15

ACTIVITY		YEARS					RATE	COST (Rs.)	
		I	II	III	IV	V			
Plantation under safety zone	Nos	240	240	240	240	240	Rs.200 Per sapling	2,40,000	
	Cost	48,000	48,000	48,000	48,000	48,000			
Plantation in quarried out top bench and Approach road	Nos	Approach Road			Benches				70,000
		100	100	-	75	75			
	Cost	20000	20000	-	15000	15000			
Barbed Wire Fencing (1140 Mtrs)		3,42,000	-	-	-	-	Rs.300 Per Meter	3,42,000	
Construction of Garland Drain (980Mtrs)		2,94,000	-	-	-	-	Rs.300 Per Meter	2,94,000	
Total								9,46,000	

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 Mining 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


S. Ilavarasan, M.Sc.,

Qualified Person

Place: Salem

Date: 05.04.2025

This Mining Plan is Approved
subject to the conditions / stipulation
& indicated in the Mining Plan Approval
Letter No: RC No. 1748/MIN/2021 dt. 23.09.25
office of the A.D, Geology & Mining Coimbatore

This Mining Plan is Approved based on the
incorporation of the particulars specified
in the letter of the commissioner of Geology
and Mining, Chennai ref No. 3863/LC/2012
Dated 19.11.2012 and subjected to further
fulfillment of the condition laid down under
Tamilnadu Minor Mineral Concession Rules 1959


THE JOINT DIRECTOR
(ADDL. CHARGE)
DEPARTMENT OF GEOLOGY & MINING
COLLECTORATE
COIMBATORE- 641 018

CS
23/10/2025

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





ந.க.எண்.748/கனிமம்/2022

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - கோயம்புத்தூர் மாவட்டம் - கிணத்துக்கடவு வட்டம் - சொக்கனூர் கிராமம் - புல எண்கள்.81 மற்றும் சில - திரு.மு.மகாலிங்கம் என்பவர் குவாரி குத்தகை உரிமம் கோரிய விண்ணப்பம் - புல எண்கள். 816(பகுதி)-ல் 0.67.5 ஹெக்டேர், 818-ல் 0.25.0 ஹெக்டேர், 819/1-ல் 0.54.0 ஹெக்டேர், 822/1(பகுதி)-ல் 0.32.50 ஹெக்டேர், 822/2A(பகுதி)-ல் 0.19.50 ஹெக்டேர், 824/1A-ல் 1.02.50 ஹெக்டேர் ஆக மொத்தம் 3.01.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க உகந்த புலம் என அறிவிப்பு செய்யப்படுகிறது - ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் துறை தடையின்மை சான்று பெற்று சமர்ப்பிக்க அறிவுறுத்துதல் - தொடர்பாக.

- பார்வை: 1. திரு.K.மகாலிங்கம், த.பெ. கந்தசாமி, 8/129, மாதேஸ்வரர் கோவில் தோட்டம், குட்டிகவுண்டன்பதி, குமிட்டிபதி அஞ்சல், கோயம்புத்தூர் மாவட்டம் என்பவரது விண்ணப்பம் நாள்: 29.06.2022 மற்றும் 28.07.2023
2. இவ்வலுவலக கடிதம் இதே எண். நாள்: 11.08.2023.
3. சார் ஆட்சியர், பொள்ளாச்சி அவர்களின் கடித ந.க.எண். 3084/2022/அ2 நாள்: 20.10.2023.
4. உதவி புலியியலாளர், புலியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் தணிக்கை அறிக்கை நாள்: 03.11.2023.
5. மாவட்ட ஆட்சியரின் ஒப்புதல் பெறப்பட்ட குறிப்பு கோப்பு இதே எண் மற்றும் நாள்: 28.11.2023.
6. மாவட்ட ஆட்சியர், கோயம்புத்தூர் அவர்களின் ஒப்புதல் பெற்ற குறிப்பு கோப்பு பக்க எண்.10 நாள்: 23.01.2024.
7. இவ்வலுவலக கடிதம் இதே எண் நாள்: 06.02.2024.
8. சார் ஆட்சியர், பொள்ளாச்சி அவர்களின் அறிக்கை மூ.மூ.622/2024/அ2 நாள்: 13.06.2024
9. மாவட்ட ஆட்சியரின் குறிப்பு கோப்பு நாள்: 17.10.2024.
10. மாவட்ட ஆட்சியரின் ஒப்புதல் நாள்: 07.02.2025

பார்வை 1-ல் காணும் திரு.K.மகாலிங்கம் என்பவரது விண்ணப்பத்தில் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், சொக்கனூர் கிராமம், புல எண்கள். 816 (0.96.5), 818 (0.25.0), 824/1A (1.02.5), 824/1B (0.11.0), 819/1 (0.54.0), 822/1 (0.57.0) மற்றும் 822/2 (0.57.5) மொத்த பரப்பு 4.03.5 ஹெக்டேரில்

சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க
கோரியிருந்தார்.



மேற்கண்ட விண்ணப்பம் தொடர்பாக பார்வை 2-ல் கிராவல் இவ்வலுவலக
கடிதம் மூலம் அறிக்கை கோரியதில் சார் ஆட்சியர், பொன்னாச்சி அவர்கள் மேற்படி
புலத்தினை தணிக்கை செய்து பார்வை 3-ல் கிராவல் அறிக்கையினை
சமர்ப்பித்திருந்தார். அதில், கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம்,
சொக்கனூர் கிராமத்தை சேர்ந்த திரு.அன்பரசு, த/பெ.பழனிச்சாமி என்பவருக்கு
பட்டா எண்.1855-க்கு கட்டுப்பட்ட புல எண். 816-ல் 0.96.5 புஞ்சை ஹெக்டேர், புல
எண்.818-ல் 0.25.0 புஞ்சை ஹெக்டேர், 824/1A-ல் 1.02.5 புஞ்சை ஹெக்டேர், புல
எண்.824/1B-ல் 0.11.0 புஞ்சை ஹெக்டேர் பூமியும், பட்டா எண்.1856-க்கு
கட்டுப்பட்ட புல எண்.819/1-ல் 0.54.0 நஞ்சை ஹெக்டேர் பூமியும், புல எண்.822/1-ல்
0.57.0 நஞ்சை ஹெக்டேர், பட்டா எண்.1870-க்கு கட்டுப்பட்ட புல எண்.822/2-ல் 11
சென்ட் நீங்கலாக 0.57.5 புஞ்சை ஹெக்டேர் பூமியும் தனியாக பாத்தியப்பட்டுள்ளது
என்றும், மேற்படி புலங்களை மனுதாரர் திரு.K.மகாலிங்கம் என்பவர் திரு.அன்பரசு
என்பவரிடம் இருந்து குத்தகைக்கு பெற்று குவாரி குத்தகை உரிமம் கோரி
விண்ணப்பித்துள்ளார் என்றும் தெரிவித்துள்ளார்.

மேலும், மனுதாரர் குவாரி குத்தகை உரிமம் கோரும் புலங்களின் நான்கு
எல்லைகள் பின்வருமாறு

புல எண்.816

வடக்கு: புல எண்.819
தெற்கு: புல எண்.817
கிழக்கு: புல எண்.817 மற்றும் 819
மேற்கு: புல எண்.815

புல எண்.818

வடக்கு: புல எண்.819
தெற்கு: புல எண்.817
கிழக்கு: புல எண்.822
மேற்கு: புல எண்.817

புல எண்.824/1A

வடக்கு: புல எண்.824/1B
தெற்கு: புல எண்.823
கிழக்கு: புல எண்.824/2 (வழித்தடம்)
மேற்கு: புல எண்.822

புல எண்.824/1B

வடக்கு: புல எண்.821
தெற்கு: புல எண்.824/1A
கிழக்கு: புல எண்.824/2 (வழித்தடம்)



மேற்கு: புல எண்.821

புல எண்.822/1 மற்றும் 822/2

வடக்கு: புல எண்.819 மற்றும் 8

தெற்கு: புல எண்.822/3 மற்றும் 822/4

கிழக்கு: புல எண்.823 மற்றும் 824

மேற்கு: புல எண்.817 மற்றும் 818 உள்ளது எனவும்,

மேற்படி புலத்தின் அருகில் தெற்கு மற்றும் மேற்கு பகுதியில் புறம்போக்கு பாறைகள் மற்றும் வடமேற்கு பகுதியில் 300 மீ தொலைவில் ஓடை புறம்போக்கு அமைந்துள்ளது என தெரிவித்துள்ளார். குவாரி உரிமம் கோரும் பிரஸ்தாப புலத்தில் மாநில நெடுஞ்சாலைகளோ, புரதானச்சின்னங்ககோ, கோவில்களோ, தேவாலயங்களோ, மசூதிகளோ ஏதுமில்லை என்றும், 300 மீ சுற்றளவில் கிராம நத்தமோ, அங்கீகரிக்கப்பட்ட வீட்டு மனைகளோ இல்லை என்றும், புல எண்.824/1A-ல் கிழக்கு பகுதியில் உயர்மின்னழுத்த கம்பி 3 மின்கம்பங்கள் வழியாக செல்கிறது என்றும், மேற்படி மின்கம்பங்களை மாறுதல் செய்ய தமிழ்நாடு மின்பகிர்மான கழகத்திடம் மனுதாரர் மனு செய்துள்ளதாக தெரிவித்ததின் பேரில் மனுதாரரிடமிருந்து உரிய ஆவணங்கள் பெற்று இணைக்கப்பட்டுள்ளது என்றும் தெரிவித்துள்ளார்.

மேலும், மேற்படி உரிமம் கோரும் பிரஸ்தாப புலத்திற்கு அருகாமையில் உள்ள பட்டாதாரர்கள் மேற்படி குவாரியால் தங்களின் விலைநிலங்களுக்கு பாதிப்பு உள்ளதாக தெரிவித்துள்ளனர் என்றும், மேற்படி குவாரி அமையவுள்ள இடத்திற்கு அருகில் வசிப்பவர்களிடம் ஆட்சேபனை ஏதும் இருப்பின் தெரிவிக்க கோரி அ1 அறிவிப்பு செய்யப்பட்டது என்றும், நாளது தேதி வரை மேற்படி ஆட்சேபனை தவிர வேறு ஆட்சேபனை ஏதும் வரப்பெறவில்லை என்றும் தெரிவித்துள்ளார்.

மேலும், விண்ணப்ப புலங்களில் புல எண்.819/1 (0.54.0) மற்றும் 822/1 (0.57.0) ஆக மொத்தம் 1.11.0 ஹெக்டேர் காலைகள் நஞ்சை பூமி என்பதால் மாவட்ட ஆட்சியரிடம் தவிர்க்க இயலாத சான்று (Inevitability certificate) பெறப்பட வேண்டும் என்பதால் மேற்கண்ட காலைகள் நீங்கலாக மீதமுள்ள காலைகளுக்கும், புல எண்.824/1யு-ல் கிழக்கு பகுதியில் செல்லும் உயர்மின்னழுத்த கம்பங்களுக்கு பாதிப்பு ஏற்படாதவாறு உரிய விதிகளின் படி போதிய இடைவெளிவிட்டு செயல்பட வேண்டும் என்ற நிபந்தனைகளுடன் தமிழ்நாடு சிறுகனிமங்கள் சலுகை விதிகள் 1959-ல் வகுத்தளிக்கப்பட்டுள்ள நிபந்தனைகளை கடைபிடிக்க வேண்டும் என்ற நிபந்தனைகள் அடிப்படையில் மனுதாரர் திரு.K.மகாலிங்கள் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி செய்ய குத்தகை உரிமம் வழங்க பரிந்துரைத்துள்ளார்.

இந்நிலையில், பட்டாதாரர் நஞ்சை புலங்களான 819/1 ஆகியவற்றின் நஞ்சை வகைபாட்டிலிருந்து புஞ்சை வகைபாடாக மாற்றம் செய்து கோரியபடிமூலம் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணைகள் ந.க.எண்.152339/2022/இ1 நாள்: 10.04.2023-ன் படி உத்தரவிடப்பட்டுள்ளது. மேற்கண்ட உத்தரவில் நன்செய் வகைபாட்டிலிருந்து புன்செய்யாக மாற்றம் செய்யப்பட்டுள்ள புலங்களை விவசாயம் தவிர இதர காரியங்களுக்கு பயன்படுத்தும் நேர்வுகளில் மாவட்ட ஆட்சியர்/உரிய துறையின் முன்அனுமதி பெற வேண்டும் என்ற நிபந்தனையுடன் உத்தரவிடப்பட்டுள்ள நகலுடன் பார்வை 4-ல் காணும் கடிதத்தில் மேற்படி வட்டம், மேற்படி கிராம புல எண்கள். 816(பகுதி)-ல் 0.67.5 ஹெக்டேர், 818-ல் 0.25.0 ஹெக்டேர், 819/1-ல் 0.54.0 ஹெக்டேர், 822/1(பகுதி)-ல் 0.32.50 ஹெக்டேர், 822/2A(பகுதி)-ல் 0.19.50 ஹெக்டேர், 824/1A-ல் 1.02.50 ஹெக்டேர் ஆகியவற்றில் மொத்தம் 3.01.00 ஹெக்டேர் பரப்பளவிற்கு மட்டும் குத்தகை உரிமம் வழங்குமாறு கோரியதை தொடர்ந்து திருத்திய பரிந்துரை அறிக்கை அனுப்புமாறு சார் ஆட்சியர், பொள்ளாச்சி அவர்களிடம் பார்வை 5-ல் காணும் கடிதத்தின் மூலம் கேட்டுக்கொள்ளப்பட்டது.

சார் ஆட்சியர், பொள்ளாச்சி அவர்களின் பார்வை 6-ல் காணும் அறிக்கையில் கிணத்துக்கடவு வட்டம், சொக்கனூர் கிராமம், புல எண். 816-ல் 0.96.50 பு.ஹெக்டேர், புல எண். 818-ல் 0.25.0 பு.ஹெக்டேர், புல எண்.819/1-ல் 0.54.0 பு.ஹெக்டேர், புல எண். 822/1-ல் 0.57.0 பு.ஹெக்டேர், புல எண்.822/2A-ல் 0.57.5 பு.ஹெக்டேர், 824/1A-ல் 1.02.5 பு.ஹெக்டேர், புல எண்.824/1B-ல் 0.11.0 பு.ஹெக்டேர் என ஆக மொத்தம் 4.03.50 பு.ஹெக்டேர் பரப்புள்ள பட்டா பூமியானது பட்டா எண். 2445-ன் படியும், கிராம ஆவணங்களின்படியும் கந்தசாமி கவுண்டர் மகன் திரு.K.மகாலிங்கம் என்பவருக்கு தனியாக பாத்தியப்பட்டதாகும் எனவும், மேற்கண்ட காலைகளில் 3.01.0 ஹெக்டேர் பரப்பிற்கு மட்டும் குவாரி உரிமம் கோரியுள்ளார் எனவும், மேற்படி சொக்கனூர் கிராமத்தில் "அ1" அறிவிப்பு செய்யப்பட்டதில், கிராம பொதுமக்களுக்கு எவ்வித ஆட்சேபணையும் இல்லை என பொதுமக்கள் வாக்குமூலம் அளித்துள்ளனர் எனவும், மேலும், சொக்கனூர் கிராமம் புல எண். 819/1 மற்றும் 822/1 காலைகள் நன்செய் வகைபாட்டிலிருந்து புன்செய் வகைப்பாடாக மாற்றம் செய்து கோயம்புத்தூர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறைகள் ந.க.எண். 152339/2022/இ1 நாள்: 10.04.2023-ன் படி உத்தரவு பிறப்பிக்கப்பட்டுள்ளது எனவும், மேற்படி உத்தரவில் முதல் நிபந்தனையாக நன்செய் வகைப்பாட்டிலிருந்து புன் செய் நிலமாக மாற்றம் செய்யப்பட்ட புல எண்கள் 819/1 மற்றும் 822/1 ஆகியவற்றினை விவசாயம் அல்லாத இதர காரியங்களுக்கு பயன்படுத்தும் நேர்வுகளில் மாவட்ட ஆட்சியர்/ உரிய துறையின் முன் அனுமதியைப்

பெற வேண்டும் என தெரிவிக்கப்பட்டுள்ளது எனவும், கிராம கணக்கில் உரிமம் கோரும் பிரஸ்தாப புலங்களில் மேற்படி கிராம நத்தமோ, அங்கீகரிக்கப்பட்ட கிராம நத்தமோ, மேற்படி புலத்தில் விலையுயர்ந்த மரங்கள் எதுமில்லை எனவும், நிபந்தனை ஒப்படை பூமியோ, நில உச்சவரம்பு சட்டத்திற்கு உட்பட்ட பூமி எனவும், நிபந்தனை சீர்த்திருத்தச் சட்டத்திற்கு கீழ்கவரப்பட்ட பூமியோ ஏதுமில்லை எனவும், மேற்படி காலையில் உயர் அழுத்த மற்றும் தாழ் அழுத்த மின் கம்பி பாதைகள் எதுவும் செல்வது இல்லை எனவும், மேற்படி காலைகளை ஒட்டி 5 தோட்டத்து சாளை வீடுகள் உள்ளது எனவும், குவாரி உரிமம் கோரும் புலமான 824/1A-ஐ ஒட்டி புல எண். 824/2 வண்டிப்பாதை அமைந்துள்ளது எனவும், குவாரி உரிமம் கோரும் புலமான 819/1-ஐ ஒட்டி புல எண். 814 புறம்போக்கு வாரி அமைந்துள்ளது எனவும், மேற்படி குவாரி குத்தகை உரிமம் தொடர்பாக கிருஷ்ணவேணி, க/பெ. குமாரவேல் என்பவர் ஆட்சேபணைக் கடிதம் அளித்துள்ளார் எனவும் தெரிவித்து, கிணத்துக்கடவு வட்டம், கிணத்துக்கடவு உள்வட்டம், சொக்கனூர் கிராமம், புல எண். 824/2-ல் அமைந்துள்ள வண்டிப்பாதைக்கு உரிய பாதுகாப்பு இடைவெளி விடப்பட வேண்டும் மற்றும் பிரஸ்தாப புலத்திற்கு அருகில் உள்ள புல எண். 814 நெ. காலையில் உள்ள வாரி புறம்போக்கு காலைக்கு உரிய பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி செய்ய வேண்டும் என்ற நிபந்தனைகளின் அடிப்படையிலும், 819/1 மற்றும் 822/1 நன்செய் நிலத்திலிருந்து புன் செய் நிலமாக மாறுதல் செய்யப்பட்ட புலங்களில் குவாரி பணிகள் மேற்கொள்ள உத்தரவில் உள்ள நிபந்தனைகளில் தெரிவிக்கப்பட்டுள்ளவாறு மாவட்ட ஆட்சியர்/ உரிய துறையின் அடிப்படையிலும், தமிழ்நாடு சிறு கனிமங்கள் சலுகை விதிகள் 1959-ல் வகுத்தளிக்கப்பட்டுள்ள நிபந்தனைகளை கடைபிடிக்க வேண்டும் என்ற நிபந்தனையின் அடிப்படையிலும் சொக்கனூர் கிராமம், புல எண். 816-ல் 0.67.50 பு.ஹெக்டேர், புல எண். 818-ல் 0.25.0 பு.ஹெக்டேர், புல எண். 819/1-ல் 0.54.0 பு.ஹெக்டேர், புல எண். 822/1-ல் 0.32.50 பு.ஹெக்டேர், புல எண். 822/2A-ல் 0.19.5 பு.ஹெக்டேர், 824/1A-ல் 1.02.5 பு.ஹெக்டேர் என ஆக மொத்தம் 3.01.0 பு.ஹெக்டேர் பூமிக்கு குவாரி குத்தகை உரிமம் வழங்கலாம் எனப் பரிந்துரை செய்து அறிக்கை சமர்ப்பித்துள்ளார்.

மேற்படி விண்ணப்பம் தொடர்பாக உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அவர்கள் தணிக்கை செய்து பார்வை 7-ல் காணும் அறிக்கை சமர்ப்பித்ததில் அனுமதி கோரும் புல எண்கள். 816, 818, 819/1, 822/1, 822/2A மற்றும் 824/1A ஆகியவை பட்டா எண் 2445-ன் படி திரு. K. மகாலிங்கம் (மனுதாரர்) என்பவர் பெயரில் தனிப்பட்டவாக கிராம கணக்கில் தாக்கலாகியுள்ளது எனவும், எனவே மேற்படி பூமியில் மனுதாரர் குவாரி குத்தகை உரிமம் பெற தகுதியுடையவர் ஆவார் எனவும், அனுமதி கோரும் புலங்களானது இதுநாள் வரையில் குவாரி

குத்தகை உரிமம் பெறப்படாத புதிய இனம் ஆகும் எனவும், மேலும் கோரும் புலத்தின் மேற்பரப்பில் 2 மீட்டர் வரை மண் மற்றும் சிதைந்த பாறைகளும், அதற்குக் கீழ் மெருகேற்ற இயலாத சார்னகைட் வகையைச் சார்ந்த சாதாரண வகை பாறைகளும் காணப்படுகிறது எனவும், இப்பாறைகளிலிருந்து ஜல்லி, சக்கை, கட்டுக்கல் போன்ற கற்கள் உற்பத்தி செய்து கட்டிடம் மற்றும் சாலை பணிகளுக்குப் பயன்படுத்தலாம் எனவும், அனுமதி கோரும் புல எண். 824/1A-ன் கிழக்கு மற்றும் வடக்கு பகுதியில் மின்னழுத்த கம்பி பாதை செல்கிறது எனவும், அனுமதி கோரும் புல எண். 822/2A-ன் மீதமுள்ள பட்டா பாதையில் குட்டை ஒன்று அமைந்துள்ளது எனவும், இதனை தவிர அனுமதி கோரும் புலங்களிலிருந்து 50 மீட்டர் சுற்றளவில் நிலையான அமைப்புகள் எதுவுமில்லை எனவும்,

எனவே கோயம்புத்தூர் மாவட்டம், குமிட்டிபதி அஞ்சல், குட்டிகவுண்டன்பதி, 8/129, மாதேஸ்வரர் கோவில் தோட்டம் என்ற முகவரியில் வசிக்கும் திரு.கந்தசாமி என்பவரின் மகன் திரு.க.மகாலிங்கம் என்பவருக்கு கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், சொக்கனூர் கிராமம், புல எண்கள். 816(பகுதி)-ல் 0.67.5 ஹெக்டேர், 818-ல் 0.25.0 ஹெக்டேர், 819/1-ல் 0.54.0 ஹெக்டேர், 822/1(பகுதி)-ல் 0.32.50 ஹெக்டேர், 822/2A(பகுதி)-ல் 0.19.50 ஹெக்டேர், 824/1A-ல் 1.02.50 ஹெக்டேர் ஆக மொத்தம் 3.01.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் விதி 19(1) மற்றும் 20-ன் படி 5 (ஐந்து) ஆண்டுகளுக்கு சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்குவது தொடர்பான நடவடிக்கை மேற்கொள்ளலாம் என அறிக்கை சமர்ப்பித்துள்ளார்.

1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடையூறும் இன்றி சாதாரண கல் மற்றும் கிராவல் குவாரி பணி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. அனுமதி கோரும் புல எண். 824/1A-ன் கிழக்கு மற்றும் வடக்கு பகுதியில் அமைந்துள்ள மின்னழுத்த கம்பி பாதைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
4. அனுமதி கோரும் புல எண். 822/2A-ன் மீதமுள்ள பட்டா பாதையில் அமைந்துள்ள குட்டைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குட்டைக்கு எவ்வித இடையூறும் ஏற்படா வண்ணம் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
5. மாண்பும உச்ச நீதிமன்றம் W.P.(C)No.144/2014 நாள்: 08.01.2020-ல் வழங்கப்பட்ட தீர்ப்புரையின் அடிப்படையில் குவாரிகளில் குவாரிப்பணி முடிவற்ற பின்னர் மேற்படி நிலத்தில் பாதிக்கப்பட்ட பகுதிகளை மறு சீரமைத்து தாவரங்கள் மற்றும் புல்வெளிகள் வளர்வதற்கு தகுதியுள்ள நிலமாக மாற்றப்பட



- வேண்டும்.
6. அனுமதி கோரும் புலத்தினை அரசு அங்கீகாரம் பெற்ற நிறுவனத்தினரால் DGPS (Differential Global Positioning System)-ன் படி ஆய்வு செய்யப்பட்டு ஒவ்வொரு எல்லைத் துணைகளும் நடப்படவேண்டும்.
7. குழந்தை தொழிலாளர்களை வேலைக்கு அமர்த்தல் கூடாது.

இந்நேர்வில், பார்வை 8-ல் கண்டுள்ள குறிப்பு கோப்பில் மாவட்ட ஆட்சியர் அவர்களின் அறிவுறுத்தலின் படி கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு பகுதிகளில் ஏற்கனவே போதுமான கல்குவாரிகள் உள்ளதாலும், பொது மக்கள் ஆட்சேபணை, சாலைகளின் தரம் மற்றும் இதர சூழ்நிலைகளை கருத்தில் கொண்டு புதியதாக கல்குவாரிகளுக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக தங்களது கருத்துருவினை அனுப்பும்படி பார்வை 9-ல் காணும் கடிதத்தில் சார் ஆட்சியர், பொள்ளாச்சி அவர்களின் அறிக்கை கோரப்பட்டது.

பார்வை 11-ல் காணும் சார் ஆட்சியர், பொள்ளாச்சி அவர்களது அறிக்கையில் கிணத்துக்கடவு முதல் சொக்கனூர் வரையிலான சாலை கனரக வாகனங்கள் செல்ல தகுதிவாய்ந்தவையாக உள்ளது எனவும், சொக்கனூர் கிராமம் முதல் கிணத்துக்கடவு கிராமம் வரை சுமார் 10-ற்கும் மேற்பட்ட குவாரிகள் செயல்பட்டு வந்த நிலையில், பெரும்பாலான குவாரிகளுக்கு அனுமதிக்காலம் முடிவடைந்துவிட்டதால், தற்போதைய நிலையில் குறைந்த அளவிலான குவாரிகள் மட்டுமே இயங்கி வருகிறது எனவும், மேற்படி குறைந்த அளவிலான குவாரிகள் இயங்கி வருவதால் கட்டுமானப் பொருட்கள் உற்பத்தி குறைவு ஏற்பட்டு, தட்டுப்பாடு ஏற்படும் சூழ்நிலையும், கட்டுமானப் பொருட்களின் விலையுயர்வு ஏற்படும் சூழலும் உள்ளதால், தற்போது குவாரி அனுமதி கோரும் திரு.மகாலிங்கம் என்பவரது கோரிக்கையினைப் பரிசீலனை செய்ய வேண்டியது அவசியமாகிறது எனவும் தெரிவித்து, தெரிவித்து குவாரி குத்தகை உரிமம் வழங்க பரிந்துரை செய்து சார் ஆட்சியர், பொள்ளாச்சி அவர்கள் அறிக்கை சமர்ப்பித்துள்ளார்.

இந்நிலையில், வட்டார வளர்ச்சி அலுவலர் (கி.ஊ), கிணத்துக்கடவு அவர்களிடம் விண்ணப்ப புலங்களில் இருந்து 300 மீ சுற்றளவிற்குள் அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள் மற்றும் 50 மீ சுற்றளவிற்குள் கட்டுமானங்கள் ஏதும் உள்ளதா என்ற விபரம் கோரப்பட்டதில், பார்வை 10-ல் காணும் கடிதத்தில் மேற்படி குவாரி குத்தகை உரிமம் கோரி விண்ணப்பிக்கப்பட்ட புலங்களிலிருந்து 300 மீ சுற்றளவில் அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள் ஏதுமில்லை என்றும், 50 மீ சுற்றளவிற்குள் கட்டுமானங்கள் ஏதுமில்லை என்றும் தெரிவித்துள்ளார்.

இந்நிலையில், கோயம்புத்தூர் மாவட்டம், அஞ்சல், குட்டிகவுண்டன்பதி, 8/129, மாதேஸ்வரர் கோவில் கட்டிடம் என்ற குவாரியில் வசிக்கும் திரு.கந்தசாமி என்பவரின் மகன் திரு.க.மகாலிங்கம் என்பவருக்கு கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், சொக்கனூர் கிராமம், புல எண்கள். 816(பகுதி)-ல் 0.67.5 ஹெக்டேர், 818-ல் 0.25.0 ஹெக்டேர், 819/1-ல் 0.54.0 ஹெக்டேர், 822/1(பகுதி)-ல் 0.32.50 ஹெக்டேர், 822/2A(பகுதி)-ல் 0.19.50 ஹெக்டேர், 824/1A-ல் 1.02.50 ஹெக்டேர் ஆக மொத்தம் 3.01.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் குத்தகை உரிமம் வழங்குவது தொடர்பாக மாவட்ட ஆட்சியரின் ஒப்புதல் கோரப்பட்டதில், பார்வை 12-ல் கண்டுள்ள மாவட்ட ஆட்சியரின் குறிப்பில், பொது மக்களின் ஆட்சேபணையின் அடிப்படையில், ஏற்கனவே கிணத்துக்கடவு வட்டம், சொக்கனூர் கிராமத்திற்குட்பட்ட பகுதிகளில் வழங்கப்பட்ட குவாரி குத்தகை உரிமங்களில் ஏதேனும் ஒன்றின் குத்தகை உரிம காலம் முடிவற்ற பின்னர் புல எண்கள். 816(பகுதி)-ல் 0.67.5 ஹெக்டேர், 818-ல் 0.25.0 ஹெக்டேர், 819/1-ல் 0.54.0 ஹெக்டேர், 822/1(பகுதி)-ல் 0.32.50 ஹெக்டேர், 822/2A(பகுதி)-ல் 0.19.50 ஹெக்டேர், 824/1A-ல் 1.02.50 ஹெக்டேர் ஆக மொத்தம் 3.01.0 ஹெக்டேர் பரப்பளவில் குத்தகை உரிமம் கோரப்பட்ட விண்ணப்பத்தின் மீது குத்தகை அனுமதி வழங்குவது தொடர்பாக பரிசீலனைகள் செய்யலாம் என அறிவுறுத்தப்பட்டது.

இந்நிலையில், 09.01.2025 அன்று முதன்மை செயலாளர் அவர்களால் நடைபெற்ற கலந்தாய்வு கூட்டத்தில், கனிமத்தின் உற்பத்தியை அதிகரிக்கும் வகையில், நிலுவையில் உள்ள விண்ணப்பங்களை பரிசீலனை செய்யவும் அறிவுரை வழங்கப்பட்டதை தொடர்ந்து, திரு.க.மகாலிங்கம் என்பவருக்கு குத்தகை உரிம அனுமதி வழங்குவதற்கு உகந்த புலமாக கருதி அறிவிப்பு செய்யலாம் என பார்வை 13-ல் கண்டுள்ளவாறு மாவட்ட ஆட்சியர் ஒப்புதல் அளித்துள்ளார்.

எனவே, சார் ஆட்சியர், பொள்ளாச்சி, உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் மற்றும் வட்டார வளர்ச்சி அலுவலர் (கி.ஊ), கிணத்துக்கடவு ஆகியோரின் பரிந்துரைகளின் அடிப்படையில் கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், சொக்கனூர் கிராமம், புல எண்கள். 816(பகுதி)-ல் 0.67.5 ஹெக்டேர், 818-ல் 0.25.0 ஹெக்டேர், 819/1-ல் 0.54.0 ஹெக்டேர், 822/1(பகுதி)-ல் 0.32.50 ஹெக்டேர், 822/2A(பகுதி)-ல் 0.19.50 ஹெக்டேர், 824/1A-ல் 1.02.50 ஹெக்டேர் ஆக மொத்தம் 3.01.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் விண்ணப்பதாரர் திரு.க.மகாலிங்கம் என்பவருக்கு அறிவிப்பு செய்யப்படுகிறது.



1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும் எவ்வித இடையூறும் இன்றி சாதாரண கல் மற்றும் கிராவல் குவாரி பணி மேற்கொள்ள வேண்டும்.
2. அனுமதி கோரும் புலங்களின் அருகில் உள்ள பட்டா புல நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. அனுமதி கோரும் புல எண்களான. 816, 818, 819/1, 824/1A-ன் அருகில் அமைந்துள்ள அரசு தீர்வை ஏற்படாத தரிசு புல எண். 817 மற்றும் அரசு புறம்போக்கு புல எண்கள். 815, 824/2-க்கு 10 மீ பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
4. அனுமதி கோரும் புல எண். 824/1A-ன் கிழக்கு மற்றும் வடக்கு பகுதியில் அமைந்துள்ள மின்னழுத்த கம்பி பாதைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும் அல்லது மின்னழுத்த கம்பி பாதையை குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றும் முன் குவாரியிலிருந்து 50 மீ அப்பால் மாற்றி அமைக்க வேண்டும்.
5. அனுமதி கோரும் புல எண். 822/2A-ன் மீதமுள்ள பட்டா பாதையில் அமைந்துள்ள குட்டைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குட்டைக்கு எவ்வித இடையூறும் ஏற்படா வண்ணம் குவாரிப்பணி மேற்கொள்ள வேண்டும்.
6. அனுமதி கோரும் புலத்தினை அரசு அங்கீகாரம் பெற்ற நிறுவனத்தினரால் DGPS (Differential Global Positioning System)-ன் படி ஆய்வு செய்யப்பட்டு ஒவ்வொரு எல்லைத் தூண்களும் நடப்படவேண்டும்.

மேலும், குத்தகை உரிமம் வழங்க ஏதுவாக தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 பிரிவு 41 மற்றும் 42-ன் படி ஒப்புதல் பெறப்பட்ட சுரங்க திட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மைச்சான்று பெற்று சமர்ப்பிக்க விண்ணப்பதாரருக்கு அறிவுறுத்தல் செய்யப்படுகிறது.

மேலும், விண்ணப்பதாரர் இவ்வறிவிப்பு கிடைக்கப்பெற்ற 90 தினங்களுக்குள் வரைவு சுரங்க திட்டம் தயார் செய்து உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் அவர்களிடம் ஒப்புதலுக்கு சமர்ப்பிக்குமாறு கேட்டுக்கொள்ளப்படுகிறது.

பெறுநர்:
திரு. K. மகாலிங்கம்,
த.பெ. கந்தசாமி,
8/129, மாதேஸ்வரர் கோவில் தோட்டம்,
குட்டிகவுண்டன்பதி, குமிட்டிபதி அஞ்சல்,
கோயம்புத்தூர் மாவட்டம்

உதவி இயக்குநர் (பொ),
புவியியல் மற்றும் சுரங்கத்துறை
கோயம்புத்தூர்.

[Handwritten signature]

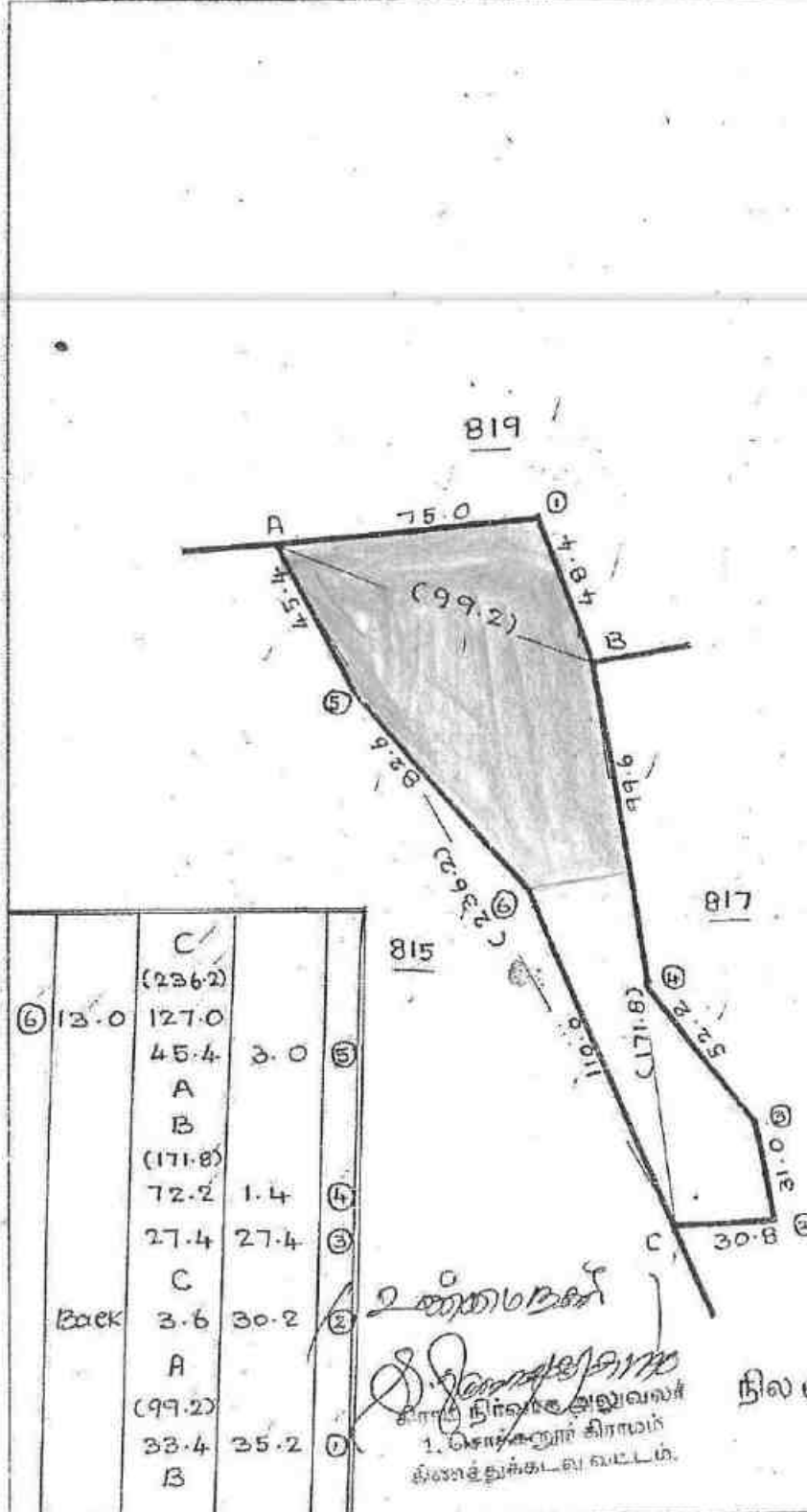


மாவட்டம். கோயம்புத்தூர்

வட்டம். பெருமாள்

புல எண். 816 ✓

பரப்பு: ஹெக்டேர்



உயர்நீதிமன்றம் தா. சென்னை. 13.4.82.

அளவு. 1: 2000.

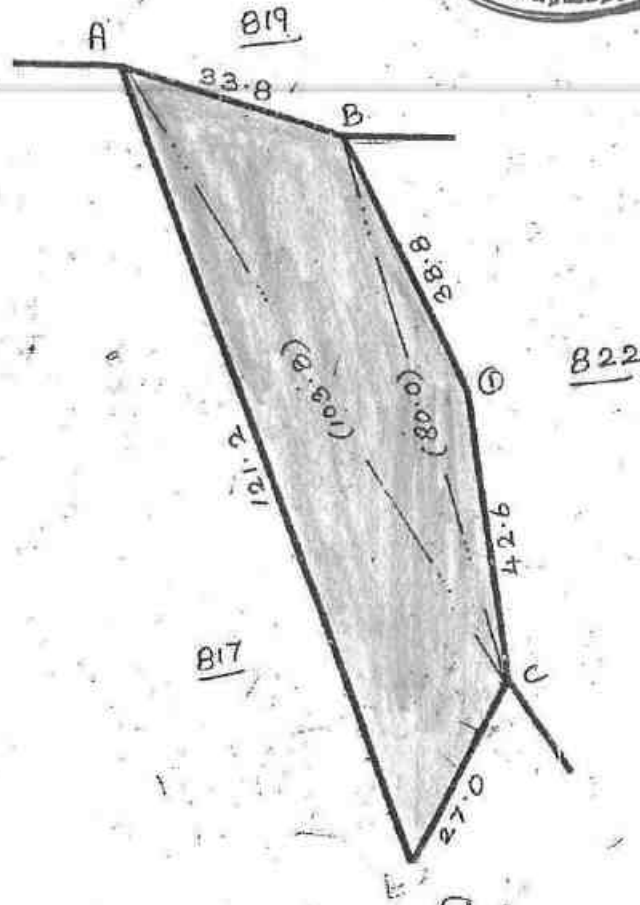
பெரியபாளையம் தா. கோயம்புத்தூர். 12.4.82.

மாவட்டம். கோயம்புத்தூர்

வட்டம். மொள்ளாச்சி

புல எண். 818

கிராமம் { எண். 14
பெயர். செக்காஜூர்
பரப்பு: ஹெக்டேர் 0 ஏர். 25.0



		C		
		(80.0)		
①	6.8	38.2		
		B		
		A		
		(103.8)		
		77.4	21.0	B
		C		

2 கிராமங்கள்
கிராம நிர்வாக அலுவலர்
1. செக்காஜூர் கிராமம்
கிணத்துக்கடவு வட்டம்

நில வருவாய் ஆய்வ
கிணத்துக்கடவு

தயாரித்தவர் சா. சுமரட்சி அளவு. 1:1000
25.3.82
தேயிலிட்டு பார்த்தவர் தி. 08. செருப்பினி
24/3/82

கோட்டை
25.0

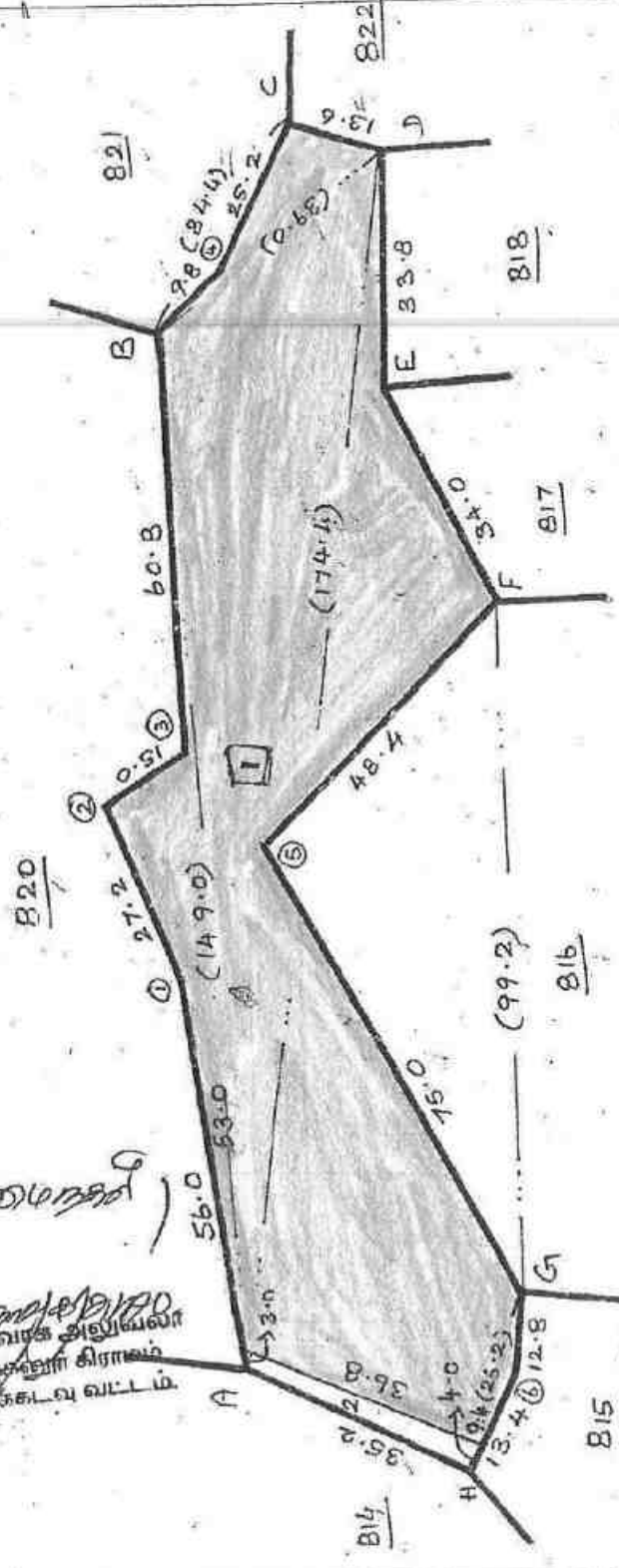
கோயம்புத்தூர்

மொண்டாச்சி

புல எண். 819

கிராமம் {
எண். 1A
பெயர். செங்குட்டி

பரப்பு: ஹெக்டர்



⑥	1.8	H (26.2) 12.6 G (99.2) 33.4 35.2 ⑤
C	12.0	F D (39.0) 32.6 B C (34.4) 9.2 3.0 ④
③	0.8	B (149.0)
②	18.8	88.2
①	5.6	81.2
		55.6
		140.8 4.2 E
		112.8 23.4 F
		14.2 37.8 G
		A
back	11.2	32.8 H

1. செங்குட்டி கிராமம்
கிராம நிர்வாக அலுவலர்
பிணைத்துக்கொடுக்கப்பட்டது

இதன் கீழ் கிராமம் 25.3.82 அளவு 1:1000
பெருமளவுத்தன் சி. செ. குருசாமினி
24/3/82

மாபட்டம் கோயம்புத்தூர்

வட்டம் பெண்ணாச்சி

புல எண். 822

எண். 14

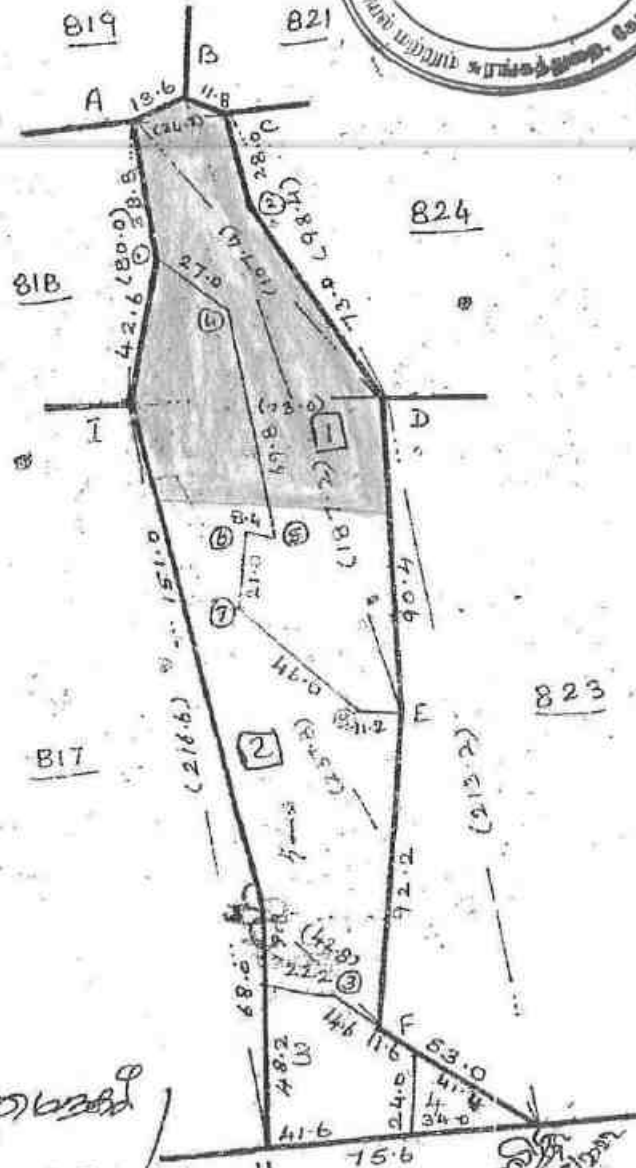
கிராமம்

பெயர். ரெங்கசாமி

பரப்பு. ஹெக்டேர் 1 ஏர். 40.0



	E		
	(187.2)		
	182.0	10.0	⑥
	142.0	33.0	⑦
	127.6	16.4	⑧
	123.2	24.0	⑤
	58.2	7.8	④
	B		
	F		
	(42.8)		
③	4.4	28.8	
	J		
	D		
	(213.2)		
E	15.4	124.4	
F	38.6	35.2	
	G		
	C		
	(98.4)		
②	7.4	72.4	
	D		
	A		
	(24.2)		
	10.8	4.4	B
	C		
	I		
	(80.0)		
①	6.8	38.2	
	A		
	H		
	(216.6)		
J	17.0	149.6	
	I		



2 க்குமேல்
கிராமநிர்வாக அலுவலர்
1. சொந்தலாள் கிராமம்
கிணத்துக்கடவு வட்டம்.

நில விருவாய ஆய்வாளர்
கிணத்துக்கடவு

தயாரித்தவர் க. காமராசு அளவு. 1:2000
27.8.82
ஆலபிடகு பார்த்துனர். சி.கெ.உதேநாமினி
24/3/82

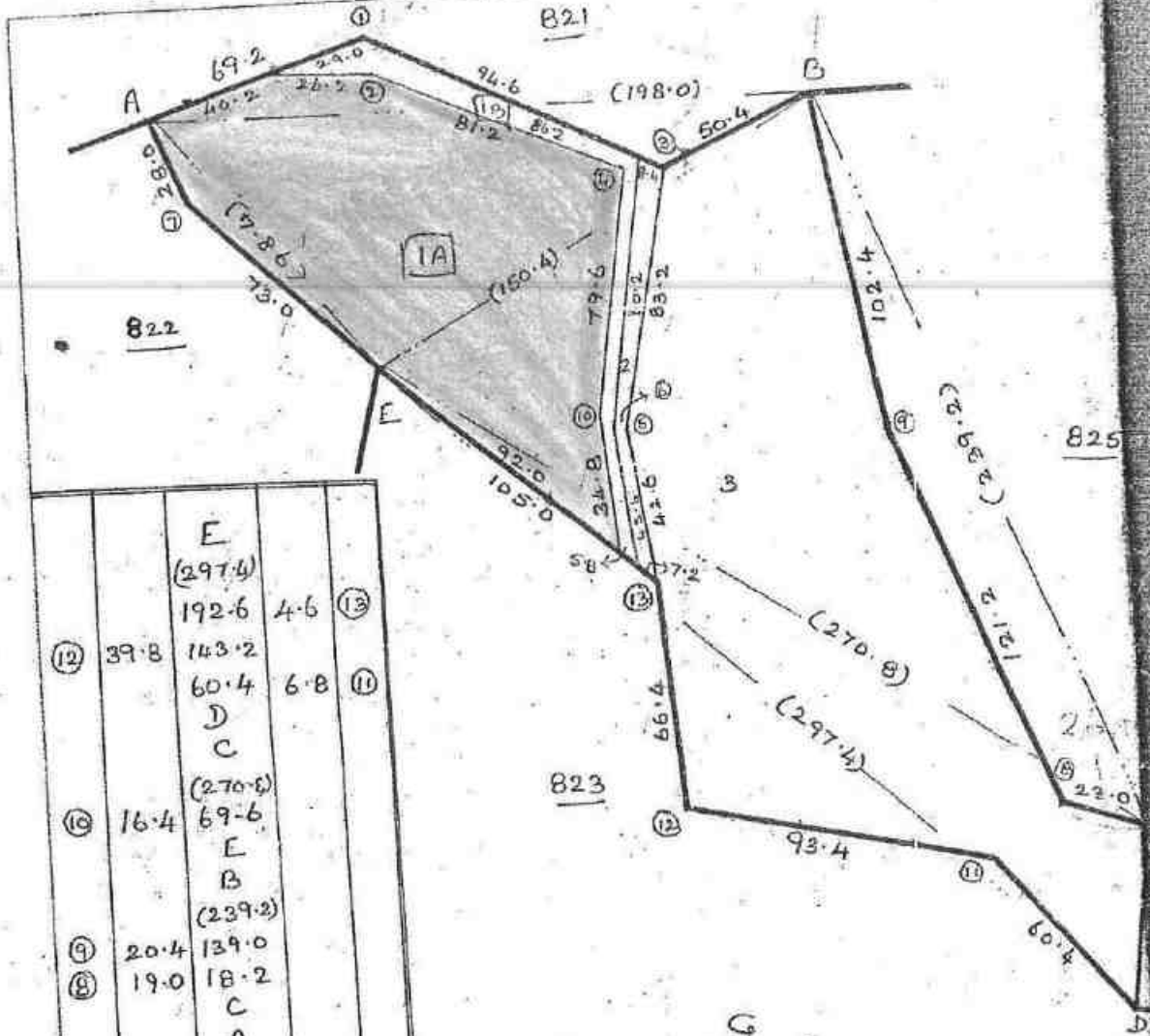
LEASE APPLIED AREA

மேலட்டம். கோயம்புத்தூர்

வட்டம். பெராளச்சி

புல எண். 824

பரப்பு. ஹெக்டேர் 3 ஏர். 13.0



		E		
		(297.4)		
		192.6	4.6	13
12	39.8	143.2		
		60.4	6.8	11
		D		
		C		
		(270.8)		
10	16.4	69.6		
		E		
		B		
		(239.2)		
9	20.4	139.0		
8	19.0	18.2		
		C		
		A		
		(98.4)		
7	7.4	72.4		
		E		
		(150.4)		
6	60.4	101.6		
5	54.0	100.8		
4	13.6	58.0		
		B		
		(148.0)		
		151.8	19.2	2
2	11.2	66.0		
1	20.0	66.0		
		A		

சுயமாகத்தான்
கிராமநிர்வாக அலுவலர்
1. பொன்னுள்ள கிராமம்
கிணத்துக்கடவ வட்டம்.

நில வருவாய் ஆய்வாளர்
கிணத்துக்கடவ

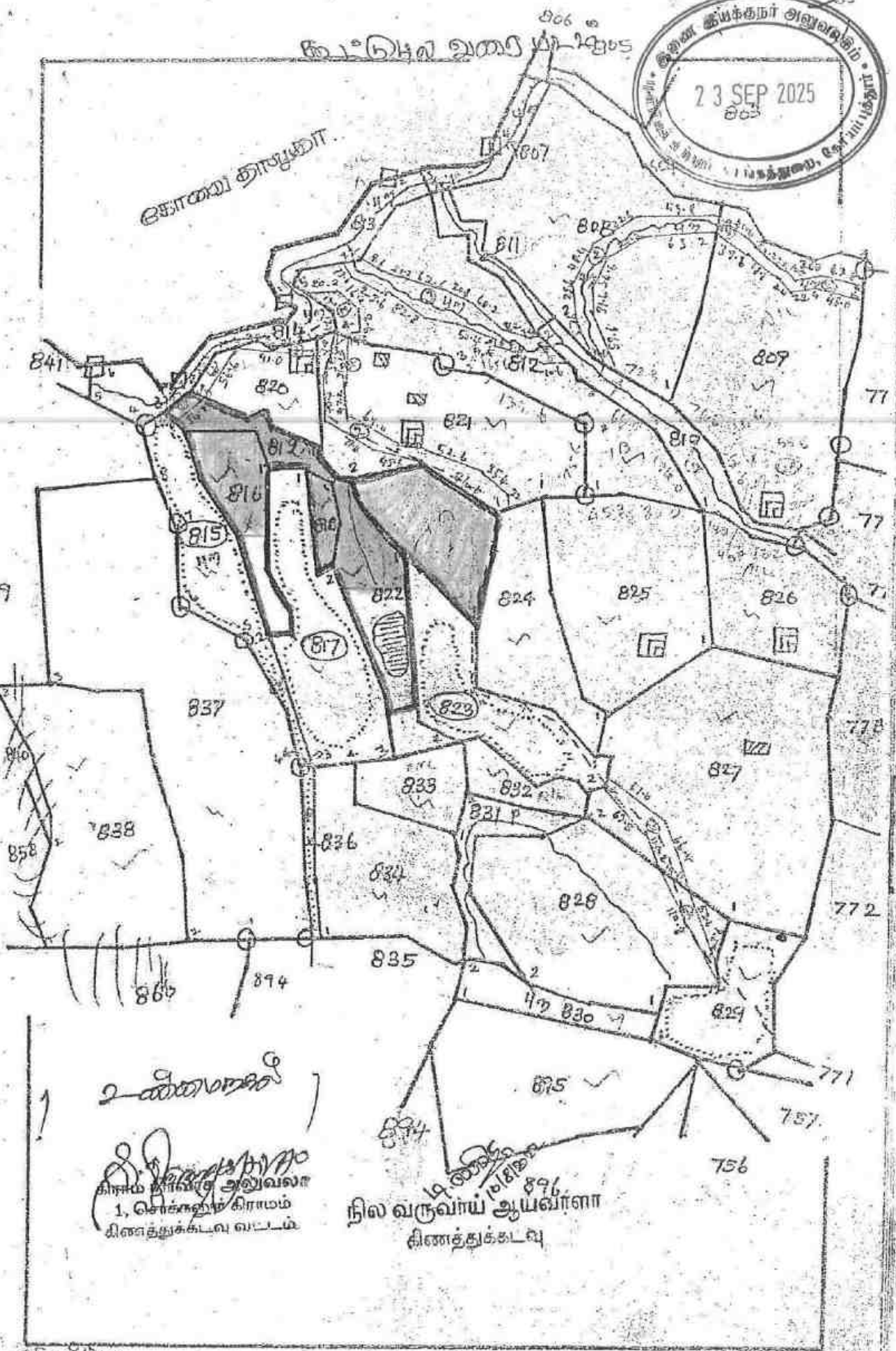
தயாரித்தவர்: சி.காமராட்சி
27.3.82
உயர்ப்புரைத்தவர்: சி.கே. சேனாநாதன்

அளவு: 1:2000

LEASE APPLIED AREA



கோவை தாலுகா



2-வது பகுதி

கிராம நிர்வாக அலுவலர்
1. சொத்துக்கள் கிராமம்
கிணத்துக்கடவு வட்டம்

நில வருவாய் ஆய்வாளர்
கிணத்துக்கடவு

செய்தாட்சத்தம்
மா.அ.அ.அ.அ.அ.அ.

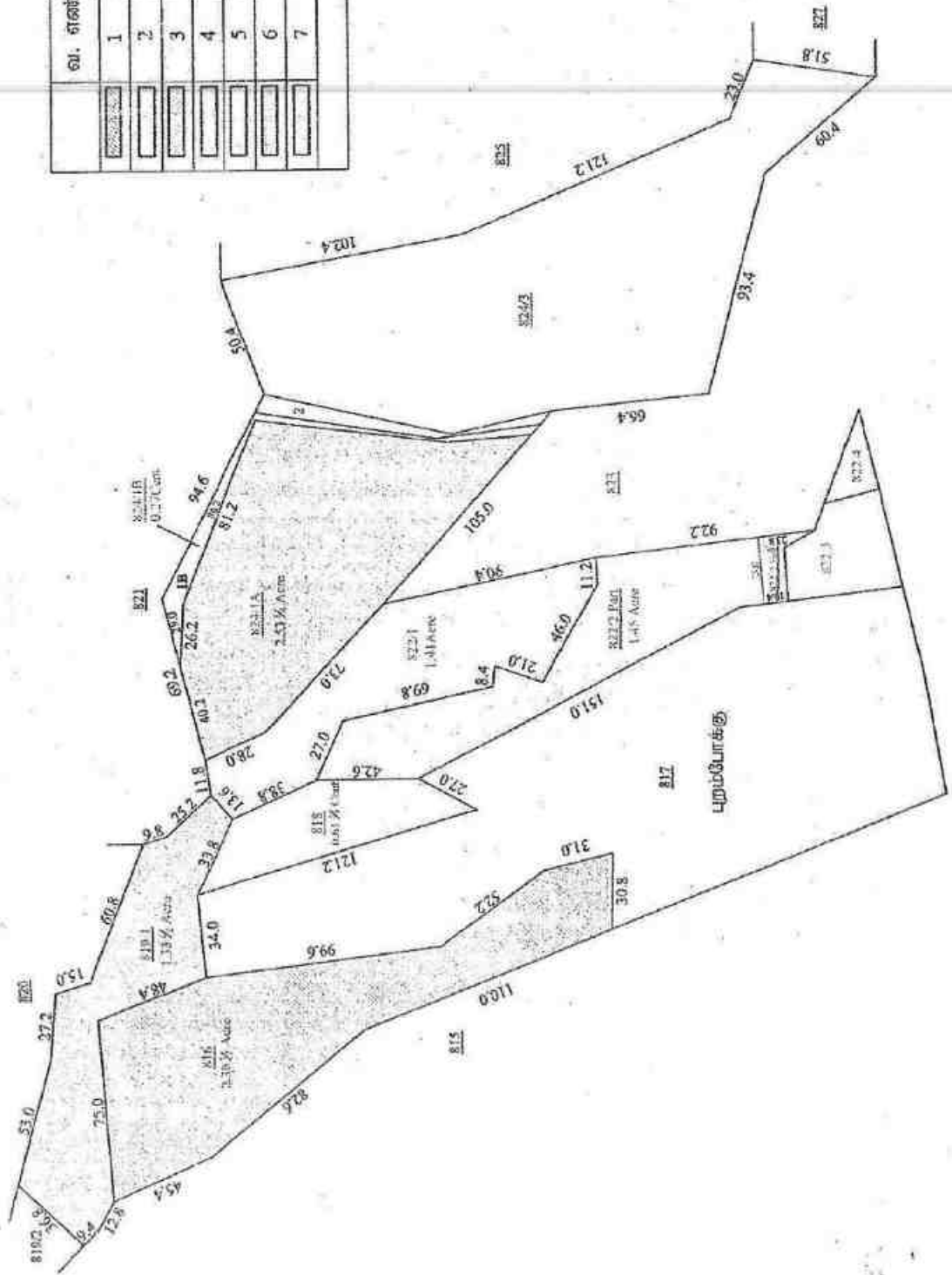
தயாரித்தவர்
நில வருவாய் ஆய்வாளர்

LEASE APPLIED AREA

மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

கிராமம் { எண் : 01
பெயர் சொக்கனூர்



வ. எண்	புல எண்	பரப்பு ஏக்கர் - சென்ட்
1	816	2.38 1/2 Acre
2	818	0.61 1/2 Acre
3	819/1	1.33 1/2 Acre
4	822/1	1.41 Acre
5	822/2 Part	1.45 Acre
6	824/1A	2.53 1/2 Acre
7	824/1B	0.27 Cent
TOTAL		10.00 Acre





தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

வருவாய் கிராமம் : சொக்கனூர்

பட்டா எண் : 2445

உரிமையாளர்கள் பெயர்

1. கந்தசாமிகவுண்டர்

மகன்

K.மகாலிங்கம்



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	
816	-	0 - 96.50	1.94	--	--	--	--	2023/0103/12/484051- -- -- 22-06-2023
818	-	0 - 25.00	0.50	--	--	--	--	2023/0103/12/484051- -- -- 22-06-2023
819	1	0 - 54.00	1.08	--	--	--	--	2023/0103/12/484051- -- -- 22-06-2023
822	1	0 - 57.00	1.14	--	--	--	--	2023/0103/12/484051- -- -- 22-06-2023
822	2A	0 - 57.50	1.15	--	--	--	--	2023/0103/12/484051- -2022/12/12/000120SD -- 22-06-2023
824	1A	1 - 2.50	2.09	--	--	--	--	2023/0103/12/484051- -- -- 22-06-2023
824	1B	0 - 11.00	0.22	--	--	--	--	2023/0103/12/484051- -- -- 22-06-2023
		4 - 3.50	8.12					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/12/014/02445/20475 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 24-06-2023 அன்று 10:48:57 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

உறுமை நகர்
கோட்டி
கிராம நிர்வாக அலுவலர்
கிராம நிர்வாக அலுவலர்
கிராம நிர்வாக அலுவலர்
கிராம நிர்வாக அலுவலர்

382/38-R.F. III-A-10-10,00,000 Cps.-GBP.-MOU.-7-2020.

83 A

[illegible]



தி. எண். 14 கொக்கனூர்

239

1	2	3	4	5	6	7	8	9	10	11	12
								ரு. பை. ஹெ. சர்ஸ்	ரு. பை		
1	811-1	ர	பு	...	7-4	5	2 00	0 06.0	0 12	357 ரூ. பொன்னம் மாள்	
2	-2	ர	தV3	...	7-4	7	9 88	0 19.0	1 88	357 ரூ. பொன்னம் மாள்	
								0 25.0	2 00		
1A	812-1a	ர	பு	...	7-4	5	2 00	1 30.0	2 52	357 ரூ. பொன்னம் மாள்	கிணறு 1
1B	-1a	ர	பு	...	7-4	5	2 00	1 18.0	2 38	710 த. கைவாச கவுண்டர் (1) ஸ்க. ஆறுமுகம் (2)	
2	-2	அ	புற	...	...	...	...	0 05.0	...	...	வண்டிப் பாதை
3	-3	அ	புற	...	...	...	...	0 20.0	...	...	வாய்க்கால்
4A	-4A	ர	தV3	...	7-4	7	9 88	0 93.5	9 19	357 ரூ. பொன்னம் மாள்	கிணறு 1
4B	-4B	ர	பு	...	7-4	5	2 00	0 15.0	0 31	357 ரூ. பொன்னம் மாள்	
4C	-4C	ர	பு	...	7-4	5	2 00	0 01.0	0 06	357 ரூ. பொன்னம் மாள்	
								3 82.5	14 56		
...	813	அ	புற	...	...	...	...	0 52.0	...	...	வாசி
...	814	அ	புற	...	...	...	...	0 81.0	...	...	வாசி
...	815	அ	புற	...	...	...	...	1 56.0	...	...	கால் பாதை
...	816	ர	பு	...	7-4	5	2 00	0 96.5	1 94	823 அ. சுந்தரம் (1) அ. சுப்ரமணியம்	
...	817	அ	த.த	...	...	...	...	...	...	...	யாறை

V வீரப்பகவுண்டனார் கொடிக்கால் பள்ளம்



1	2	3	4	5	6	7	8	9	10	11	12
							கு. கி. ப.	மொ. கி. ப.	கு. பை.		
818	...	818	ர	ய	...	7-4	5	2 00	0 25.0	0 50	823 அ. கத்தாம் (1) அ. கப்ரமணயம் (2) அ. புவாத்தான் (3)
819	1	819-1	ர	த3E	...	7-5	8	8 65	0 54.0	4 69	823 அ. கத்தாம் (1) அ. கப்ரமணயம் (2) அ. புவாத்தான்
	2	-2	அ	யு	...	...	...	...	0 01.0	...	...
									0 55.0	4 69	
820	1A	820-1பா	ர	ய	...	7-4	5	2 00	0 00.5	0 06	711 ப. செல்லப்ப கவுண்டர் (1) ப. பழனிசாமி கவுண்டர் (2)
	1B	-1பா	ர	ய	...	7-4	5	2 00	0 41.5	0 82	214 ப. செல்லப்ப கவுண்டர்
	1C	-1பா	ர	ய	...	7-4	5	2 00	0 41.0	0 81	308 ப. பழனிசாமி கவுண்டர்
	1D	-1பா	ர	ய	...	7-4	5	2 00	0 03.5	0 06	823 அ. கத்தாம் (1) அ. கப்ரமணயம் (2) அ. புவாத்தான் (3)
	2	-2	அ	யு	...	...	...	...	0 02.0	...	...
	3	-3	அ	யு	...	...	...	...	0 03.5	...	...
									0 92.0	1 75	
821	1A	821-1பா	ர	ய	...	7-4	5	2 00	0 03.0	0 06	711 ப. செல்லப்ப கவுண்டர் (1) ப. பழனிசாமி கவுண்டர் (2)
	1B	-1பா	ர	ய	...	7-4	5	2 00	0 07.0	0 14	ப. செல்லப்ப கவுண்டர்
	1C	-1பா	ர	ய	...	7-4	5	2 00	0 20.0	0 39	308 ப. பழனிசாமி கவுண்டர்

பி. ச. தெ. 831 சாளரத்தில் உள்ளது. தினம் 14 செப்டம்பர் 2025

73 SEP 2025

1	2	3	4	5	6	7	8	9	10	11	12
822	4	822-4	r	y	...	7-4	5	2 00	0 05.0	0 12	823 அ. சுத்தாரம் (1) அ. சுபரமணயம் (2) அ. பூவாத்தாள் (3)
									1 40.0	7 69	
823	...	823	அ	தி.த	...	...	...	...	1 78.0	...	...
824	1A	824-1A	r	y	...	7-4	5	2 00	1 02.5	2 09	231 இளவர் தங்க ராஜ் (1) காப்பாளர் தாயார் மாராத்தாள்
	1B	-1A	r	y	...	7-4	5	2 00	0 11.0	0 22	231 இளவர் தங்க ராஜ் (1) காப்பாளர் தாயார் மாராத்தாள்
	2	-2	அ	புற	...	...	...	...	0 06.5	...	...
	3	-3	r	y	...	7-4	5	2 00	1 93.0	3 88	823 அ. சுத்தாரம் (1) அ. சுபரமணயம் (2) அ. பூவாத்தாள் (3)
									3 13.0	6 19	
825	1	825-பா	r	y	...	7-4	5	2 00	0 47.0	0 95	284 க. நாச்சிமுத்து முதலியார்
	2	-பா	r	y	...	7-4	5	2 00	1 00.0	2 00	66 க. சுந்தராயி முதலியார்
	3	-பா	r	y	...	7-4	5	2 00	0 84.5	1 70	284 க. நாச்சிமுத்து முதலியார்
	4	-பா	r	y	...	7-4	5	2 00	0 80.0	1 60	66 க. சுந்தராயி முதலியார்
									3 11.5	6 25	
826	1	826 பா	r	y	...	7-4	5	2 00	0 31.0	1 30	284 க. நாச்சிமுத்து முதலியார்

2. எண். 14 சொக்கநாதர்



1	2	3	4	5	6	7	8	9	10	11	12
ID	821-1	ர	பு	...	7-4	5	2 00	0 01.0	0 06	823	அ. சுந்தரம் (1) அ. சுபரமணயம் (2) அ. புவரத்தாள் (3)
IE	-1	ர	பு	...	7-4	5	2 00	0 08.0	0 16	711	ப. செல்லப்ப கவுண்டர் (1) ப. பழனிசாமி கவுண்டர் (2)
2	-2	அ	பு	...	...	...	...	0 14.0	...	...	வண்ணம் பாதை
3A	-3	ர	பு	...	7-4	5	2 00	0 05.0	0 10	713	ப. செல்லப்ப கவுண்டர் (1) ப. பழனிசாமி கவுண்டர் (2)
3B	-3	ர	பு	...	7-4	5	2 00	0 48.0	0 96	214	ப. செல்லப்ப கவுண்டர்
3C	-3	ர	பு	...	7-4	5	2 00	0 49.0	0 98	308	ப. பழனிசாமி கவுண்டர்
3D	-3	ர	பு	...	7-4	5	2 00	1 73.5	3 52	712	ச. பாப்பாத்தி (எ) மாந்தரத்தாள் (1) கண்ணம்மாள் (எ) ராமாத்தாள் (2)
4	-4	அ	பு	...	...	...	...	0 01.0	...	...	ஓடை
								3 29.5	6 37		
1	822-1	ர	தE3	...	7-5	8	8 65	0 57.0	4 94	823	அ. சுந்தரம் (1) அ. சுபரமணயம் (3) அ. புவரத்தாள் (3)
2	-2	ர	பு	...	7-4	5	2 00	0 61.0	1 25	823	அ. சுந்தரம் (1) அ. சுபரமணயம் (2) அ. புவரத்தாள் (3)
3	-3	ர	தE3	...	...	...	...	...	...	...	...

1 2 கண்ணம்மாள்

கிராமத்தாள் கண்ணம்மாள்
1. கிராமத்தாள் கிராமம்
கிணத்துக்கு வட்டம்.

நில விருவாய் அய்யாவாணி
அ. சுபரமணயம்
கிணத்துக்கு (2)
அ. புவரத்தாள் (3)

E. எ. தெ. 831 சாலையில் உள்ள குட்டை



आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

KANDASAMY GOUNDER MAHALINGAM
KANDASAMY GOUNDER

30/06/1968
Permanent Account Number

AMAPM4364R

K. N. Mahalingam
Signature

7

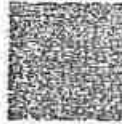
K. N. Mahalingam



भारत सरकार
GOVERNMENT OF INDIA



மாஹலிங்கம் கந்தசாமி
Mahalingam Kanthasamy
பிறந்த நாள்/ DOB: 30/06/1968
ஆண் / MALE



5798 9699 6314

எனது ஆதார், எனது அடையாளம்.



भारतीय विशद पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

மகவளி:
S/O: கந்தசாமி, 8/129,
மாஹேஸ்வரர் கோவில்
தோட்டம்,
கும்திமுண்டன்பாதி,
கும்திமுண்டி அஞ்சல்,
கோயம்புத்தூர் தெற்கு,
கோயம்புத்தூர்,
தமிழ் நாடு - 641032

5798 9699 6314

Address:
S/O: Kanthasamy, 8/129,
MAHESHWARAR KOVIL
THOTTAM,
KUMTIGUNDENPATHY,
KUMTIPATHY POST,
Colombore South, Colombore,
Tamil Nadu - 641032



1247



help@uidai.gov.in



www.uidai.gov.in

Handwritten signature

153



ANNEXURE

Reg. No. P 03120004 : Code No. 293193 : 300271



பாரதிதாசன் பல்கலைக்கழகம்
BHARATHIDASAN UNIVERSITY

(Established by the Government of Tamil Nadu in 1982; Recognized by UGC under 2f and 12B of UGC Act)
Member, Association of Indian Universities and Association of Commonwealth Universities; Accredited by NAAC with 'A' Grade)

அறிவியல் புலம்
FACULTY OF SCIENCE

பாரதிதாசன் பல்கலைக்கழக ஆட்சிக் குழு ஏப்ரல் 2005

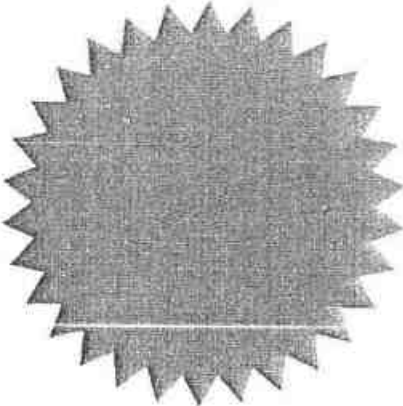
ஆம் ஆண்டு நடத்திய செயல்முறை நிலத்தியல் தேர்வில்

ச. இளவரசன்

என்பவர் முதல் வகுப்பில் தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள்
சான்றளித்தபடி அறிவியல் நிறைஞர் என்னும் பட்டத்தை
அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the BHARATHIDASAN UNIVERSITY hereby makes
known that S. ILAVARASAN has been
admitted to the Degree of MASTER OF SCIENCE, having
been certified by duly appointed Examiners to be qualified to receive the same in
APPLIED GEOLOGY at the Examination held in
APRIL 2005 and placed in FIRST Class.

Given under the seal of the University.



திருச்சிராப்பள்ளி

Tiruchirappalli

நாள் : 20th October 2005

Dated :

A 023450 ISSUED ON :

பதிவாளர் Registrar

6 MAY 2006

துணைவேந்தர் Vice-Chancellor

90 A

ANNEXURE

GOVERNMENT OF INDIA(Ministry of Labour and Employment)
(Director General of Mines Safety)

23 SEP 2025

Certificate of practical experience granted by the Manager to a
Candidate for a Manager / Surveyor's / Geologist.Certificate of Competency Examination under the Coal Mines Regulation
1957 / Metalliferous Mines Regulation 1961.

I A.DAVID PRASAD being
the Manager of Karaichuttu Uvari Mine
belonging to M/s.Transworld Garnet India Pvt. Ltd.
do hereby certify that Shri. S.ILAVARASAN
Son of U.SANTHANAM
of Door No.7C, Mettu Street, Beema Nagar,
Trichy - 620 001. Tamilnadu.

(Whose signature is appended) worked in above mine.

from 01-06-2005 to 17-07-2011 (Six years One month and
Seventeen Days)

During his terms of work aforesaid he has obtained practical experience
as detailed over leaf. The duties connected with his work have involved his
continuous attendance at the mine and have been efficiently performance by
him.

I believe him to be of good character and fit & proper person to be
examined for a Certificate of Competency.

Signature with date

MANAGER (MINES)

Manager

DAVID PRASAD

K. UVARI MINE, Radhapuram Taluk

P.O.

K.UVARI

Tirunelveli Dist. - 627 658

District

TIRUNELVELI

State

TAMIL NADU



(Signature of Candidate)

NOTE :

Delete if not applicable

(Garnet Sand) State Name of Mineral



Sl. No.	Particulars of Experience	Practic al (a) Experience	Place of Experience	Period of Practical Experience	Total Experience 23 SEP 2025		
1.	As a Geologist :-	From	To	Years	Months	Days	
	Survey and exploration of Garnet bearing placer mineral in coastal region of Tamilnadu. Reserve estimation and preparation of mining plan, scheme of mining, and PMCP, EIA, EMP, geo technical report. Sieve analysis of mineral samples, production schedules preparation, Co-ordination with mines and mineral processing	01-06-05	17-07-11	6	1	17	

GRAND TOTAL Six Years One Month Only

Above Period is Given Below (b) Average Daily Employment (c) During the

In below ground working	In Open cast working	In all
Nil	100	108

Signature of Candidate

Signature of Manager with date

MANAGER (MINES)

TRANSWORLD GARNET INDIA PVT. LTD.,

K. UVARI MINE, Radhapuram Taluk
Tirunelveli Dist. - 627 658

Name of Mine

INSTRUCTIONS

- State clearly the duties
- State whether on surface, in open cast workings or below ground.
- State specify the period spent by the applicant different mining operations or surveying operations, as the case may be, if the employment has been such as to involve and how many days a weeks he was employed, at the mine whether underground and in what capacity.
- Delate if the mine is a Metalliferous mine.
- Delate if the mine Coal Mine.

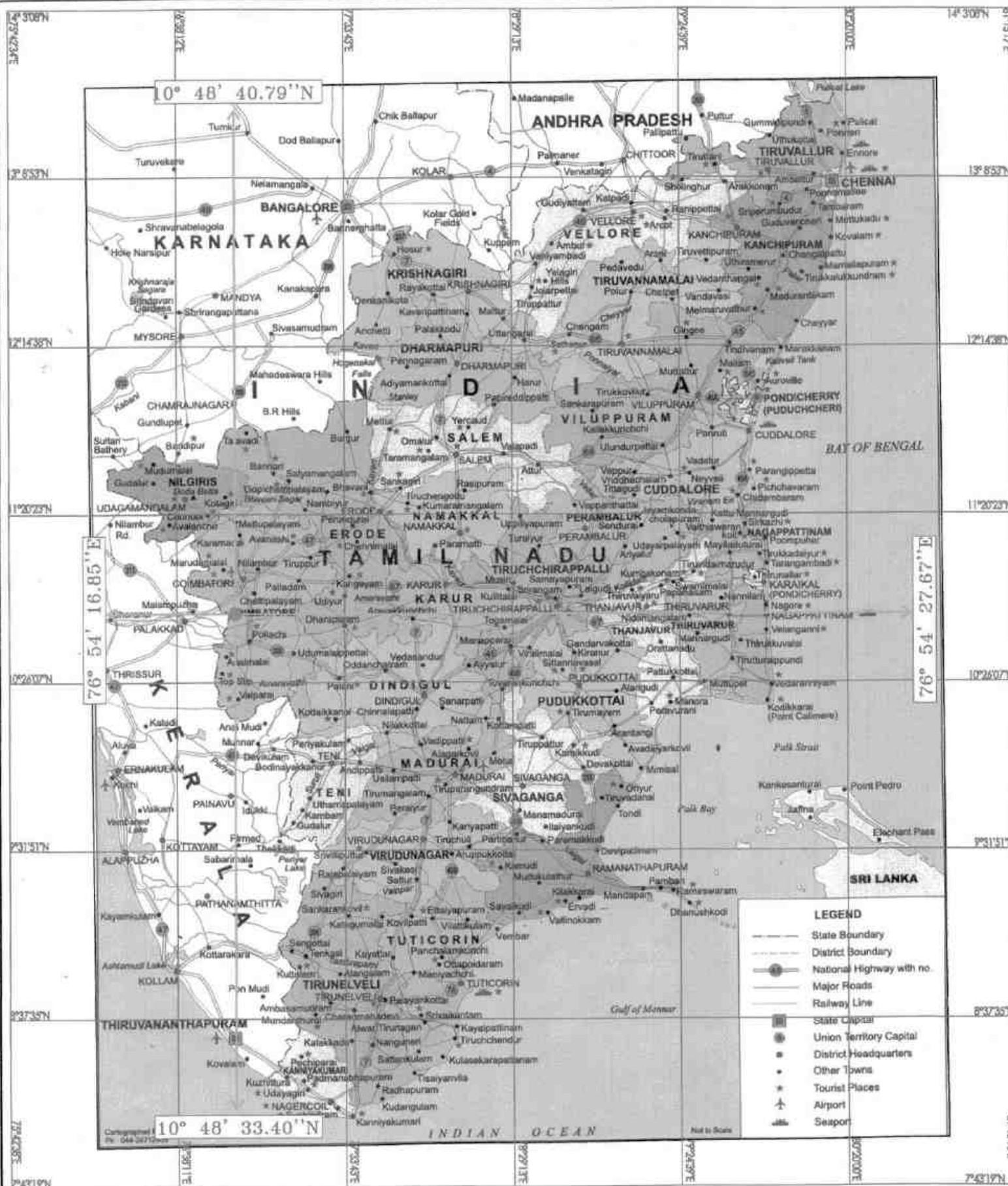


PLATE NO - I

DATE OF SURVEY :05.04.2025

APPLICANT:

THIRU. K.MAHALINGAM,
S/o.KANDHASAMY,
8/129,MADHESHWARAR KOVIL THOTTAM,
KUTTIGOUNDANPATHY,
KUMITTIPATHY POST,
COIMBATORE DISTRICT,
TAMIL NADU.

LOCATION OF Q.L APPLIED AREA:

S.F NOS : 816/(P).818.819/1,822/1(P),2A(P) & 824/1A.
EXTENT : 3.01.00 Ho.
VILLAGE : SOKKANUR,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

Q. L. AREA: ●

TOPO SHEET NO. : 58 B/13

LATITUDE : 10° 48' 33.40"N to 10° 48' 40.79"N

LONGITUDE : 76° 54' 16.85"E to 76° 54' 27.67"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

S. J. Lavasan
S. J. LAVASAN, M.Sc.,
QUALIFIED PERSON

Under Rule 15(1)(c) of MCR, 2016



OCTOBER TO DECEMBER



10° 49' 13.33"N

Towards Kurumbukadai

10° 48' 59.06"N

Towards Sattakkal Pudur

76° 54' 00.39"E

76° 54' 44.13"E

76° 55' 00.59"E

TAMIL NADU
KERALA

Towards Kerala

Towards Kerala

10° 48' 17.12"N

Towards Veerappagoundanur

10° 48' 00.85"N

JULY TO SEPTEMBER

LANDUSE PATTERN	
DESCRIPTION	PERCENTAGE
ROADS	(10%)
HABITATION	(10%)
TREES	(60%)
AGRICULTURAL LAND	(20%)

PLATE NO:I-B

DATE OF SURVEY : 05.04.2025

1Km Radius :

500m Radius :

Q.L.Applied Area :

TOPO SHEET NO. : 58 B/13

LATITUDE : 10° 48' 33.40"N to 10° 48' 40.79"N

LONGITUDE : 76° 54' 16.85"E to 76° 54' 27.67"E

APPLICANT:

THIRU. K.MAHALINGAM,
S/o.KANDHASAMY,
8/129,MADHESHWARAR KOVILHOTAM,
KUTTIGOUNDANPATTY,
KUMITIPATHY POST,
COIMBATORE DISTRICT,
TAMIL NADU.



LOCATION OF Q.L APPLIED AREA:

S.F NOS : 816/(P),818,819/1,822/1(P),2A(P) & 824/1A,
EXTENT : 3.01.00 Ha,
VILLAGE : SOKKANUR,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

APPROACH ROAD	
VILLAGE ROAD	
VILLAGE ROAD	
HABITATION	
TREES	
AGRICULTURAL LAND	
WIND DIRECTION	
QUARRY PIT	
CRUSHER PLANT	
ODAI / KUTTAI	
STATE BOUNDARY	
POWER LINE	

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

S.ILAVARASAN, M.Sc.,
QUALIFIED PERSON

Under Rule 15(i)(a) and (b) of the Tamil Nadu Land Revenue Act, 1908

PLATE NO: I-C

DATE OF SURVEY : 05.04.2025

APPLICANT:

THIRU. K. MAHALINGAM,
S/o. KANDHASAMY,
8/129, MADHESWARAR KOVIL THOIAM,
KUTTIGOUNDANIPATHY,
KUMITTIPATHY POST,
COIMBATORE DISTRICT,
TAMIL NADU.



LOCATION OF Q.L. APPLIED AREA:

S.F NOS : 816/(P), 818, 819/1, 822/1 (P), 2A (P) & 824/1A,
EXTENT : 3.01.00 Ha,
VILLAGE : SOKKANUR,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

Q.L. APPLIED AREA



APPROACH ROAD



STATE BOUNDARY



VILLAGE ROAD



ROUTE MAP

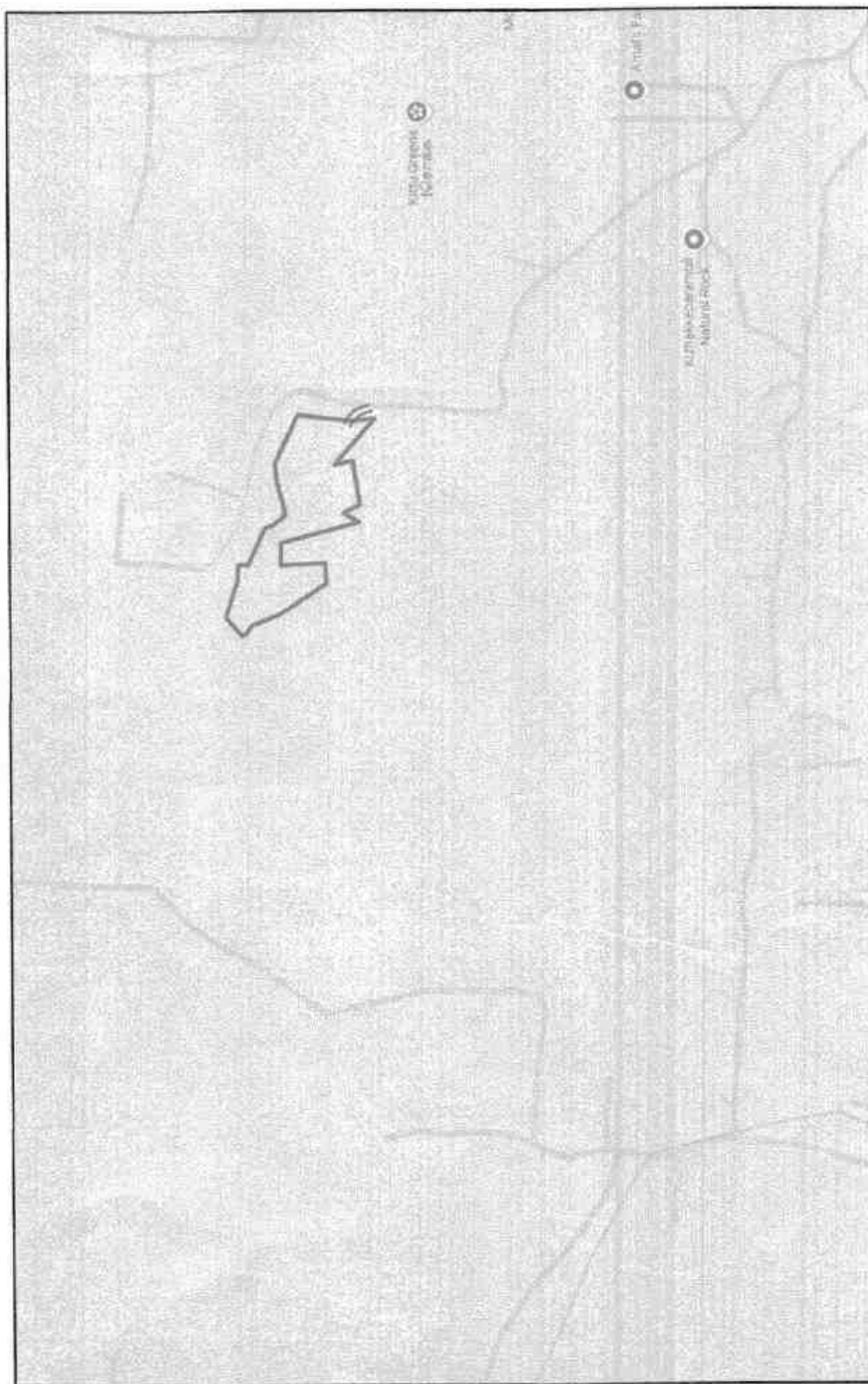
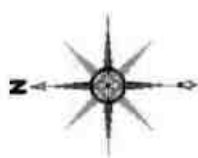
Not To Scale

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

S. Ilavarasan
S. ILAVARASAN, M.Sc.,
QUALIFIED PERSON

Under Rule 15(i)(a) and (b) of MCR, 2016



BOUNDARY CO-ORDINATES

DATUM : UTM-WGS84, ZONE 43 NORTH



S. M. 

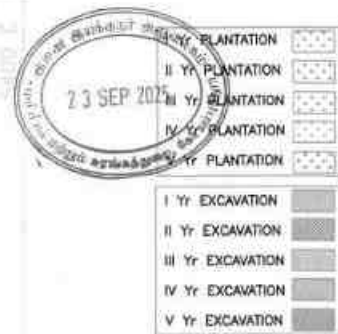
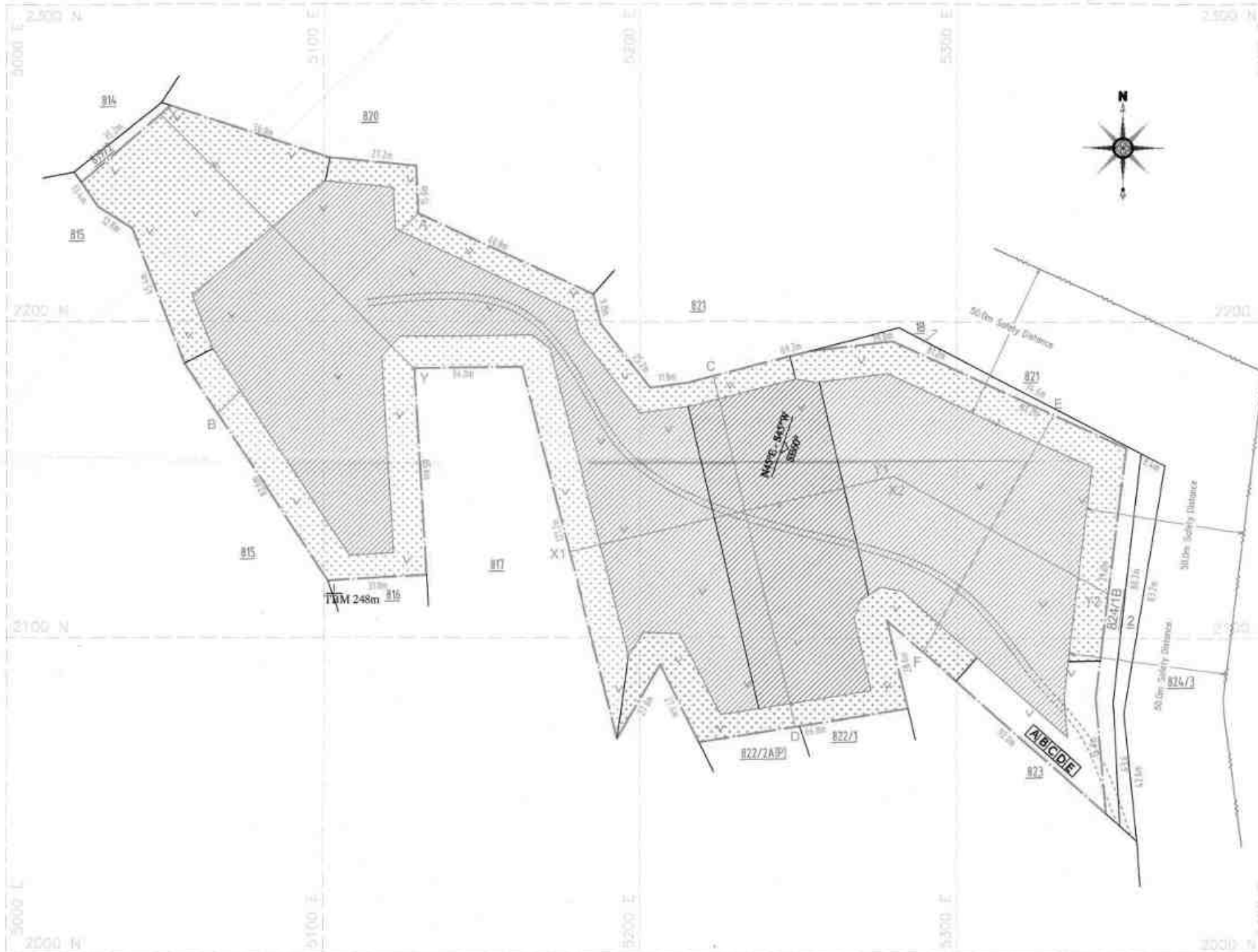


PLATE NO. III

DATE OF SURVEY :05.04.2025

APPLICANT:

THIRU. K.MAHALINGAM,
S/o.KANDHASAMY,
8/129,MADHESHWARAR KOVIL THOTTAM,
KUTTIGOUNDANPATHY,
KUMITIPATHY POST,
COIMBATORE DISTRICT,
TAMIL NADU.

LOCATION OF Q.L APPLIED AREA:

S.P NOS : 816/(P),818,819/1,822/1(P),2A(P) & 824/1A
EXTENT : 3.01.00 Ha.
VILLAGE : SOKKANUR,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

QUARRY LEASE BOUNDARY	[Symbol]
7.5m,10m, & 50m SAFETY DISTANCE	[Symbol]
APPROACH ROAD	[Symbol]
TEMPORARY BENCH MARK	[Symbol]
GRAVEL	[Symbol]
WETHERED ROCK	[Symbol]
STRIKE & DIP	[Symbol]
ROUGH STONE	[Symbol]
QUARRY ROAD	[Symbol]
POWER LINE	[Symbol]

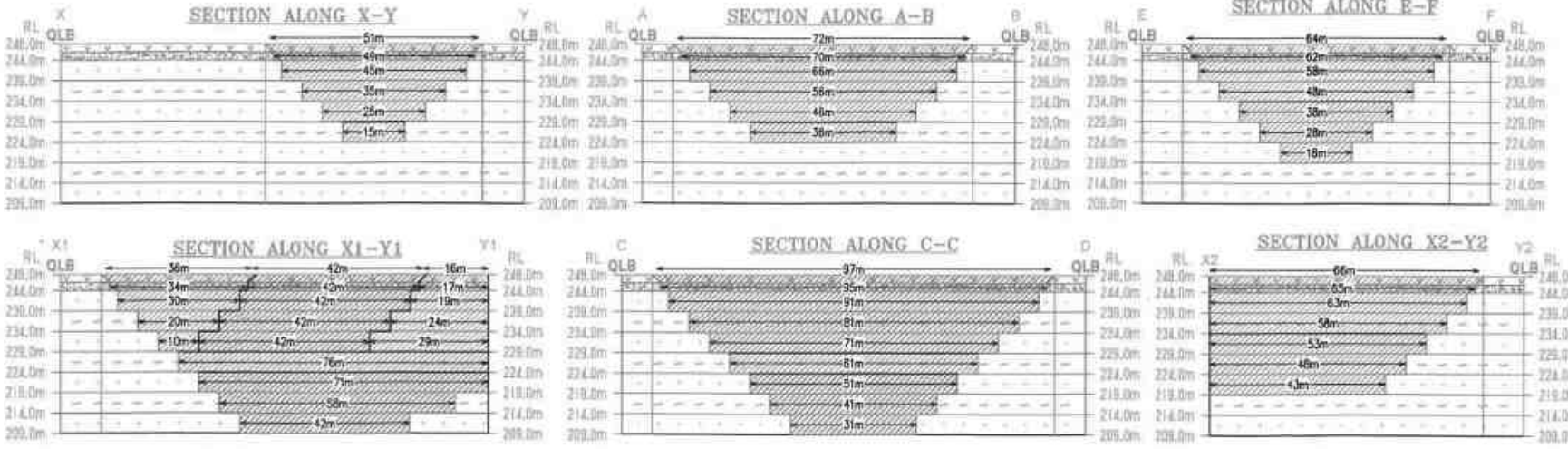
TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

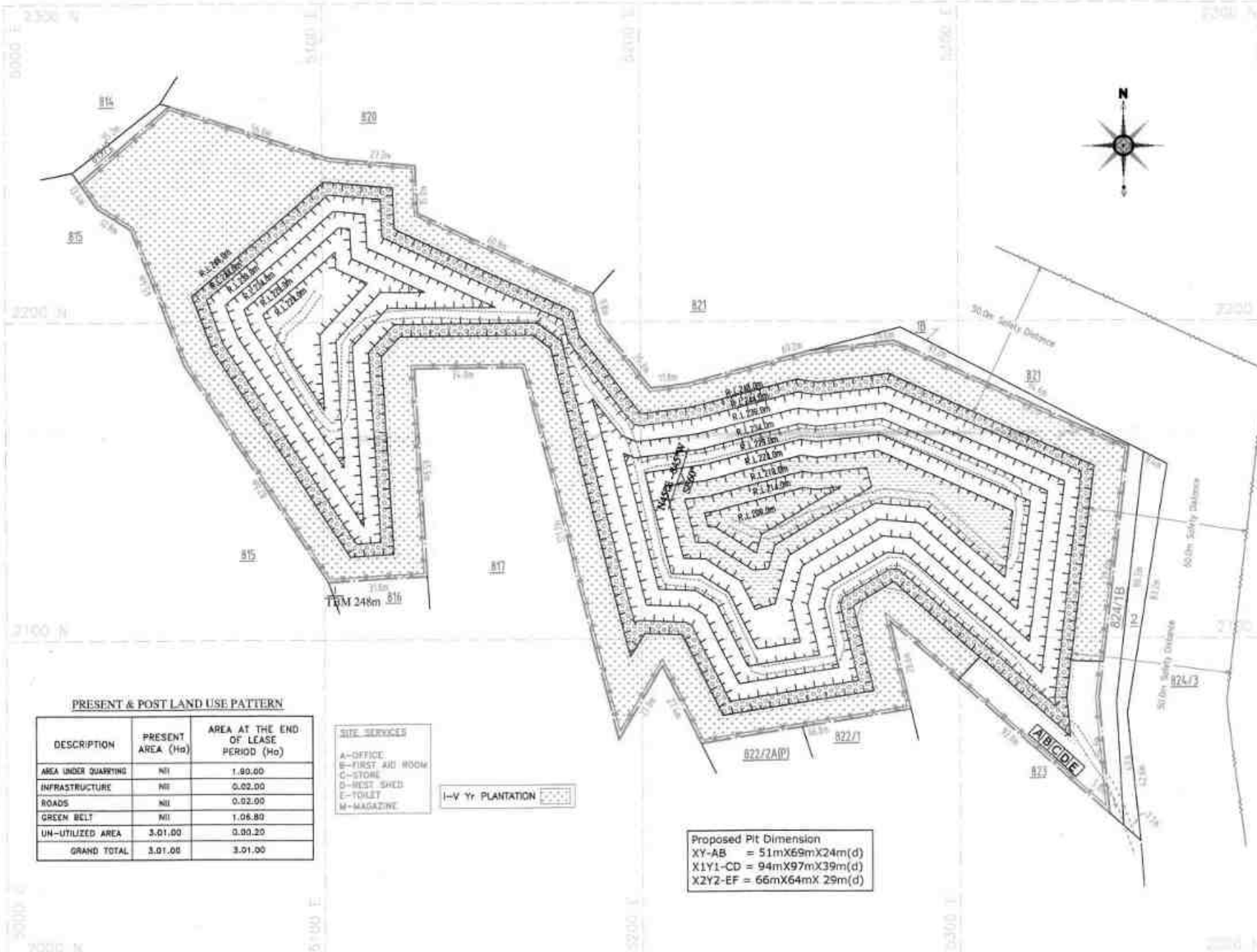
SCALE 1 : 1000

PREPARED BY:

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

[Signature]
PERSON
Under the provisions of MCR, 2018





PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF LEASE PERIOD (Ha)
AREA UNDER QUARRYING	Nil	1.80.00
INFRASTRUCTURE	Nil	0.02.00
ROADS	Nil	0.02.00
GREEN BELT	Nil	1.06.80
UN-UTILIZED AREA	3.01.00	0.00.20
GRAND TOTAL	3.01.00	3.01.00

SITE SERVICES
A-OFFICE
B-FIRST AID ROOM
C-STORE
D-REST SHED
E-TOILET
M-MAGAZINE

I-V Yr PLANTATION

Proposed Pit Dimension
XY-AB = 51mX69mX24m(d)
X1Y1-CD = 94mX97mX39m(d)
X2Y2-EF = 66mX64mX 29m(d)

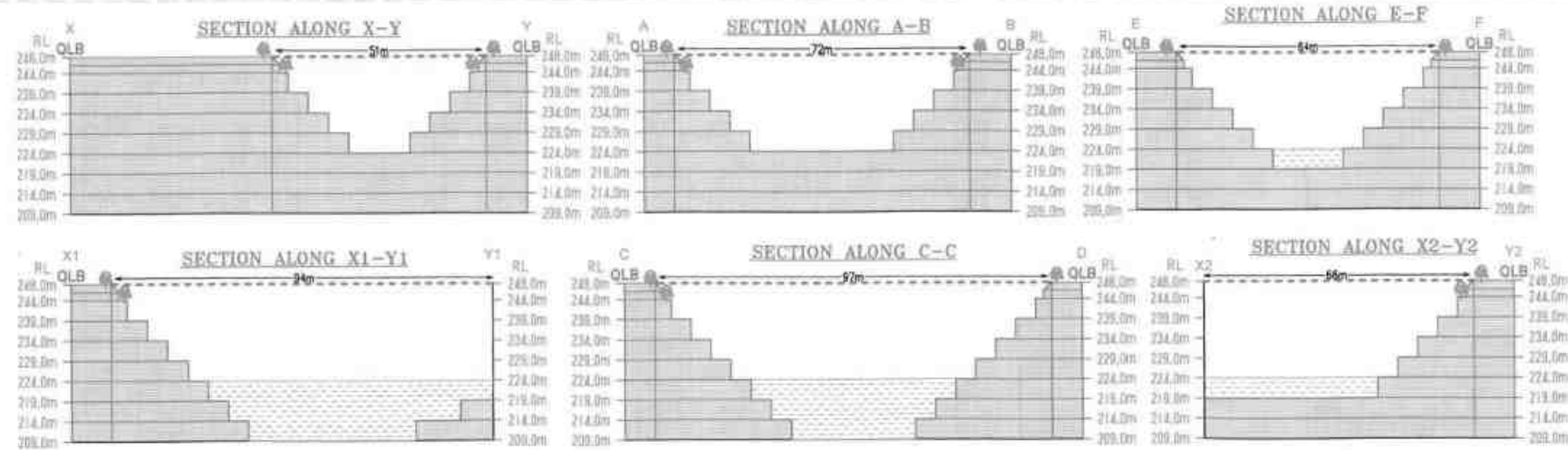


PLATE NO. IV

DATE OF SURVEY :05.04.2025

APPLICANT:

THIRU. K. MAHALINGAM,
S/O. KANDHASAMY,
8/129, MADHESHWARAR KOVIL THOTTAM,
KUTTIGOUNDANPATHY,
KUMITIPATHY POST,
COIMBATORE DISTRICT,
TAMIL NADU.

LOCATION OF Q.L. APPLIED AREA:

S.F. NOS : B16/P, B18, B19/1, B22/1(P), 2A(P) & B24/1A
EXTENT : 3.01.00 Ha.
VILLAGE : SOKKANUR,
TALUK : KINATHURADAVU,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

- QUARRY LEASE BOUNDARY
- 7.5m, 10m, & 50m SAFETY DISTANCE
- APPROACH ROAD
- TEMPORARY BENCH MARK
- STRIKE & DIP
- QUARRY ROAD
- QUARRY PIT
- TREES
- EXISTING LANDFORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE
- REHABILITATED LANDFORM
- FENCING
- PROPOSED GARLAND DRAIN
- POWER LINE

PROGRESSIVE QUARRY CLOSURE

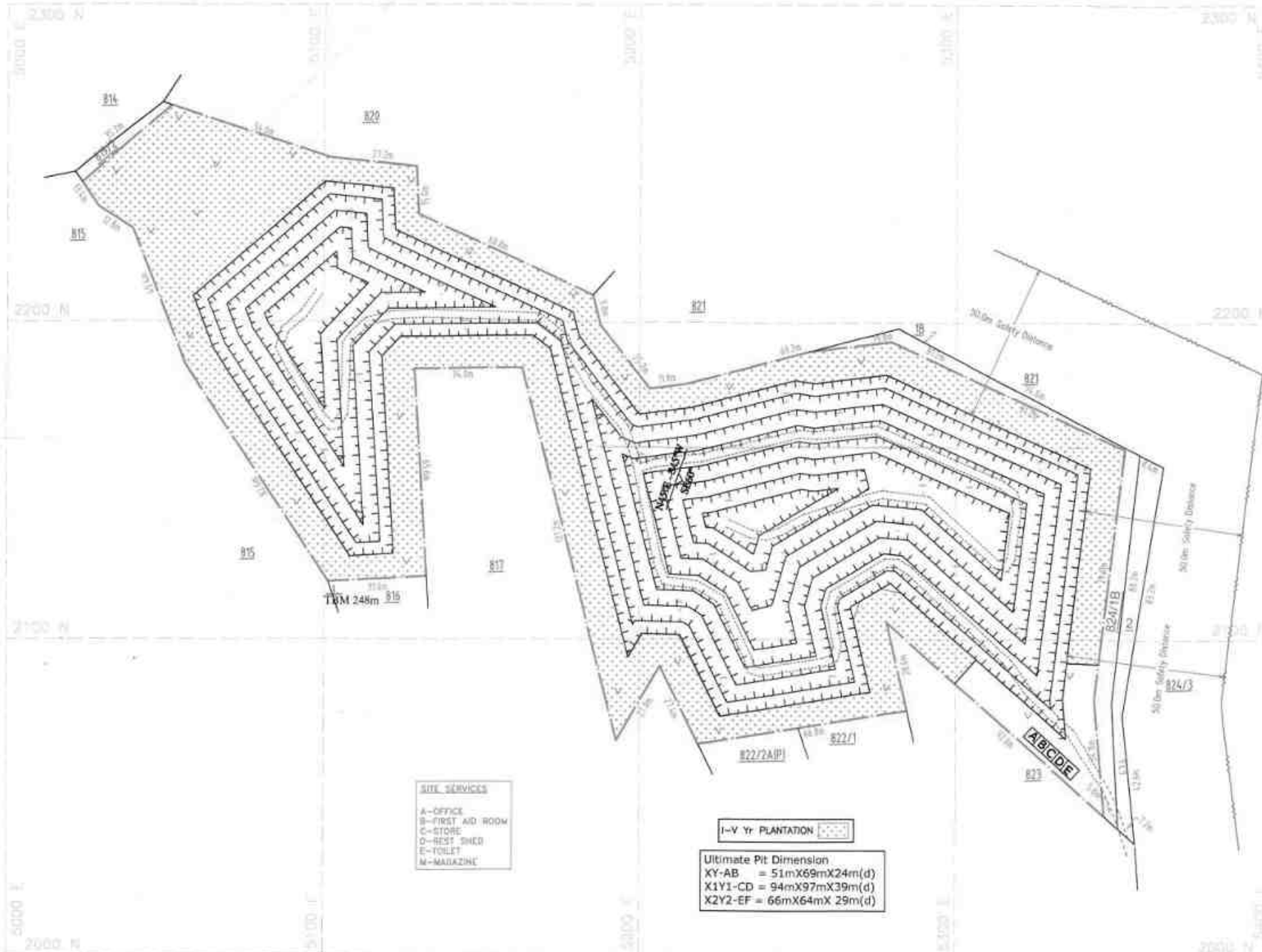
PLAN & SECTIONS

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

S. KANDHASAMY
S. KANDHASAMY
99A



SITE SERVICES
 A-OFFICE
 B-FIRST AID ROOM
 C-STORE
 D-REST SHED
 E-TOILET
 M-MAGAZINE

I-V Yr PLANTATION

Ultimate Pit Dimension
 XY-AB = 51mX69mX24m(d)
 X1Y1-CD = 94mX97mX39m(d)
 X2Y2-EF = 66mX64mX29m(d)

PLATE NO. V

DATE OF SURVEY :05.04.2025

APPLICANT:

THIRU. K.MAHALINGAM,
 S/o.KANDHASAMY,
 8/129,MADHESHWARAR KOVIL THOTTAM,
 KUTTIGOUNDANPATHY,
 KUMITIPATHY POST,
 COIMBATORE DISTRICT,
 TAMIL NADU.

LOCATION OF Q.L APPLIED AREA:

S.F NOS : 816/(P),818,819/1,822/1(P),2A(P) & 824/1A
 EXTENT : 3.01.00 Ha.
 VILLAGE : SOKKANUR,
 TALUK : KINATHUKADAVU,
 DISTRICT : COIMBATORE,
 STATE : TAMILNADU.

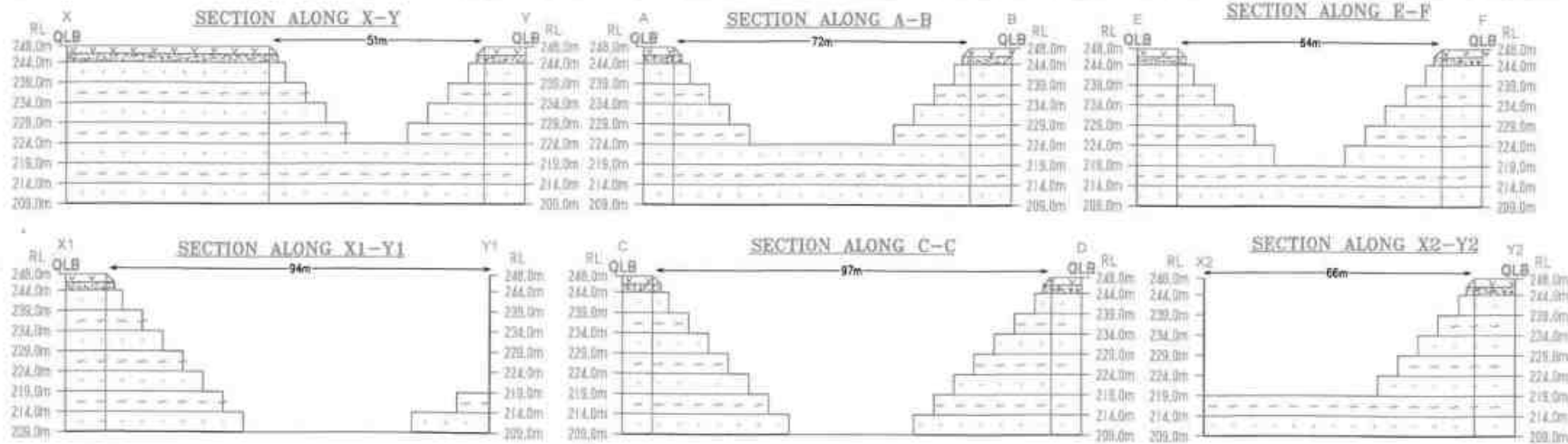
INDEX

QUARRY LEASE BOUNDARY	
7.5m,10m.& 50m SAFETY DISTANCE	
APPROACH ROAD	
TEMPORARY BENCH MARK	
GRAVEL	
WETHERED ROCK	
STRIKE & DIP	
ROUGH STONE	
QUARRY ROAD	
QUARRY PIT	
POWER LINE	

**CONCEPTUAL
 PLAN & SECTIONS
 SCALE 1 : 1000**

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
 PLATE IS TRUE AND CORRECT TO THE BEST OF MY
 KNOWLEDGE BASED UPON THE LEASE MAP
 AUTHENTICATED BY STATE GOVERNMENT
 100A
 Order No. 15(2)(a)and(b) of MCR,2018





SRI ANJANEYA EXPLOSIVES

EXPLOSIVES BLASTING CONTRACTORS

LICENCE No : E/SC/TN/22/200 (E10569)

Prof : A. THANGARAJ

ANNEXURE - XIV

C/o Raja Medicals Main Road,
Koduvai Post, Tirupur District

Phone : 0421-2312610

Mobile : 98422 76627

Date 23.03.2022

To:

Thiru.N.Mahalingam,

S/o Natarajan,

Door No:- 6/3, Vengannan Street,

Pollachi(Tk),Coimbatore (Dist).

Sir,

Sub:-Regarding blasting Work using explosives in your proposed quarry.

We are having explosive license No. in Form 22 holding No:E10559, Situated magazine in SF NO:1335/1, Nelali Village, Kangayam Taluk, Tirupur Dist ,Our office functioning at Address 4/356-Velliyampalayam Village,Koduvai Post, Tirupur Taluk&Dist.

We are having two explosive vans for transporting Detonators and Class 2 explosive separately from our magazine to work sites and we have well experienced and licensed blasters and short firer's for safety blasting works for the last Five years without any untoward incidents.

We are willing to undertake blasting work on contract basis at your S.F.NO:- 133/1A2 (Part) (0.86.25 hec), 133/1B (Part) (0.13.75 hec) at the extent (1.00.0) hectores at Thensangampalayam Village, Anaimalai (Taluk), Coimbatore (Dist), Tamil Nadu.

Thanking you,

Signature,

A.Thangaraj

(Authorized Signatory)

For Sri Anjeneya Explosives



भारत सरकार | Government of India
वाणिज्य और उद्योग मंत्रालय | Ministry of Commerce & Industry
पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पेसो) | Petroleum & Explosives Safety Organisation (PESO)
पूर्व नाम: विस्फोटक विभाग | Formerly: Department of Explosives
A और D-विंग, ब्लॉक 1-8, दूसरा तल: शास्त्री भवन | A & D - Wing, Block 1-8, 2nd Floor, Shastry Bhawan
26 हड्डोडस रोड, नुंगम्बक्कम चेन्नई | 26 Haddous Road, Nungambakkam Chennai 600006
फोन (Phone): 28281023 फैक्स (Fax): 28284848
ई-मेल Email: pceso@peso.gov.in

संख्या (No): E/SC/TN/22/200(E10559)

दिनांक (Date): 19/03/2019

सेवा में | To,

Sh ANJANEYA EXPLOSIVES & CO.,
MAIN ROAD, KODUVAI-patti, Tinneri Village - KODUVAI
District-TIRUPUR, State-Tamil Nadu, Pincode - 638660

विषय

Survey No(s).1355/1, ग्राम NELALI,KANGAYAM taluk, जिला TIRUPUR, राज्य Tamil Nadu में विस्फोटक के मैगजीन में उपयोग के लिए कब्जा हेतु
विस्फोटक नियम 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति सं E/SC/TN/22/200(E10559) के नवीनीकरण संदर्भ में।

Subject

Possession for Use of Explosives from magazine situated at Survey No(s). 1355/1, NELALI,KANGAYAM taluk, Dist. TIRUPUR, Tamil Nadu Licence
No. E/SC/TN/22/200(E10559) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding

महोदय | Sir

आपका उपरोक्त विषय पर पत्र संख्या 4 दिनांक 01/03/2019 का लटर्न ग्रहण करें। विस्फोटक नियम 2008 के अंतर्गत प्रारूप LE-3 में जारी अनुज्ञप्ति दिनांक 31/3/2024 तक
नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।
Reference to your letter No. 4 dated: 01/03/2019, the subject licence duly renewed upto 31/3/2024 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith
अनुज्ञप्ति के आगामी नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/2024 से पहले इस कार्यालय को भेजे जाएं
For further renewal of licence, please submit the following documents so as to reach this office on or before 31/3/2024

- प्रारूप आरई-1 में विधिवत पूर्ण एवं हस्ताक्षरित आवेदन।
Application in Form RE-1 duly filled in and signed.
- एक से पाँच वर्ष के अनुज्ञप्ति शुल्क का बैंक ड्राफ्ट। बैंक ड्राफ्ट किसी भी राष्ट्रीयकृत बैंक के नाम आहरित, संयुक्त मुख्य विस्फोटक निर्वहक, चेन्नई के पक्ष में
चेन्नई में देय हों।
Licence fees for one to five years in the form of demand draft drawn on any Nationalized Bank in favour of Jt. Chief Controller of Explosives, Chennai payable
at Chennai
- अनुमोदित प्लान के साथ मूल अनुज्ञप्ति।
Original licence with approved plan
- कृपया इस संबंध में विस्फोटक नियम 2008 के नियम 112 का भी संदर्भ ग्रहण करें।
In this connection, please also refer to Rule 112 of Explosives Rules, 2008
- विस्फोटकों के क्रय हेतु आरई-11 में मागपत्र (डेंडेंट) आपूर्तिकर्ता को दिया जाए और उसी की एक प्रति इस कार्यालय को भेजी जाए (आतिशबाजी गोदाम के लिए
लागू नहीं)।
Indent for purchase of explosives shall be placed in RE-11 with the supplier and copy of the same shall be sent to this office. (Not applicable for fireworks store
house)
- कृपया विस्फोटकों की वार्षिक विवरणी हर तिमाही के अंत में आरई-7 में प्रस्तुत की जाए। विवरणी इस कार्यालय के कार्यालय में आगामी तिमाही के 10 तारीख
से पहले पहुंच जानी चाहिए (आतिशबाजी गोदाम के लिए लागू नहीं)। Please submit quarterly returns of explosives in RE-7 at the end of every quarter so as to
reach this office by 10th of the succeeding quarter (Not applicable for fireworks store house)
- सभी ब्लास्टिंग ऑपरेशन एक सक्षम द्वारा की जाएगी जो उपरोक्त नियमों के तहत एक वैध शॉट फायर प्रमाणपत्र धारक हो। हालांकि, खान अधिनियम 1952 के
अधीन आने वाले खानों में ब्लास्टिंग ऑपरेशन करने वाले ब्लास्टर की योग्यता उसी अधिनियम से निर्धारित हो।
All blasting operations shall be carried out by a competent person holding a valid shot firer's permit granted under above rules. However, blasting operations in
mines coming under the purview of the Mines Act 1952, the blaster shall have qualifications prescribed in the regulations framed under the said Act.

आपका विश्वसनीय,

(D.C. FA) (D.C. FA)

विस्फोटक नियंत्रक | Controller of Explosives

कृते संयुक्त मुख्य विस्फोटक निर्वहक | For Joint Chief Controller of Explosives

दक्षिणांचल, चेन्नई | South Circle, Chennai

प्रतिलिपि प्रेषित | Copy Forwarded to

1 जिला मजिस्ट्रेट (District Magistrate), TIRUPUR (Tamil Nadu)- सूचना के लिए (for information)

कृते संयुक्त मुख्य विस्फोटक नियंत्रक | For Joint Chief Controller of Explosives

दक्षिणांचल, चेन्नई | South Circle, Chennai

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क आदि के लिए हमारी वेबसाइट <http://peso.gov.in> देखें।
(For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

अनुज्ञप्ति प्रारूप एल.ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)
(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने
Licence to possess (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञप्ति सं. (Licence No.): E/SC/TN/22/2008(E10559)

वार्षिक फीस रुपये (Annual Fee Rs): 3600/-

1. Licence is hereby granted to

Sri ANJANEYA EXPLOSIVES & CO. (अधिभोगी / Occupier : Sri A. Thangaraj), MAIN ROAD, KODUVAL-post,
Town/Village - KODUVAL District-TIRUPUR, State-Tamil Nadu, Pincode - 638660

को अनुज्ञप्ति अनुदत्त की जाती है।

2. अनुज्ञप्तिधारी की प्रस्थिति Status of licensee Partnership Firm

3. अनुज्ञप्ति निम्नलिखित प्रयोजनों के लिए विधिमन्व्य है।

possess for use of Nitrate Mixture, Detonators, Safety Fuse, Detonating Fuse, के
उपयोग के लिए

Licence is valid only for the following purpose

4. अनुज्ञप्ति विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमन्व्य है।

Licence is valid for the following kinds and quantity of explosives - (क) (a)

क्र. Sr. No	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1	Nitrate Mixture	2.0	0	1000 Kg
2	Detonators	6.3	0	15000 Nos
3	Safety Fuse	6.1	0	5000 Mtrs
4	Detonating Fuse	6.2	0	10000 Mtrs

(ब) किसी एक कैलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञप्ति के लिए)

25 times
as above.

(b) Quantity of explosives to be purchased in a calendar month (applicable for licence under article 3(b) and (c))

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञप्ति परिसर की पुष्टि होती है।

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/2008(E10559)

The licensed premises shall conform to the following drawing(s):

दिनांक (Dated) 09/12/2002

6. अनुज्ञप्ति परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address

Survey No(s). 1355/1, ग्राम (Town/Village): NELALLKANGAYAM taluk
जिला (District) TIRUPUR राज्य (State)
दूरभाष (Phone) 9842276627 ई. मेल (E-Mail)

Tamil Nadu

पुलिस थाना (Police Station): KODUVAL
पिनकोड (Pincode)
फैक्स (Fax)

7. अनुज्ञप्ति परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।

The licensed premises consist of following facilities.

MAIN ROOM LOBBY AND DETONATORS (since detonating fuse also to be
accounted and accommodated and accordingly the high explosives quantity is
restricted to 1000kg)8. अनुज्ञप्ति समय समय पर यथासंशोधित विस्फोटक अधिनियम 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और
निम्नलिखित उपबंधों के अधीन रहते हुए अनुदत्त की जाती है।The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2004 framed there under and the
conditions, additional conditions and the following Annexures

- उपयुक्त क्रम सं 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।
Drawings (showing site, constructional and other details) as stated in serial No. 5 above
- अनुज्ञप्ति प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञप्ति की शर्तों और अतिरिक्त शर्तों।
Conditions and Additional Conditions of this licence signed by the licensing authority
- दूरी प्रारूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञप्ति तारीख 31 मार्च 2004 तक विधिमन्व्य रहेगी। This licence shall remain valid till 31st day of March 2004.

यह अनुज्ञप्ति अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपबन्धित इस अनुज्ञप्ति की शर्तों का
अधिक्रमण करने या यदि अनुज्ञप्ति परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिरिक्त की जा सकती है जहां
वह लागू हो।This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII,
wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached
hereto

तारीख The Date - 09/12/2002

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives
South Circle, Chennai

Amendments:

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 03/06/2011
- Change in Authorized Signatory/Occupier/Partners/Directors dated : 28/12/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 29/05/2012
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 22/05/2014
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 04/12/2014

नवीनीकरण के पृष्ठान्न के लिए स्थान
Space for Endorsement of Renewalनवीकरण की तारीख
Date of Renewal

19/03/2019

समाप्ति की तारीख
Date of Expiry

31/03/2024

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प
Signature of licensing authority and stamp

Jt. Chief Controller of Explosives, South Circle, Chennai



Form DE-2
(See rule 113 of the Explosives Rules, 2008)
(Distance Form to be attached to the licence)

Safety distances required to be kept clear around magazine for high explosives or fire works or factory licence number E/SC/TN/22/200(E10559) in form LE-3 granted to Sri ANJANEYA EXPLOSIVES & CO., MAIN ROAD, KODUVAI-post, Tamil Nadu..

Type of Structure(s)		Safety distances meters	
Inside Safety Distances(ISD)		M	UM
1	Room or Workshop used in Connection with the Magazine	26	39
2	Any other Explosives Magazine or store House or Factory of the Applicant		
3	Magazine Office		
Middle Safety Distances(MSD)			
4	Magazine Keeper's or Chowkidar's Dwelling house		
5	Railway including Minerals and Private Railways		
6	Canal (in active use) or other navigable water		
7	Dock or Pier or Jetty		
8	Public Highway or Public Road		86
9	Private Road which is PRINCIPAL means of access to a Temple, Mosque, Church, Gurudwara or other places of worships, Hospital, College, School or Factory		
10	River Embankment or Sea Embankment or Public Well		
11	Reservoir or Bounded tank/rope way		
12	Windmillor or Solar panel for Power Generation		
Outside Safety Distances(OSD)			
13	Dwelling House		
14	Govt. and Public Building		
15	Temple, Mosque, Church or Gurudwara or other Places of Worships		
16	Shops, Market place, Public recreation and Sports Ground, College, School, Hospital, Theater, Cinema or other Building where the public are accustomed to assemble		
17	Factory		
18	Buildings or Works used for the Storage in Bulk of Petroleum, Sprit, gas, or other inflammable or hazardous substances		171
19	Building or Works used for Storage and Manufacture of Explosives or of articles which contain Explosives		
20	Aerodrome		
21	Furnace, Kiln or Chimney		
22	Quarry or mine pit head		
23	Power House or Electric Substation		
24	Wireless Station		
25	Warehouse or other Storage Building		
26	Any other Protected works		
Overhead Electric lines			
27	Electric Power over head Transmission Lines above 440V	90	
28	Electric Power over head Transmission Lines upto 440V	15	

The Date : 09/12/2002

For Joint Chief Controller of Explosives
South Circle, Chennai

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 03/06/2011

166

Cert No. MR/52/901



भारत सरकार/Government of India
खान अधिनियम, 1952/Mines Act, 1952
खनन परीक्षा बोर्ड/Board of Mining Examinations
खनन मेट सक्षमता प्रमाण पत्र

MINING MATE'S CERTIFICATE OF COMPETENCY
(केवल ओपनकास्ट खानों तक सीमित)

(Restricted to mines having opencast workings only)

(धात्विकीय खान विनियम, 1961 के अन्तर्गत)

(Under the Metalliferous Mines Regulations, 1961)

श्री जयकुमार के
जिनकी जन्म तिथि 07.05.1971

सुपुत्र कडसामी

आयु, स्वस्थता, सदाचार, साक्षरता और धात्विकीय खानों में काम करने के विहित अनुभव का सन्तोषजनक प्रमाण प्रस्तुत करने एवं दिनांक 24.03.2018 को जी.वी.टी.सी. बोचो केन्द्र पर आयोजित विहित परीक्षा में उत्तीर्ण होने पर एतद्वारा केवल ओपनकास्ट खानों तक सीमित मेट सक्षमता प्रमाण पत्र प्रदान किया जाता है।

Shri Jayakumar K

born on 07.05.1971

son of Kandasamy

having given satisfactory evidence of his age, medical fitness, good character, literacy and prescribed experience of working in metalliferous mines and having passed the prescribed examination held at GVTC, Trichy

centre on 24.03.2018

is hereby granted MINING MATE'S CERTIFICATE OF COMPETENCY restricted to mines having opencast workings only.

बाएं हाथ का निशान
Left hand thumb impression

अंचल सचिव

खनन परीक्षा बोर्ड

Zonal Secretary
Board of Mining
Examinations

अध्यक्ष

खनन परीक्षा बोर्ड

Chairman
Board of Mining
Examinations

Signed and Sealed

Date 08.04.2018



GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY
PETROLEUM AND EXPLOSIVES SAFETY ORGANISATION (PESO)
(Formerly Department of Explosives)
A & D - Wing, Block 1-8, 11th Floor, Shastri Bhavan
26 Huddons Road, Nungambakkam Chennai 600006
Tele: 28281023 Fax: 28284848
Email: jtccechennai@explosives.gov.in

No.E/SC/TN/25/745(E71911)

Dated : 14/02/2018

To,

A Thangaraj,

M/s. Sri Anjaneya Explosives, Raja Complex, Koduvai (Post), Tiruppur.

Tavan Village - Tiruppur

Dist. TIRUPUR, State. Tamil Nadu, Pincode-6

Subject: Road Van for the carriage of Explosives Registration No TN-42 H 4253 Licence No.E/SC/TN/25/745(E71911) granted in Form LE-7 of Explosives Rules 2008 - Renewal regarding

Sir(s):

Reference to your letter No.: NIL dated: 12/02/2018, the subject licence duly renewed upto 31/3/2023 and issued in Form LE-7 of Explosives Rules, 2008 is forwarded herewith.

For further renewal of licence, please submit the following documents so as to reach this office on or before 31/3/2023.

- Application in Form RE-1 duly filled in and signed.
- Licence fees for one to five years in the form of demand draft drawn on any Nationalized Bank in favour of Jt. Chief Controller of Explosives, Chennai payable at Chennai.
- Original licence with approved plan.
- In this connection, please also refer to Rule 112 of Explosives Rules, 2008.

Please follow following instructions strictly:

1. The records of explosives transported by the licenced Roadvan shall be maintained in the proforma RE-6 under Part 5 of schedule V of Explosives Rules 2008.
2. Please ensure that persons whose antecedents verified by the local Police shall only be employed with the licenced explosives roadvan/compressor mounted truck as drivers or cleaners. List of such drivers and cleaners alongwith the personal particulars shall be made available to the local police in advance. The re-verification of such staff shall also be made at least once in a year in compliance to Rule 61(3) of Explosives Rules 2008.
3. Please note that during transportation of explosives, the Roadvan shall always be attended to by two armed guards. If the consignment of explosives is likely to pass through sensitive areas notified by Ministry of Home Affairs, it should be escorted by armed Police escort / guard provided by District Police Administration as required in Rule 67(7) of Explosives Rules 2008.

An amount of Rs. 300/- balance is in your credit, which may be utilized for future transaction by quoting this reference.

Enclosures :

14-Feb-18

106 A68

Not Endorsed under Rule 17 of Explosives Rules, 2008

NOTED BY THE CONTROLLER OF EXPLOSIVES, Tirunelveli/05/06/2013

अनुज्ञप्ति प्रारूप एलई - 7 | LICENCE FORM LE-7
(विस्फोटक नियम 2008 की अनुसूची 4 के भाग 1 का अनुच्छेद 7 देखें)
(See article no 7 of Part 1 of Schedule IV of Explosives Rules, 2008)

अनुज्ञप्ति : सड़क वैन में विस्फोटकों के परिवहन के लिए
Licence to : transport explosives in a road van



अनुज्ञप्ति संख्या / Licence No. : E/SC/TN/25/745(E71911)
वार्षिक फीस रूपर / Annual Fee Rs : 2500/-

1. अनुज्ञप्ति एतद्वारा जारी की जाती है

Licence is hereby granted to : A Thangaraj (Occupier : A. Thangaraj)
M/s. Sri Anjaneya Explosives, Raja Complex, Koduvani (Post),
Tiruppur.,

District-TIRUPUR, State-Tamil Nadu, Pincode-0

अनुज्ञप्तिधारी की प्रास्थिति / Status of licensee : Individual
सड़क वैन की विशिष्टियाँ / Particulars of the road van:

पंजीकरण संख्या / Registration No.

TN-42 H 4253

यान का मेक एवं मॉडल / Make and model of vehicle

071 MAHINDRA AND
MAHINDRA LD.

लदान रहित वजन / Unladen weight

1875 Kg(s)

लदान सहित अधिकतम वजन / Maximum laden weight

2450 Kg(s)

परिवहन के लिए अनुज्ञेय विस्फोटकों की अधिकतम मात्रा

575 Kg(s)

Maximum quantity of explosives permitted for transport

इंजिन संख्या / Engine No.

GLC1M88147

चैसिस संख्या / Chassis No.

MA1ZP2GLKD1A11076

अन्य फिटिंग्स का विवरण / Description of Other Fittings

Fire Extinguisher, Spark
Arrestor

वाहन के लिए अनुमत्य विस्फोटकों की मात्रा / Quantity of Explosives
permitted to carry

575 Kg(s)

4. अनुज्ञप्त परिसर निम्नलिखित आरेखण (आरेखणों) के अनुरूप होना चाहिए / The licensed
premises shall conform to the following drawing(s):

आरेखण संख्या / Drawing No : E/SC/TN/25/745(E71911) दिनांक / dated : 05/06/2013

5. समय समय पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए

विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुलग्नकों के अधीन अनुज्ञप्ति
प्रदान की जाती है

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to
time and the Explosives Rules, 2008 framed thereunder and the conditions and the following

Licence Endorsed under Rule 107(1) of Explosives Rules, 2008
In Shri Dr. S.K. Dind, Controller of Explosives, Chennai on 06/11/2010

अनुज्ञप्ति प्ररूप एलई - 7 / LICENCE FORM LE-7
(विस्फोटक नियम 2008 की अनुसूची 4 के भाग 1 का अनुच्छेद 7 देखें)
(See article no 7 of Part 1 of Schedule IV of Explosives Rules, 2008)

अनुज्ञप्ति : सड़क वैन में विस्फोटकों के परिवहन के लिए
Licence to : transport explosives in a road van

अनुज्ञप्ति संख्या / Licence No. : E/SC/TN/25/595(E56115)
वर्षिक फीस रूप / Annual Fee Rs. 2500/-



1 अनुज्ञप्ति एतद्वारा जारी की जाती है

Licence is hereby granted to :

Sri.A.Thangaraj (Occupier : A.Thangaraj)

Sri Anjaneya Explosives & Co., C/o. Raja Medicals, Koduvai (Post), Tiruppur District, Tamilnadu,
District-TIRUPUR, State-Tamil Nadu, Pincode-638660

2 अनुज्ञप्तिधारी की प्राप्ति / Status of licensee : Individual

3 सड़क वैन की विशेषताएँ / Particulars of the road van:

पंजीकरण संख्या / Registration No.

यान का मेक एवं मॉडल / Make and model of vehicle

लदान रहित वजन / Unladen weight

लदान सहित अधिकतम वजन / Maximum laden weight

परिवहन के लिए अनुज्ञेय विस्फोटकों की अधिकतम मात्रा
Maximum quantity of explosives permitted for transport

इंजिन संख्या / Engine No.

चैसिस संख्या / Chassis No.

अन्य फिटिंग्स का विवरण / Description of Other Fittings

वाहन के लिए अनुमत्य विस्फोटकों की मात्रा / Quantity of Explosives permitted to carry

TN42 C 3839

Mahindra Mahindra Ltd

1830 Kg(s)

2450 Kg(s)

620 Kg(s)

GKA 1 F 39797

MAIZP 2GKAA 1F43598

Fire extinguishers, Spark Arrestor, Battery,
cutoff switch.

620 Kg(s)

4 अनुज्ञप्त परिसर निम्नलिखित आरेखण (आरेखणों) के अनुरूप होना चाहिए / The licensed premises shall conform to the following drawing(s).
आरेखण संख्या / Drawing No : E/SC/TN/25/595(E56115) दिनांक / dated : 26/11/2010

5 समय समय पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुलग्नकों के अधीन अनुज्ञप्ति प्रदान की जाती है।
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following annexures.

(क) उपर्युक्त क्रम संख्या 4 में यथाकथित सड़क वैन का आरेखण / (a) Drawings of the road van as stated in serial no.4 above.
(ख) अनुज्ञापन प्राधिकारी द्वारा हस्ताक्षरित शर्तें / (b) Conditions signed by the licensing authority.

6 यह अनुज्ञप्ति तारीख 31 मार्च 2015 तक विधिमान्य रहेगी / This licence shall remain valid till 31st day of March 2015

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या इस अनुज्ञप्ति की शर्तों के उल्लंघन, अनुसूची 5 के भाग 4 में सन्दर्भित, जहाँ भी लागू हो, या यदि अनुज्ञप्त परिसर आरेखण या उससे संलग्न उपाबद्धों में दर्शाए गए विवरण के अनुरूप नहीं पाए जाने पर निलम्बित या प्रतिसंशुद्ध की जा सकती है।
This licence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and annexure attached hereto.

दिनांक / Date: 26/11/2010

संयुक्त मुख्य विस्फोटक नियंत्रक / Joint Chief Controller of Explosives
वर्किंगचल, क्षेत्र / South Circle, Chennai

Sd/-

अनुज्ञप्ति के नवीनीकरण हेतु पत्रांकन / Endorsement for renewal of licence:

नवीनीकरण की तिथि
Date of Renewal

वैधता समाप्ति की तिथि
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर
Signature of licensing authority

16/03/2020

31/03/2025

J. Chief Controller of Explosives, South Circle, Chennai

वैधानिक चेतावनी : विस्फोटकों का सापरावाही से प्रयोग या दुरुपयोग, विधि के अधीन गम्भीर दण्डनीय अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

அனுப்புநர் :

தூணைம ஆசிரியர்,
மதுக்கரை ஊராட்சி ஒன்றிய ரிதூட்கம்பள்ளி,
மாரிச்செட்டிபதி.
குமிட்டிபதி. (அ)
ரெத்தக்கநல் மண்டபம் [வழி]

கோயமுத்தூர் மாவட்டம் - 641032.

பெறுநர் :

மாநில சுற்றுச்சூழல்தாக்க மதிப்பீட்டு ஆணையர் அவர்கள்,
ரிசனண.

மதிப்பிற்குரிய ஐயா,

பயாருள் : பள்ளிக்குத் தேவையான அடிப்படை வசதிகள்
ரிசய்தல் மற்றும் படிதுபார்த்தல் - சார்பாக

கோயமுத்தூர் மாவட்டம், மதுக்கரை ஒன்றியம்.
திருமணையாம்பாளையம் பேரூராட்சி உபபட்ட குடிசுண்டன்பதி,
திராமத்தின் வசிக்கும் க. மகாலிங்கம் திராவிட சி. கந்தசாமி கண்ணடர்
அவர்கள் சர்வே எண் 816/Part), 818, 819/1, 822/1 Part 822/2A (Part)
and 824/1A ரிசனண ஆர் கிணத்துக்கலு ஒன்றியம் ஆகிய புலத்தில்
குவாரி பணிகள் ரிசய்து வருகின்றன. அது சமயம் ரங்கன் பள்ளிக்கு
மரம், ரிசனண நுடய ரிசய்தல் மற்றும் வருப்பதற, கழிப்பதற, சுற்றுச்
சுவர் ஆகியவற்றிற்கு வண்ணம் தீட்டுதல் மற்றும் படிதுபார்த்தல்,
பள்ளிக்கு குடிநீர் வசதி ரிசய்து துருதல் பொன்ற துங்கனாள் ரூண
உதவியினை ரிசய்து பள்ளியின் வாரச்சீக்கி உதவிமறது கனிவுடன்
கெட்டுக் ரிகண்டதன் பெரிள் பள்ளிக்குத் தேவையான அடிப்படை
வசதிகளை ரிசய்து துர சம்மதம் ரிதரிவித்துள்ளனர் என்பதைத்
துங்கனாக்குப் பணிவுடன் ரிதரிவித்துக் ரிகண்கிடெண். மேலும்
2023-24 ஆம் கல்வியாண்டில் ரங்கன் பள்ளியின் கல்வி
நலனுக்காக வருப்பதறயின் பெருங்கறையின் waterproof paint
அடித்து துருதுள்ளனர் என்பதையும் துங்கனாக்குப் பணிவுடன்
ரிதரிவித்துக் ரிகண்கிடெண்.

நுன்தி

இடம் : கோயமுத்தூர்

நாள் : 29-09-2025

இப்படிக்கு ,

கராநு

தூணைம ஆசிரியர்

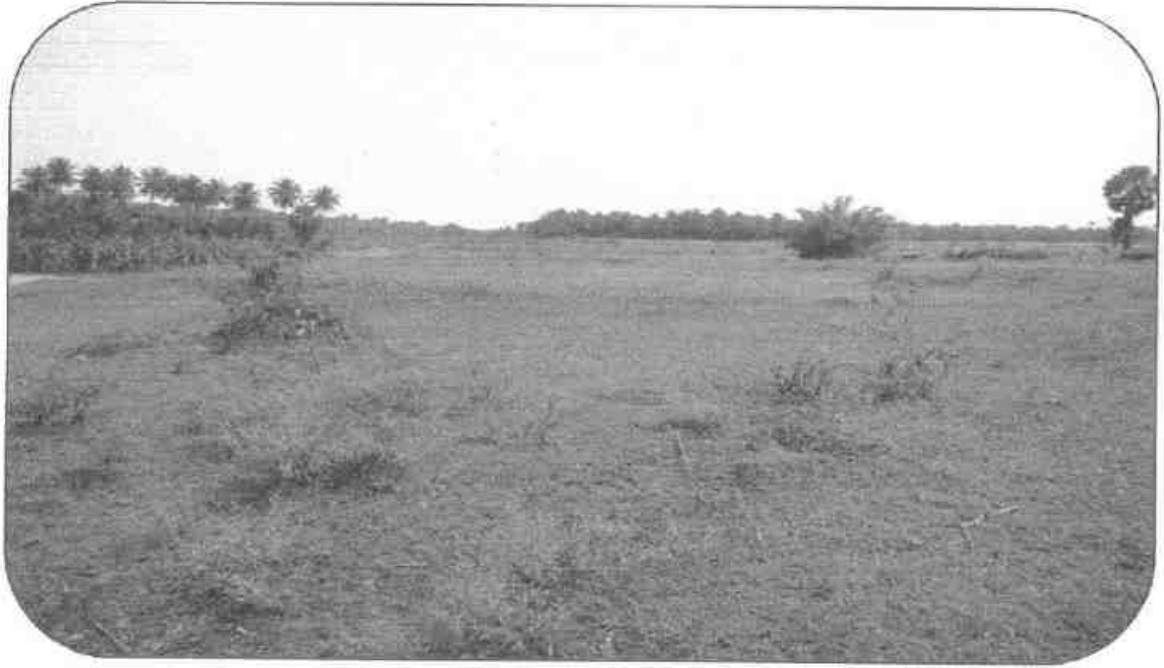
மதுக்கரை ஊராட்சி ஒன்றிய ரிதூட்கம்பள்ளி

மாரிச்செட்டிபதி, குமிட்டிபதி

கோயமுத்தூர் - 641032.



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



Name of the Applicant : **Thiru. K. Mahalingam,**
S/o. Kanthasamy,
Address : No. 8/129, Madheshwarar Kovil Thottam,
Kuttigoundenpathy, Kumittipathy Post,
Coimbatore District,
Tamil Nadu State – 641 032.

Location:

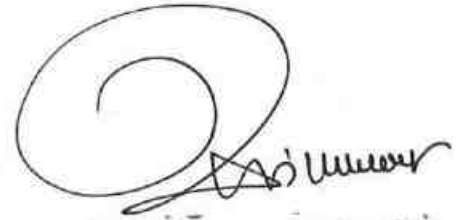
S.F.No. : 816 (Part), 818, 819/1, 822/1 (Part), 822/2A (Part) and
824/1A
Extent : 3.01.0 Ha.
Village : Sokkanur
Taluk : Kinathukadavu
District : Coimbatore

Signature of the applicant


K. Mahalingam


(Village Administrative Officer)
கிராம நிர்வாக அலுவலர்
01, சொக்கநூர் கிராமம்
கிணத்துக்கடவு வட்டம்

கொடியத்தூர் மாவட்டம், கிணத்தூர்க்குடியில்,
 மாவட்டம், கிணத்தூர்க்குடி தாலுகா, மதுரை உயிர்ப்பாதுகாக்கும்
 தாலுகா, கிணத்தூர்க்குடி 816, 818, 819, 822, 822A
 ஆகிய காலவாசல்கள் சிலர் 3.01.04 முதல் பல்பு
 காலத்திலும் மாவட்டம் தாண்டி கிணத்தூர்க்குடி
 குத்தகை உட்கார் குடி படி உயிர்ப்பாதுகாக்கும். மேற்படி
 காலவாசல்கள் சிலர் 3.01.04 முதல் சிலர் காலத்திலும்
 சிலர் காலம் பல்பு உயிர்ப்பாதுகாக்கும், மற்ற
 குடியிருப்பர் படிக்காது கிணத்தூர்க்குடி உயிர்ப்பாதுகாக்கும்
 உயிர்ப்பாதுகாக்கும் உயிர்ப்பாதுகாக்கும்.



கிராம நிர்வாக அலுவலர்
 01, கிணத்தூர்க்குடி தாலுகா
 கிணத்தூர்க்குடி மாவட்டம்



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-600015.
Phone No. 044-24359973
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.8214/1(a)/EC.No:4713/2021 dated:04.09.2021

To

Thiru.N.K.Ravikumar
No.190-NMR Thottam
Narasipuram
Coimbatore District – 641109

Sir/Madam,

Sub: SEIAA-TN – Proposed Rough Stone & Gravel quarry lease area over an extent of 1.21.0Ha at S.F.Nos: 860/1D (Part) & 893/1 (Part) in Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu by Thiru- N.K.Ravikumar - issue of Environmental Clearance– Reg.

- Ref:** 1. Online Proposal No. SIA/TN/MIN/191237/2021, Dated: 05.01.2021.
2. Application for Environmental Clearance dated: 06.01.2021.
3. Minutes of the 201st meeting of SEAC held on 12.02.2021
4. Minutes of the 221st meeting of SEAC held on 23.07.2021
5. Minutes of the 456th Meeting of SEIAA held on 31.08.2021.

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.

1	Name of Project Proponent and address	Thiru.N.K.Ravikumar No.190-NMR Thottam Narasipuram, Coimbatore District - 641109
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[Signature]
MEMBER SECRETARY
SEIAA-TN

2	Location of the Proposed Activity	
	Survey Number	860/1D (Part) & 893/1 (Part)
	Latitude and Longitude	10°48'18.19" N to 10°48'21.44"N 76°54'17.80" E to 76°54'22.68"E
	Village	Sokkanur
	Taluk	Kinathukadavu
	District	Coimbatore
3	Proposed Activity	
	i. Minor mineral	Rough stone & Gravel
	ii. Mining Lease Area	1.21.0Ha
	iii. Approved quantity	125150 cu.m of Rough stone & 17388cu.m of Gravel
	iv. Depth of Mining	32m
	v. Type of mining	Opencast semi Mechanized Mining
	vi. Category(B1/B2)	B2
	vii. Precise area communication approved by the Assistant Director with date	Na.Ka.No.584/Kanimam/2019 dated: 04.09.2020
	viii. Mining plan approval by Assistant Director of Geology and Mining, with date	Re.No.584/Mines/2019 dated: 08.12.2020
	ix. Mining period	5 Years
4	Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-	Not attracted. Affidavit furnished.
5	Man Power requirement per day:	24 Employees
6	Utilities	
	i. Source of Water :	Water Vendors & Tankers supply
	ii. Quantity of Water Requirement in KLD:	2.17 kLD
	a. Domestic & Drinking purpose	1.17 kLD



[Signature]
MEMBER SECRETARY
SEIAA-TN

	b. Green Belt & Dust Suppression	1.0 kLD
	iii. Power Requirement: a. Domestic Purpose b. Industrial Purpose	TANGEDCO -
7	Cost i. Project Cost ii. EMP Cost iii. CER Cost	Rs. 55.18 Lakhs Rs. 14.30 Lakhs Rs.1.38Lakhs
8	<u>Validity:</u> This Environmental Clearance is granted for the production of 125150 cu.m of Rough stone & 17388cu.m of Gravel as per the approved mining plan for period of five years from the date of execution of the mining lease.	

Affidavit

The Proponent has furnished affidavit in One Hundred Rupees stamp paper attested by the Notary stating that

I, Thiru.N.K.Ravikumar, No.109-NMR Thottam, Narasipuram, Coimbatore District - 641109, solemnly declare and sincerely affirm that:

I have applied for getting Environmental Clearance to SEIAA, Tamil Nadu for mining lease for the proposed Rough Stone & Gravel quarry lease area over an extent of 1.21.0 Ha at S.F.Nos. 860/1D (Part) & 893/1 (Part) in Sokkanur village, Kinathukadavu Taluk, Vellore District, Tamil Nadu.

- I swear to state and confirm that within 10km area of the mine site, I have applied for Environmental Clearance, none of the following is situated.
 - Protected areas notified under the Wild Life (Protection) Act, 1972.
 - Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of pollution) Act, 1974.
 - Eco – sensitive areas as notified.
 - Interstate boundaries and international boundaries within 10km radius from the boundary of the proposed side.
- I will complete the following corporate environment responsibility (CER) activities before commencement of the quarrying activities.



MEMBER SECRETARY
SEIAA-TN

CER Activity	Project Cost (Rs. In Lakhs)	CER Cost 2.0% of project cost (Rs. In Lakhs)
Developing the Garden maintenance in Sokkanur Govt School. If we are instructed by PWD/competent bodies to desilt the water bodies nearby. We assure to spend out CER cost for desilting/ strengthening the bunds of the nearby water bodies.	69.48	1.38
Total cost Allocation	69.48	1.38

3. The total area following quarries located within 500m radius from the periphery of my quarry site details as shown below: The following quarries are located within the radius of 500m from the periphery of my quarry.

S.No	Name of the quarry owner	Village & S.F. No	Extent (in Hects)	Lease period	Remarks
Existing quarries					
1.	A.subramanian	Sokkanur 894(P)	1.01.5	25.01.2019 to 24.01.2024	
Expired quarries					
Nil					
Abandoned quarries					
Nil					
Proposed quarries					
1.	Thiru.N.K.Ravikumar	Sokkanur 860/1D (Part) & 893/1 (Part)	1.21.0	-	Subject area precise area communicated
Future Proposed quarries					
Nil					

4. There will not be hindrance or disturbance to the people living no enroute/nearby our quarry site while transporting the mineral our material and due to quarrying activities.
5. There are no house/ villages within the radius of 300m.
6. We 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 does already exist no other private roads encountred.



MEMBER SECRETARY
SEIAA-TN

9. We will not engage any child labour in my quarry site and I aware that engaging child labour is punishable under the law.
10. All types of safety / protective equipments 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 Environment commitment as mentioned in the Mining Plan to the best of my knowledge.

Details of Quarries located within 500M radius from the proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from the Assistant Director of Geology & Mining, Coimbatore District in his Rc.No.584/Mines/2019 (Mines) dated: 08.12.2020 has stated that the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

S.No	Name of the quarry owner	Village & S.F. No	Extent (in Hects)	Lease period	Remarks
Existing quarries					
1.	A.subramanian	Sokkanur 894(P)	1.01.5	25.01.2019 to 24.01.2024	
Expired quarries					
Nil					
Abandoned quarries					
Nil					
Proposed quarries					
1.	Thiru.N.K.Ravikumar	Sokkanur 860/1D (Part) & 893/1 (Part)	1.21.0	-	Subject area precise area communicated
Future Proposed quarries					
Nil					

Appraisal by SEAC:

The proposal was placed in the 221st meeting of SEAC held on 23.07.2021. Based on the presentation made and the documents furnished by the Project proponent, SEAC decided to recommend the project proposal to SEIAA for grant of Environmental Clearance subject to the following specific conditions, in addition to normal conditions:

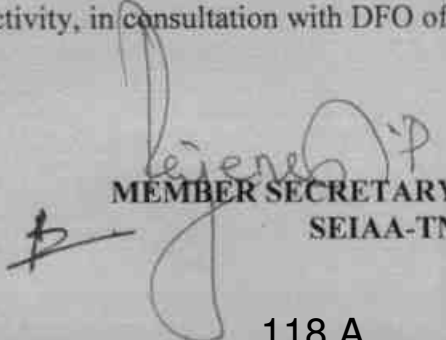
1. Restricting the depth of mining to 32m ultimate depth and quantity of 125150 cu.m of Rough stone & 17388 cu.m of Gravel for five years with a bench height of 5m as per the approved



[Signature]
MEMBER SECRETARY
SEIAA-TN

- mining plan considering the hydrogeological regime of the surrounding area as well as to ensure sustainable and safe mining.
2. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to SEIAA once in six months.
 3. Proponent shall ensure that the Noise level is monitored during mining operation at the project site and adequate noise level reduction measures undertaken.
 4. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit as per the conditions and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
 5. Greenbelt needs to be developed in the periphery of the mines area so that at the closure time the trees would have grown well.
 6. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
 7. After mining is completed, proper leveling should be done by the Project proponent & Environmental Management Plan furnished by the Proponent should be strictly followed.
 8. 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.
 9. Proper barriers to reduce noise level, dust pollution and to hold down any possible fly material (debris) should be established by providing greenbelt and/or metal sheets along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
 10. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50m safety distance from water body should be left vacant without any activity.
 11. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
 12. The Project Proponent shall comply with the mining and other relevant rules and regulations wherever applicable.
 13. The proponent shall develop an adequate greenbelt with native species on the periphery of the mine lease area before the commencement of the mining activity, in consultation with DFO of the concerned district/agriculture.




MEMBER SECRETARY
SEIAA-TN

14. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the concerned District Authorities.
15. The recommendation for the issue of environmental clearance is subject to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A.No.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).
16. 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.
17. 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.
18. The mine closure plan submitted by the project proponent shall be strictly followed after the lapse of the mining activities.
19. 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 furnish the detailed EMP mentioning all the activities particularly sanitizing facility for school as proposed in the CER and furnish the same before placing the subject to SEIAA.
20. All the conditions imposed by the Assistant Director, Geology & Mining, Coimbatore District in the mining plan approval and the Precise area communication letter issued by concerned District Collector should be strictly followed.

Discussion by SEIAA and the Remarks:-

The subject was placed in the 456th Authority meeting held on 31.08.2021. After detailed discussions, the Authority accepted the recommendation of SEAC and decided to grant Environmental Clearance subject to the conditions as recommended by SEAC & normal condition in addition to the following condition.

1. As per the recommendation of SEAC and as accepted by the proponent, the ultimate depth of mining is restricted to 32m and quantity of 125150 cu.m Rough stone & 17388 cu.m of Gravel with a bench height of 5m as per the approved mining plan for a period of five years



[Signature]
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considering the hydrogeological regime of the surrounding area as well as to ensure sustainable and safe mining.

2. As per the MoEF&CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent has furnished the detailed EMP, mentioning all the CER activities for Rs. 1.38 Lakhs as committed. All the CER activity shall be carried out before obtaining CTO from TNPCB.

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

- | |
|--|
| <ol style="list-style-type: none"> 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. The mine closure plan submitted by the project proponent shall be strictly followed after the lapse of the mine.
4. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
5. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
6. 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.
7. 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.

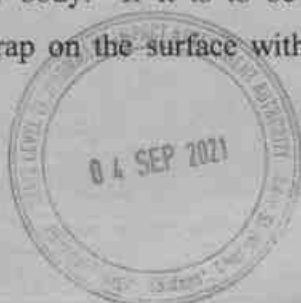


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8. The proponent shall ensure that First Aid Box is available at site.
9. The excavation activity shall not alter the natural drainage pattern of the area.
10. The excavated pit shall be restored by the project proponent for useful purposes.
11. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
12. The quarrying operation shall be restricted between 7AM and 5 PM.
13. 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.
14. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
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

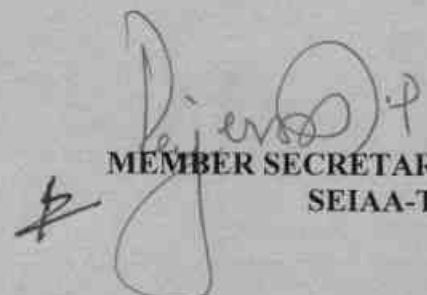


- i. Proper and regular maintenance of vehicles and other equipment
 - ii. Limiting time exposure of workers to excessive noise.
 - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
 - iv. Speed of trucks entering or leaving the mine is to be limited to moderate 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.
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.
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.




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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 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.



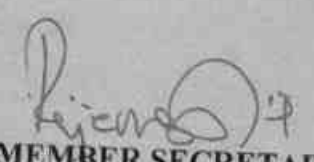
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57. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of 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: 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.
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.



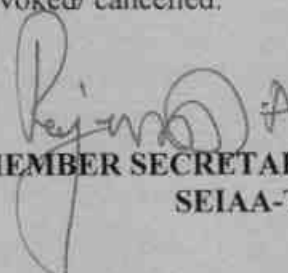

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10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including 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.
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.



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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 date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.


MEMBER SECRETARY
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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Principal 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, Coimbatore District.



8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. EIA Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. The president/EO/BDO, Sokkanur Village Panchayat, Kinathukadavu Taluk, Coimbatore District
11. Spare.



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TEST REPORT

ULR-TC606025000006589F

Report Number : GLCS/TR01687/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01687/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.10 - 15.10	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'27.97"N 76°54'23.95"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	16.10	40.7	48.8	46.42
2	17.10	37.5	46.3	43.83
3	18.10	39.1	47.4	44.99
4	19.10	40.5	47.9	45.62
5	20.10	36.6	45.2	42.75
6	21.10	35.7	43.1	40.82
7	22.10	33.5	38.1	36.38
8	23.10	34.9	37.5	36.39

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



Authorised Signatory
 L.Sudha Priya
 Technical Manager

Page 1 of 3

Note:The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01687/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
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Location Co-ordinates		10°48'27.97"N 76°54'23.95"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	00.10	32.7	36.9	35.29
10	01.10	30.5	34.5	32.95
11	02.10	31.4	35.1	33.63
12	03.10	31.9	35.9	34.35
13	04.10	30.6	34.8	33.19
14	05.10	31.1	36.2	34.36
15	06.10	39.2	45.5	43.40
16	07.10	40.8	46.1	44.21

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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 L.Sudha Priya
 Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	Sampling Method	GLCS/SOP/N/014
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Location Co-ordinates		10°48'27.97"N 76°54'23.95"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	08.10	40.1	50.7	48.05
18	09.10	40.9	50.1	47.58
19	10.10	39.6	49.2	46.64
20	11.10	36.9	49.8	47.01
21	12.10	38.1	50.2	47.45
22	13.10	37.6	48.8	46.11
23	14.10	39.4	49.1	46.53
24	15.10	39.1	48.6	46.05
Day Mean dB(A)				45.5
Night Mean dB(A)				34.6
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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L.Sudha Priya
Technical Manager

Page 3 of 3

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

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TEST REPORT

ULR-TC60602500006590F

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01688/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.40 - 15.40	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'23.91"N 76°54'23.70"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	16.10	39.5	49.1	46.54
2	17.10	38.9	48.8	46.21
3	18.10	37.5	46.5	44.00
4	19.10	36.6	46.6	44.00
5	20.10	37.5	45.9	43.48
6	21.10	34.3	46.1	43.37
7	22.10	33.2	44.7	41.99
8	23.10	30.5	39.5	37.00

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB** - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

Page 1 of 3

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Report Number : GLCS/TR01688/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01688/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.40 - 15.40	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'23.91"N 76°54'23.70"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	00.10	30.5	38.5	36.13
10	01.10	31.9	36.2	34.56
11	02.10	30.3	35.8	33.87
12	03.10	32.5	36.1	34.66
13	04.10	31.3	35.2	33.67
14	05.10	32.8	36.7	35.17
15	06.10	37.9	46.3	43.88
16	07.10	38.9	47.6	45.17

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

Page 2 of 3

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TEST REPORT

ULR-TC606025000006590F

Report Number : GLCS/TR01688/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palarpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01688/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.40 - 15.40	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'23.91"N 76°54'23.70"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	08.10	39.6	48.8	46.28
18	09.10	39.8	49.2	46.66
19	10.10	40.1	47.6	45.30
20	11.10	42.3	48.1	46.10
21	12.10	41.8	51.6	49.02
22	13.10	43.6	51.9	49.49
23	14.10	44.3	53.2	50.72
24	15.10	42.7	51.9	49.38
Day Mean dB(A)				46.1
Night Mean dB(A)				35.9
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB** - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



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Technical Manager

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

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TEST REPORT

ULR-TC60602500006588F

Report Number : GLCS/TR01689/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01689/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	29-05-2025
Sampling Hours	16.20 - 16.20	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.58"N 76°54'18.06"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	17.20	37.3	48.2	45.53
2	18.20	36.5	47.6	44.91
3	19.20	35.9	45.2	42.67
4	20.20	36.9	45.7	43.23
5	21.20	34.2	41.3	39.06
6	22.20	33.9	38.9	37.08
7	23.20	33.6	38.2	36.48
8	00.20	34.1	37.1	35.85

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01689/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	29-05-2025
Sampling Hours	16.20 - 16.20	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.58"N 76°54'18.06"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	01.20	32.4	37.6	35.74
10	02.20	33.5	36.1	34.99
11	03.20	32.9	34.8	33.95
12	04.20	32.6	35.3	34.16
13	05.20	33.1	36.6	35.19
14	06.20	36.9	47.2	44.58
15	07.20	38.2	50.9	48.12
16	08.20	40.5	51.6	48.91

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01689/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	29-05-2025
Sampling Hours	16.20 - 16.20	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.58"N 76°54'18.06"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	09.20	41.3	52.9	50.18
18	10.20	40.9	54.8	51.96
19	11.20	39.4	52.8	49.98
20	12.20	39.7	51.5	48.77
21	13.20	41.4	52.3	49.63
22	14.20	41.6	53.3	50.57
23	15.20	40.8	54.7	51.86
24	16.20	39.6	51.6	48.86
Day Mean dB(A)				47.4
Night Mean dB(A)				35.4
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Technical Manager

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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01690/2025-26
Location Name	PICHANUR	Date of Analysis	29-05-2025
Sampling Hours	16.50 - 16.50	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'11.18"N 76°52'48.09"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	17.50	38.2	48.9	46.24
2	18.50	37.9	50.3	47.53
3	19.50	36.9	47.1	44.49
4	20.50	38.5	46.9	44.48
5	21.50	35.5	44.3	41.83
6	22.50	34.9	40.3	38.39
7	23.50	33.6	39.1	37.17
8	00.50	32.1	38.5	36.39

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01690/2025-26
Location Name	PICHANUR	Date of Analysis	29-05-2025
Sampling Hours	16.50 - 16.50	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'11.18"N 76°52'48.09"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	01.50	32.6	36.8	35.19
10	02.50	33.5	35.2	34.43
11	03.50	31.9	35.8	34.27
12	04.50	32.6	34.7	33.78
13	05.50	33.6	35.6	34.71
14	06.50	32.7	50.1	47.17
15	07.50	39.5	51.2	48.47
16	08.50	41.2	52.6	49.89

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01690/2025-26
Location Name	PICHANUR	Date of Analysis	29-05-2025
Sampling Hours	16.50 - 16.50	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'11.18"N 76°52'48.09"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	09.50	42.7	53.1	50.47
18	10.50	42.3	54.7	51.93
19	11.50	41.4	52.7	50.00
20	12.50	39.5	50.1	47.45
21	13.50	38.7	49.6	46.93
22	14.50	40.1	51.6	48.89
23	15.50	40.9	52.8	50.06
24	16.50	41.7	53.4	50.67
Day Mean dB(A)				47.5
Night Mean dB(A)				36.4
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



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Technical Manager

Page 3 of 3

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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01691/2025-26
Location Name	KANAL PUDUR	Date of Analysis	29-05-2025
Sampling Hours	17.25 - 17.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'19.03"N 76°54'35.65"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	18.25	36.8	50.6	47.77
2	19.25	37.1	51.9	49.03
3	20.25	33.5	43.6	40.99
4	21.25	31.8	39.7	37.34
5	22.25	30.5	38.5	36.13
6	23.25	31.4	34.4	33.15
7	00.25	32.6	35.8	34.49
8	01.25	32.9	36.3	34.92

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01691/2025-26
Location Name	KANAL PUDUR	Date of Analysis	29-05-2025
Sampling Hours	17.25 - 17.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'19.03"N 76°54'35.65"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	02.25	33.1	35.9	34.72
10	03.25	32.6	35.2	34.09
11	04.25	33.2	35.6	34.56
12	05.25	33.4	37.2	35.70
13	06.25	37.5	48.2	45.54
14	07.25	36.9	50.3	44.49
15	08.25	39.5	50.3	47.64
16	09.25	40.6	51.4	48.74

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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 Technical Manager

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TEST REPORT

ULR-TC606025000006586F

Report Number : GLCS/TR01691/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01691/2025-26
Location Name	KANAL PUDUR	Date of Analysis	29-05-2025
Sampling Hours	17.25 - 17.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'19.03"N 76°54'35.65"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	10.25	41.5	52.1	49.45
18	11.25	42.7	54.5	51.77
19	12.25	39.8	51.2	48.49
20	13.25	41.2	52.6	49.89
21	14.25	40.6	52.5	49.76
22	15.25	38.9	49.5	46.85
23	16.25	38.2	48.5	45.88
24	17.25	39.9	50.3	47.67
Day Mean dB(A)				46.4
Night Mean dB(A)				34.7
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

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ULR-TC606025000006585F

Report Number : GLCS/TR01692/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01692/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	29-05-2025
Sampling Hours	17.55 - 17.55	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	18.55	37.5	49.1	46.38
2	19.55	36.6	50.6	47.76
3	20.55	35.1	46.3	43.61
4	21.55	34.8	40.1	38.21
5	22.55	34.6	38.9	37.26
6	23.55	32.1	36.6	34.91
7	00.55	32.7	39.1	36.99
8	01.55	32.6	35.9	34.56

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB** - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01692/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	29-05-2025
Sampling Hours	17.55 - 17.55	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	02.55	32.8	35.2	34.16
10	03.55	33.6	36.1	35.03
11	04.55	32.7	35.6	34.39
12	05.55	39.6	50.4	47.74
13	06.55	40.5	51.2	48.54
14	07.55	41.3	52.8	50.09
15	08.55	41.8	52.3	49.66
16	09.55	42.6	53.4	50.74

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01692/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	29-05-2025
Sampling Hours	17.55 - 17.55	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	10.55	43.5	54.6	51.91
18	11.55	44.6	56.9	54.14
19	12.55	44.8	56.2	53.49
20	13.55	42.8	53.1	50.48
21	14.55	39.8	50.8	48.12
22	15.55	40.2	48.1	45.74
23	16.55	37.8	50.5	47.72
24	17.55	36.5	47.5	44.82
Day Mean dB(A)				48.8
Night Mean dB(A)				35.7
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01687/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.10 - 15.10	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'27.97"N 76°54'23.95"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	16.10	40.7	48.8	46.42
2	17.10	37.5	46.3	43.83
3	18.10	39.1	47.4	44.99
4	19.10	40.5	47.9	45.62
5	20.10	36.6	45.2	42.75
6	21.10	35.7	43.1	40.82
7	22.10	33.5	38.1	36.38
8	23.10	34.9	37.5	36.39

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01687/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.10 - 15.10	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'27.97"N 76°54'23.95"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	00.10	32.7	36.9	35.29
10	01.10	30.5	34.5	32.95
11	02.10	31.4	35.1	33.63
12	03.10	31.9	35.9	34.35
13	04.10	30.6	34.8	33.19
14	05.10	31.1	36.2	34.36
15	06.10	39.2	45.5	43.40
16	07.10	40.8	46.1	44.21

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01687/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.10 - 15.10	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'27.97"N 76°54'23.95"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	08.10	40.1	50.7	48.05
18	09.10	40.9	50.1	47.58
19	10.10	39.6	49.2	46.64
20	11.10	36.9	49.8	47.01
21	12.10	38.1	50.2	47.45
22	13.10	37.6	48.8	46.11
23	14.10	39.4	49.1	46.53
24	15.10	39.1	48.6	46.05
Day Mean dB(A)				45.5
Night Mean dB(A)				34.6
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Technical Manager

Page 3 of 3

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01688/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.40 - 15.40	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'23.91"N 76°54'23.70"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	16.10	39.5	49.1	46.54
2	17.10	38.9	48.8	46.21
3	18.10	37.5	46.5	44.00
4	19.10	36.6	46.6	44.00
5	20.10	37.5	45.9	43.48
6	21.10	34.3	46.1	43.37
7	22.10	33.2	44.7	41.99
8	23.10	30.5	39.5	37.00

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01688/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.40 - 15.40	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'23.91"N 76°54'23.70"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	00.10	30.5	38.5	36.13
10	01.10	31.9	36.2	34.56
11	02.10	30.3	35.8	33.87
12	03.10	32.5	36.1	34.66
13	04.10	31.3	35.2	33.67
14	05.10	32.8	36.7	35.17
15	06.10	37.9	46.3	43.88
16	07.10	38.9	47.6	45.17

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01688/2025-26
Location Name	CORE ZONE	Date of Analysis	29-05-2025
Sampling Hours	15.40 - 15.40	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'23.91"N 76°54'23.70"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	08.10	39.6	48.8	46.28
18	09.10	39.8	49.2	46.66
19	10.10	40.1	47.6	45.30
20	11.10	42.3	48.1	46.10
21	12.10	41.8	51.6	49.02
22	13.10	43.6	51.9	49.49
23	14.10	44.3	53.2	50.72
24	15.10	42.7	51.9	49.38
Day Mean dB(A)				46.1
Night Mean dB(A)				35.9
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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L.Sudha Priya
Technical Manager

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

Note:The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.



TEST REPORT

ULR-TC606025000006588F

Report Number : GLCS/TR01689/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01689/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	29-05-2025
Sampling Hours	16.20 - 16.20	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.58"N 76°54'18.06"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	17.20	37.3	48.2	45.53
2	18.20	36.5	47.6	44.91
3	19.20	35.9	45.2	42.67
4	20.20	36.9	45.7	43.23
5	21.20	34.2	41.3	39.06
6	22.20	33.9	38.9	37.08
7	23.20	33.6	38.2	36.48
8	00.20	34.1	37.1	35.85

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



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 Technical Manager



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Report Date : 30-05-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01689/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	29-05-2025
Sampling Hours	16.20 - 16.20	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.58"N 76°54'18.06"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	01.20	32.4	37.6	35.74
10	02.20	33.5	36.1	34.99
11	03.20	32.9	34.8	33.95
12	04.20	32.6	35.3	34.16
13	05.20	33.1	36.6	35.19
14	06.20	36.9	47.2	44.58
15	07.20	38.2	50.9	48.12
16	08.20	40.5	51.6	48.91

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01689/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	29-05-2025
Sampling Hours	16.20 - 16.20	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.58"N 76°54'18.06"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	09.20	41.3	52.9	50.18
18	10.20	40.9	54.8	51.96
19	11.20	39.4	52.8	49.98
20	12.20	39.7	51.5	48.77
21	13.20	41.4	52.3	49.63
22	14.20	41.6	53.3	50.57
23	15.20	40.8	54.7	51.86
24	16.20	39.6	51.6	48.86
Day Mean dB(A)				47.4
Night Mean dB(A)				35.4
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB** - Central Pollution Control Board,



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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01690/2025-26
Location Name	PICHANUR	Date of Analysis	29-05-2025
Sampling Hours	16.50 - 16.50	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'11.18"N 76°52'48.09"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	17.50	38.2	48.9	46.24
2	18.50	37.9	50.3	47.53
3	19.50	36.9	47.1	44.49
4	20.50	38.5	46.9	44.48
5	21.50	35.5	44.3	41.83
6	22.50	34.9	40.3	38.39
7	23.50	33.6	39.1	37.17
8	00.50	32.1	38.5	36.39

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01690/2025-26
Location Name	PICHANUR	Date of Analysis	29-05-2025
Sampling Hours	16.50 - 16.50	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'11.18"N 76°52'48.09"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	01.50	32.6	36.8	35.19
10	02.50	33.5	35.2	34.43
11	03.50	31.9	35.8	34.27
12	04.50	32.6	34.7	33.78
13	05.50	33.6	35.6	34.71
14	06.50	32.7	50.1	47.17
15	07.50	39.5	51.2	48.47
16	08.50	41.2	52.6	49.89

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01690/2025-26
Location Name	PICHANUR	Date of Analysis	29-05-2025
Sampling Hours	16.50 - 16.50	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'11.18"N 76°52'48.09"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	09.50	42.7	53.1	50.47
18	10.50	42.3	54.7	51.93
19	11.50	41.4	52.7	50.00
20	12.50	39.5	50.1	47.45
21	13.50	38.7	49.6	46.93
22	14.50	40.1	51.6	48.89
23	15.50	40.9	52.8	50.06
24	16.50	41.7	53.4	50.67
Day Mean dB(A)				47.5
Night Mean dB(A)				36.4
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Technical Manager

Page 3 of 3

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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01691/2025-26
Location Name	KANAL PUDUR	Date of Analysis	29-05-2025
Sampling Hours	17.25 - 17.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'19.03"N 76°54'35.65"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	18.25	36.8	50.6	47.77
2	19.25	37.1	51.9	49.03
3	20.25	33.5	43.6	40.99
4	21.25	31.8	39.7	37.34
5	22.25	30.5	38.5	36.13
6	23.25	31.4	34.4	33.15
7	00.25	32.6	35.8	34.49
8	01.25	32.9	36.3	34.92

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01691/2025-26
Location Name	KANAL PUDUR	Date of Analysis	29-05-2025
Sampling Hours	17.25 - 17.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'19.03"N 76°54'35.65"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	02.25	33.1	35.9	34.72
10	03.25	32.6	35.2	34.09
11	04.25	33.2	35.6	34.56
12	05.25	33.4	37.2	35.70
13	06.25	37.5	48.2	45.54
14	07.25	36.9	50.3	44.49
15	08.25	39.5	50.3	47.64
16	09.25	40.6	51.4	48.74

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01691/2025-26
Location Name	KANAL PUDUR	Date of Analysis	29-05-2025
Sampling Hours	17.25 - 17.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'19.03"N 76°54'35.65"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	10.25	41.5	52.1	49.45
18	11.25	42.7	54.5	51.77
19	12.25	39.8	51.2	48.49
20	13.25	41.2	52.6	49.89
21	14.25	40.6	52.5	49.76
22	15.25	38.9	49.5	46.85
23	16.25	38.2	48.5	45.88
24	17.25	39.9	50.3	47.67
Day Mean dB(A)				46.4
Night Mean dB(A)				34.7
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01692/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	29-05-2025
Sampling Hours	17.55 - 17.55	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	18.55	37.5	49.1	46.38
2	19.55	36.6	50.6	47.76
3	20.55	35.1	46.3	43.61
4	21.55	34.8	40.1	38.21
5	22.55	34.6	38.9	37.26
6	23.55	32.1	36.6	34.91
7	00.55	32.7	39.1	36.99
8	01.55	32.6	35.9	34.56

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB** - Central Pollution Control Board,



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TEST REPORT

ULR-TC606025000006585F

Report Number : GLCS/TR01692/2025-26

Report Date : 30-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District-642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District-	
Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01692/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	29-05-2025
Sampling Hours	17.55 - 17.55	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	02.55	32.8	35.2	34.16
10	03.55	33.6	36.1	35.03
11	04.55	32.7	35.6	34.39
12	05.55	39.6	50.4	47.74
13	06.55	40.5	51.2	48.54
14	07.55	41.3	52.8	50.09
15	08.55	41.8	52.3	49.66
16	09.55	42.6	53.4	50.74

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



Authorised Signatory
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Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01692/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	29-05-2025
Sampling Hours	17.55 - 17.55	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	10.55	43.5	54.6	51.91
18	11.55	44.6	56.9	54.14
19	12.55	44.8	56.2	53.49
20	13.55	42.8	53.1	50.48
21	14.55	39.8	50.8	48.12
22	15.55	40.2	48.1	45.74
23	16.55	37.8	50.5	47.72
24	17.55	36.5	47.5	44.82
Day Mean dB(A)				48.8
Night Mean dB(A)				35.7
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01693/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	29-05-2025
Sampling Hours	18.25 - 18.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	19.25	37.5	46.3	43.83
2	20.25	36.3	45.2	42.72
3	21.25	35.9	40.2	38.56
4	22.25	34.1	39.1	37.28
5	23.25	32.5	37.5	35.68
6	00.25	33.1	36.5	35.12
7	01.25	33.6	34.9	34.30
8	02.25	32.9	35.6	34.46

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB** - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01693/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	29-05-2025
Sampling Hours	18.25 - 18.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	03.25	32.5	34.9	33.86
10	04.25	34.1	36.6	35.53
11	05.25	32.5	39.1	36.95
12	06.25	35.6	40.5	38.71
13	07.25	39.5	43.3	41.80
14	08.25	39.6	49.8	47.19
15	09.25	40.1	51.8	49.07
16	10.25	41.6	53.3	50.57

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0565/2025-26	Sampled by	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	Sampling Method	GLCS/SOP/N/014
Sampling Description	-	Sample Code	GLCS/01693/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	29-05-2025
Sampling Hours	18.25 - 18.25	Date of Completion	29-05-2025
Sampling Date	02-05-2025 - 03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	11.25	42.8	54.1	51.40
18	12.25	39.6	53.9	51.05
19	13.25	42.9	54.5	51.78
20	14.25	39.1	53.6	50.74
21	15.25	40.7	52.5	49.77
22	16.25	40.6	50.1	47.55
23	17.25	39.5	48.2	45.74
24	18.25	38.1	47.2	44.69
Day Mean dB(A)				46.6
Night Mean dB(A)				35.4
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



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TEST REPORT

ULR-TC606025000007428F

Report Number : GLCS/TR01707/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palarpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 1	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01707/2025-26
Location Name	CORE ZONE	Date of Analysis	05-05-2025
Sampling Hours	03.20	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'26.32"N 76°54'25.39"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	476.7
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	24.1
3	Boron	USEPA-6010D:2014	mg/kg	5.0
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.05
5	Cadmium	USEPA-6010 D-2014	mg/kg	2.0
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	39.6
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	4.6
8	Chromium	USEPA-6010D-2014	mg/kg	6.5

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 1	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01707/2025-26
Location Name	CORE ZONE	Date of Analysis	05-05-2025
Sampling Hours	03.20	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'26.32"N 76°54'25.39"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	4.0
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.7
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.1
12	Iron	USEPA-6010 D-2014	mg/kg	36.25
13	Lead	USEPA-6010D-2014	mg/kg	1.0
14	Manganese	USEPA-6010 D-2014	mg/kg	5.75
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.64
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.1

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 1	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01707/2025-26
Location Name	CORE ZONE	Date of Analysis	05-05-2025
Sampling Hours	03.20	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'26.32"N 76°54'25.39"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.68
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.34
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	486
20	Sulphate (as SO ₄)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	6.8
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	27.60
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	37.00
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	35.40
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	47.2

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 1	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01707/2025-26
Location Name	CORE ZONE	Date of Analysis	05-05-2025
Sampling Hours	03.20	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'26.32"N 76°54'25.39"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	10.5

Note : BDL - Below Detection Limit, DL - Detection Limit,



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TEST REPORT

ULR-TC606025000007427F

Report Number : GLCS/TR01708/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 2	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01708/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	05-05-2025
Sampling Hours	04.30	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.70"N 76°54'17.31"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	376
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	19.5
3	Boron	USEPA-6010D:2014	mg/kg	7.5
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.12
5	Cadmium	USEPA-6010 D-2014	mg/kg	5.0
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	40
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	5.7
8	Chromium	USEPA-6010D-2014	mg/kg	22.6

Note : BDL - Below Detection Limit, DL - Detection Limit,



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TEST REPORT

ULR-TC606025000007427F

Report Number : GLCS/TR01708/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palarpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 2	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01708/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	05-05-2025
Sampling Hours	04.30	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.70"N 76°54'17.31"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	2.6
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.4
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.2
12	Iron	USEPA-6010 D-2014	mg/kg	48.8
13	Lead	USEPA-6010D-2014	mg/kg	0.72
14	Manganese	USEPA-6010 D-2014	mg/kg	4.8
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.6
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.03

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 2	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01708/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	05-05-2025
Sampling Hours	04.30	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.70"N 76°54'17.31"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.02
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.4
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	516
20	Sulphate (as SO ₄)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	2.78
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	26.35
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.75
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	37.90
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	42

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 2	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01708/2025-26
Location Name	NEAR EXISTING QUARRY	Date of Analysis	05-05-2025
Sampling Hours	04.30	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'21.70"N 76°54'17.31"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	7.7

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

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Technical Manager

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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 3	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01709/2025-26
Location Name	PICHANUR	Date of Analysis	05-05-2025
Sampling Hours	05.00	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'12.08"N 76°52'48.45"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	639.7
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	17.8
3	Boron	USEPA-6010D:2014	mg/kg	12.3
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.15
5	Cadmium	USEPA-6010 D-2014	mg/kg	5.0
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	37
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	4.5
8	Chromium	USEPA-6010D-2014	mg/kg	20.8

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 3	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01709/2025-26
Location Name	PICHANUR	Date of Analysis	05-05-2025
Sampling Hours	05.00	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'12.08"N 76°52'48.45"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	6.8
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.3
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.5
12	Iron	USEPA-6010 D-2014	mg/kg	67.2
13	Lead	USEPA-6010D-2014	mg/kg	1.4
14	Manganese	USEPA-6010 D-2014	mg/kg	6.8
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.59
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.02

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 3	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01709/2025-26
Location Name	PICHANUR	Date of Analysis	05-05-2025
Sampling Hours	05.00	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'12.08"N 76°52'48.45"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.64
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	0.87
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	412
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.8
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.46
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.32
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	39.22
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	43

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 3	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01709/2025-26
Location Name	PICHANUR	Date of Analysis	05-05-2025
Sampling Hours	05.00	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'12.08"N 76°52'48.45"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	19.6

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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 4	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01710/2025-26
Location Name	KANALPUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'18.70"N 76°54'36.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	401.4
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	15.6
3	Boron	USEPA-6010D:2014	mg/kg	8.0
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.09
5	Cadmium	USEPA-6010 D-2014	mg/kg	4.3
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	44
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	5.2
8	Chromium	USEPA-6010D-2014	mg/kg	9.0

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 4	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01710/2025-26
Location Name	KANALPUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'18.70"N 76°54'36.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	BDL (DL:0.5)
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.7
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.1
12	Iron	USEPA-6010 D-2014	mg/kg	40.5
13	Lead	USEPA-6010D-2014	mg/kg	1.5
14	Manganese	USEPA-6010 D-2014	mg/kg	5.0
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.74
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.3

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 4	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01710/2025-26
Location Name	KANALPUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'18.70"N 76°54'36.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.38
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.34
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	396
20	Sulphate (as SO ₄)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	2.5
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	26.10
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.00
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	38.90
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	38

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Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 4	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01710/2025-26
Location Name	KANALPUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'18.70"N 76°54'36.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	8.0

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 4 of 4

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

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TEST REPORT

ULR-TC606025000007429F

Report Number : GLCS/TR01711/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palarpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 5	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01711/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	06.05	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	451.6
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	16.6
3	Boron	USEPA-6010D:2014	mg/kg	6.6
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.12
5	Cadmium	USEPA-6010 D-2014	mg/kg	6.0
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	39
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.8
8	Chromium	USEPA-6010D-2014	mg/kg	8.6

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 1 of 4

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ULR-TC606025000007429F

Report Number : GLCS/TR01711/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palarpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 5	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01711/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	06.05	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	4.8
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.0
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.8
12	Iron	USEPA-6010 D-2014	mg/kg	24
13	Lead	USEPA-6010D-2014	mg/kg	4.5
14	Manganese	USEPA-6010 D-2014	mg/kg	10.2
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.7
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.21

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Page 2 of 4

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 5	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01711/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	06.05	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.96
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.34
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	536
20	Sulphate (as SO ₄)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.0
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.23
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	36.85
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	37.92
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	41

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For Global Lab and Consultancy Services LLP

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Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 5	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01711/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	06.05	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.76"N 76°56'17.32"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	20.2

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 4 of 4

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

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TEST REPORT

ULR-TC606025000007430F

Report Number : GLCS/TR01712/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 6	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01712/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	05-05-2025
Sampling Hours	06.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	506
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	17
3	Boron	USEPA-6010D:2014	mg/kg	7.3
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.06
5	Cadmium	USEPA-6010 D-2014	mg/kg	4.8
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	45
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	5.8
8	Chromium	USEPA-6010D-2014	mg/kg	17.8

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 6	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01712/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	05-05-2025
Sampling Hours	06.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	0.75
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.6
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.9
12	Iron	USEPA-6010 D-2014	mg/kg	71.8
13	Lead	USEPA-6010D-2014	mg/kg	2.8
14	Manganese	USEPA-6010 D-2014	mg/kg	9.5
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	1.2
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	2.07

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For Global Lab and Consultancy Services LLP



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Technical Manager

Page 2 of 4

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 6	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01712/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	05-05-2025
Sampling Hours	06.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.82
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.2
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	604
20	Sulphate (as SO ₄)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	4.2
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.45
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	39.93
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	34.63
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	42

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For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

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Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SOIL - 6	Sampling Method	GLCS/SOP/S/014
Sampling Description	Powder	Sample Code	GLCS/01712/2025-26
Location Name	KANNAMANAYAKKANUR	Date of Analysis	05-05-2025
Sampling Hours	06.35	Date of Completion	18-06-2025
Sampling Date	03-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°49'7.89"N 76°56'45.86"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	12

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 4 of 4

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TEST REPORT

ULR-TC60602500005662F

Report Number : GLCS/TR01713/2025-26

Report Date : 12-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SURFACE WATER - 1	Sampling Method	GLCS/M/SOP/05
Sampling Description	Liquid	Sample Code	GLCS/01713/2025-26
Location Name	WALAYAR LAKE	Date of Analysis	05-05-2025
Sampling Hours	01.30	Date of Completion	06-05-2025
Sampling Date	04-05-2025	Avg Temperature	25.3 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°50'32.67"N 76°51'42.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent



For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar

Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000007431F

Report Number : GLCS/TR01713/2025-26

Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SURFACE WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01713/2025-26
Location Name	WALAYAR LAKE	Date of Analysis	05-05-2025
Sampling Hours	01.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'32.67"N 76°51'42.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.014
2	Ammoniacal Nitrogen as NH3-N	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.09
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	BDL (DL:2.0)
6	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
7	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
8	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	184

Note : BDL - Below Detection Limit, DL - Detection Limit,



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L.Sudha Priya
Technical Manager

Page 1 of 5

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TEST REPORT

ULR-TC606025000007431F

Report Number : GLCS/TR01713/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SURFACE WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01713/2025-26
Location Name	WALAYAR LAKE	Date of Analysis	05-05-2025
Sampling Hours	01.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'32.67"N 76°51'42.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	BDL (DL:10.0)
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	320
11	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Color	IS 3025 (Part 4): 2021	CU	5.0
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.02)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	4.8
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	μS/cm	2665

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SURFACE WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01713/2025-26
Location Name	WALAYAR LAKE	Date of Analysis	05-05-2025
Sampling Hours	01.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'32.67"N 76°51'42.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	0.23
18	Free Residual Chlorine as Cl ₂	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
19	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.29
20	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
21	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	112
22	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

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Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SURFACE WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01713/2025-26
Location Name	WALAYAR LAKE	Date of Analysis	05-05-2025
Sampling Hours	01.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'32.67"N 76°51'42.88"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	8.12
28	Phenols	IS 3025 PART 43 SECTION 1: 2022	mg/l	BDL (DL:0.1)
29	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
30	Sulphate as SO4	IS 3025 (Part 24) SECTION 1: 2022	mg/l	146
31	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
32	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	810

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	SURFACE WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01713/2025-26
Location Name	WALAYAR LAKE	Date of Analysis	05-05-2025
Sampling Hours	01.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°50'32.67"N 76°51'42.88"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1732
34	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	920
35	Total Suspended Solids	is 3025 part 17: 2022	mg/l	14
36	Turbidity	IS 3025 (Part 10): 2023	NTU	10
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

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For Global Lab and Consultancy Services LLP

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

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TEST REPORT

ULR-TC60602500005663F

Report Number : GLCS/TR01714/2025-26

Report Date : 12-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 1	Sampling Method	GLCS/M/SOP/05
Sampling Description	Liquid	Sample Code	GLCS/01714/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.00	Date of Completion	09-05-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'27.59"N 76°54'39.42"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar

Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000007432F

Report Number : GLCS/TR01714/2025-26

Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01714/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.00	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'27.59"N 76°54'39.42"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	120
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	140

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Page 1 of 5

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Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01714/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.00	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'27.59"N 76°54'39.42"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1678
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.3
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.29

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01714/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.00	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'27.59"N 76°54'39.42"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	68
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.38

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Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01714/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.00	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'27.59"N 76°54'39.42"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	189
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 2023	mg/l	450
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1082
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	580
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01714/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.00	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'27.59"N 76°54'39.42"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC60602500005664F

Report Number : GLCS/TR01715/2025-26

Report Date : 12-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 2	Sampling Method	GLCS/M/SOP/05
Sampling Description	Liquid	Sample Code	GLCS/01715/2025-26
Location Name	KANAL PUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.15	Date of Completion	09-05-2025
Sampling Date	04-05-2025	Avg Temperature	25.2 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	50.0 %
Location Co-ordinates		10°45'23.86"N 76°54'36.78"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar

Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000007433F

Report Number : GLCS/TR01715/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01715/2025-26
Location Name	KANAL PUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.15	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'23.86"N 76°54'36.78"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH ₃ -N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	92
8	Chloride as Cl ⁻	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	245

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 1 of 5

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01715/2025-26
Location Name	KANAL PUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.15	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'23.86"N 76°54'36.78"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	μS/cm	1516
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.35
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.22

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For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01715/2025-26
Location Name	KANAL PUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.15	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'23.86"N 76°54'36.78"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	56
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.63

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Technical Manager



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TEST REPORT

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Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01715/2025-26
Location Name	KANAL PUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.15	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'23.86"N 76°54'36.78"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	79
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 2023	mg/l	370
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	984
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	460
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01715/2025-26
Location Name	KANAL PUDUR	Date of Analysis	05-05-2025
Sampling Hours	05.15	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°45'23.86"N 76°54'36.78"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC60602500005665F

Report Number : GLCS/TR01716/2025-26

Report Date : 12-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 3	Sampling Method	GLCS/M/SOP/05
Sampling Description	Liquid	Sample Code	GLCS/01716/2025-26
Location Name	SOKKANUR	Date of Analysis	05-05-2025
Sampling Hours	01.20	Date of Completion	09-05-2025
Sampling Date	04-05-2025	Avg Temperature	25.2 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°48'32.73"N 76°57'18.44"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



For Global Lab and Consultancy Services LLP



Authorised Signatory
A. Sathishkumar

Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000007434F

Report Number : GLCS/TR01716/2025-26

Report Date : 18-06-2025

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 3	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01716/2025-26
Location Name	SOKKANUR	Date of Analysis	05-05-2025
Sampling Hours	01.20	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'32.73"N 76°57'18.44"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.024
2	Ammoniacal Nitrogen as NH ₃ -N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	124
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	160

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 3	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01716/2025-26
Location Name	SOKKANUR	Date of Analysis	05-05-2025
Sampling Hours	01.20	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'32.73"N 76°57'18.44"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1806
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.36
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	BDL (DL:0.1)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 3	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01716/2025-26
Location Name	SOKKANUR	Date of Analysis	05-05-2025
Sampling Hours	01.20	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'32.73"N 76°57'18.44"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	75
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.26

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager



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TEST REPORT

ULR-TC606025000007434F

Report Number : GLCS/TR01716/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 3	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01716/2025-26
Location Name	SOKKANUR	Date of Analysis	05-05-2025
Sampling Hours	01.20	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'32.73"N 76°57'18.44"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	101
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 2023	mg/l	550
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1172
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	620
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

Page 4 of 5

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TEST REPORT

ULR-TC606025000007434F

Report Number : GLCS/TR01716/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	WELL WATER - 3	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01716/2025-26
Location Name	SOKKANUR	Date of Analysis	05-05-2025
Sampling Hours	01.20	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'32.73"N 76°57'18.44"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

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

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TEST REPORT

ULR-TC60602500005666F

Report Number : GLCS/TR01717/2025-26

Report Date : 12-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 1	Sampling Method	GLCS/M/SOP/05
Sampling Description	Liquid	Sample Code	GLCS/01717/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.30	Date of Completion	09-05-2025
Sampling Date	04-05-2025	Avg Temperature	25.5 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	50.0 %
Location Co-ordinates		10°48'29.71"N 76°54'7.02"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar

Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000007435F

Report Number : GLCS/TR01717/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01717/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'29.71"N 76°54'7.02"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	120
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	380

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 1 of 5

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01717/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'29.71"N 76°54'7.02"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	2234
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.31
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.2

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01717/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'29.71"N 76°54'7.02"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	73
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.54

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01717/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'29.71"N 76°54'7.02"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	53
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 2023	mg/l	650
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1450
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	600
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



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L.Sudha Priya
Technical Manager

Page 4 of 5

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 1	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01717/2025-26
Location Name	NEAR PROJECT AREA	Date of Analysis	05-05-2025
Sampling Hours	03.30	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°48'29.71"N 76°54'7.02"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC606025000005667F

Report Number : GLCS/TR01718/2025-26

Report Date : 12-05-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 2	Sampling Method	GLCS/M/SOP/05
Sampling Description	Liquid	Sample Code	GLCS/01718/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	09-05-2025
Sampling Date	04-05-2025	Avg Temperature	25.1 °C
Sampling Receipt Date	05-05-2025	Avg Humidity	51.0 %
Location Co-ordinates		10°47'24.40"N 76°56'17.91"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar

Technical Manager- Microbiology

Page 1 of 1

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

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01718/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.40"N 76°56'17.91"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH ₃ -N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	80
8	Chloride as Cl ⁻	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	130

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 1 of 5

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Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01718/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.40"N 76°56'17.91"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1174
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.4
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.13

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000007436F

Report Number : GLCS/TR01718/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01718/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.40"N 76°56'17.91"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	41
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.78

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

(Signature)

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L.Sudha Priya
Technical Manager

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Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01718/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.40"N 76°56'17.91"E	

SI.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	59
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO ₃	IS 3025 (Part 23): 2023	mg/l	290
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	760
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	370
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, DL - Detection Limit,



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Technical Manager



TEST REPORT

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Report Number : GLCS/TR01718/2025-26

Report Date : 18-06-2025

Issued To : THIRU.AGATHEESWARAN SUBRAMANIAM, 9/98,Veerappagoundannur Palurpathy Post, Kinathukadavu Taluk Coimbatore District 642109		Site Address: THIRU.AGATHEESWARAN SUBRAMANIAM, ROUGH STONE GRAVEL QUARRY Lease Area: 1.21.50Ha, Sf.No:834/2(Part),Sokkanur Village, Kinathukadavu Taluk Coimbatore District	
Attention	-	Sample Condition	Good
TRF No.	TRF/0571/2025-26	Sampled by	Laboratory
Sample Name	BOREWELL WATER - 2	Sampling Method	GLCS/SOP/W/028
Sampling Description	Liquid	Sample Code	GLCS/01718/2025-26
Location Name	MUTHUGOUNDANUR	Date of Analysis	05-05-2025
Sampling Hours	05.35	Date of Completion	18-06-2025
Sampling Date	04-05-2025	Sampling Receipt Date	05-05-2025
Location Co-ordinates		10°47'24.40"N 76°56'17.91"E	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

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Technical Manager

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

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National Accreditation Board for Education and Training

Certificate of Accreditation

Geo Exploration and Mining Solutions, Salem

No. 17, Advaita 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


 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.