

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT & ENVIRONMENT MANAGEMENT PLAN

“B1” CATEGORY – MINOR MINERAL – CLUSTER - NON-FOREST LAND-PATTA LAND

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

TOTAL EXTENT OF CLUSTER – 11.72.5 Ha

Tmt. D. RANI MULTI COLOUR GRANITE QUARRY

At

Project Proponent

Tmt.D.Rani,

W/o. E. Dhanapal,

Old. No. D/364, New No. D/11,

Ukkira Kaliamman Koil Street,

Anna Nagar, Thennur, Trichy District,

Tamil Nadu State - 620 017.

PROJECT LOCATION	PROPOSED PRODUCTION
75/1B, 75/3A, 76/1, 78/1 & 78/2 Extent: 2.93.0 ha Veeriampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State.	Reserves: 1,85,730m ³ of ROM (Granite Recovery @ 40% = 74,292m ³) Annual Peak Production Capacity – 8,020m ³ of ROM Ultimate Depth = 38m BGL (1m Topsoil + 2m Weathered rock + 35m Multi Colour Granite)

Complied as per ToR Obtained Vide

File No.12692 TOR Identification No. TO25B0108TN5149282N Dated:07.11.2025

Environmental Consultant	Laboratory
 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 Category ‘A’ ,31 & 38 Category ‘B’ Certificate No: NABET/EIA/25-28/RA0424 Phone: 0427-2431989, Email: ifthiahmed@gmail.com, geothagam@gmail.com Web: www.gemssalem.com	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: Oct 2025 to Dec 2025

JANUARY 2026

UNDERTAKING

I Tmt. D. Rani given undertaking that this Draft EIA & EMP report prepared for our Multi Colour Granite Quarry situated in S.F. Nos. 75/1B, 75/3A, 76/1, 78/1 & 78/2 over an extent of 2.93.0Ha in Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State based on the Transfer in ToR obtained vide issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File no.12692 TOR Identification No.TO25B0108TN5149282N Dated:07.11.2025.

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

Tmt.D.Rani



Place : Karur

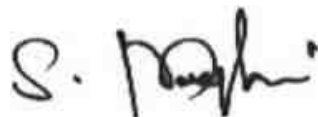
Dated :

DECLARATION

I, S.Nagamani – EIA Co Ordinator declare that the Draft EIA & EMP report for the Multi Colour Granite quarry in S.F. Nos. 75/1B, 75/3A, 76/1, 78/1 & 78/2 over an extent of 2.93.0Ha in Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State 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



S.Nagamani EIA Co Ordinator

M/s. Geo Exploration and Mining Solutions

Place: Salem

Dated:

- For easy representation of Proposed Applied Quarry and Nearby Proposed Quarries in the Cluster are given unique codes and identifies and studied in this Draft EIA/EMP Report.

PROPOSED QUARRY				
CODE	Name of the Owner	S.F. Nos	Extent	Status
P-1	Tmt.D.Rani W/o. E. Dhanapal, Old. No. D/364, New No. D/11, Ukkira Kaliyamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State - 620 017.	75/1B, 75/3A, 76/1, 78/1 & 78/2	2.93.0Ha	File no.12692 TOR Identification No.TO25B0108TN51 49282N Dated:07.11.2025.
		Total	2.93.0Ha	
EXISTING QUARRIES				
E-1	Thiru. E. Dhanapal, Old No. D-364, New No D/11, Ukkara Kaliyamman Street, Thennur, Trichy District, Tamil Nadu – 620 117	74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D & 74/2	4.89.0Ha	21.02.2014 to 20.02.2034
E-2	Tvl.Vinayaga Enterprises, No.20/615, Vethasalapuram, Thogamalai, Kulithalai taluk, Karur District.	72/2A,72/3, 72/4A, 72/4B	3.90.5	24.02.2023 to 23.02.2043
		Total	8.79.5 Ha	
TOTAL CLUSTER EXTENT			11.72.5Ha	

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

TERMS OF REFERENCE (ToR) COMPLIANCE

Tmt. D. Rani

“ToR issued vide File No.12692 TOR Identification No. TO25B0108TN5149282N Dated 07.11.2025”

SEAC CONDITIONS – SITE SPECIFIC		
1.1	1. The PP shall furnish the Consent lease agreement from the landowner, registered with competent authority during the final EIA	Noted and agreed. The Lease deed agreement registered will be submitted along with the final EIA.
	2. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The ‘Standard Operating Procedures’ (SoP) executing the planned activities.	Noted & agreed. As per the ToR conditions the cluster management committee is formed, the agreement affidavit for the formation of CMC will be submitted along with the Final EIA.
	3. The Geo Referenced Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	Noted & agreed. The Geo referenced boundary pillars were erected. The same will be submitted along with final EIA report.
	4. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	Noted and agreed The enumeration of structures covering is detailed in the given in the EIA report, Chapter No. III.
	5. 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 1km. 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.
	6. 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	Noted & agreed. Fencing erected around the lease area, Garland drainage along with silt tank is under construction. The plantation activities are carried out in the project site the photographs of this is furnished.

	the adjacent quarries & water bodies nearby provided as per the approved mining plan.	There are few neem trees with the age of <3 years will be transplanted in to the safety barrier. The details of the water bodies are given in the chapter No. 2.
	7. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	Noted and agreed The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. III.
	8. 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 has been prepared covering the entire life of the mine and the same is furnished in the Chapter No. X.
	9. 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 The Cumulative impact study has been carried out covering proposed and existing quarries activities drilling, blasting, loading and haulage. The details are given in the Chapter No. VII.
	10. 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 & agreed The Conceptual plan prepared along with the haul road accessibility, ensuring slope stability of the working benches. The Progressive Mine closure plan has been prepared as a part of the Mining plan and enclosed along with this Draft EIA as Annexure.
	11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/video graphic evidence along with the EIA report.	Noted and agreed It is ensured that the CCTV camera will be installed in the project site for the surveillance purpose, due to the technical issues the activity CCTV will be installed immediately after execution of lease deed.
SEAC STANDARD CONDITIONS		
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	Note applicable. It is a Fresh Lease
	2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of	Noted and Agreed The VAO certificate regarding habitations within 300m radius is enclosed as Annexure.

habitations within 300m radius from the periphery of the site.	There is no habitation within the radius of 300m from this proposal.
3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc., with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	Noted & agreed The structure study has been carried out within the radius of 1km. 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 Hydrogeological study has been carried out in the project site considering the water bodies located within the radius of 1km. The hydrogeological study (Resistivity survey) is detailed in the EIA report, Chapter No.3.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Noted and agreed The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	Noted and agreed Nearest Reserve Forest: Lalapettai R.F 7km-NE Nearest Sanctuary : Kadavur Slender Loris – 29 km – SW
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.	Not Applicable It is a fresh proposal
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 The proposed depth is 38m, the slope stability action plan will be carried out after mine reaches the 30m depth.

	9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	Noted and agreed Proponent given under taking that the blasting will be carried out by the statutory person as per the MMR 1961.
	10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Noted and agreed It is a Granite quarry project, the blasting will be only involved for the removal of weathered/ overburden portion during the developmental stage. Later Diamond wire saw cutting method will be deployed.
	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 other quarry leases in the name of Project proponent in the state.
	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.	It is a fresh lease
	13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	
	14. Quantity of minerals mined out. • Highest production achieved in any one year • Detail of approved depth of mining. • Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • If EC and CTO already obtained, the copy of the same shall be submitted. • Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	
	15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Project area boundary coordinates superimposed on Toposheet Chapter-1, Figure. No. 2.2, Page No. 13. Surface Features around the project area covering 10km radius Chapter-2, Figure. No. 2.5, Page No. 16. Geology map of the project area covering 10km radius Chapter-2, Figure. No. 2.8, Page No. 23 Geomorphology Map of the Study Area covering 10 km radius Chapter-2, Figure. No. 2.9, Page No. 24.

16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	Noted & agreed It will be submitted on final EIA appraisal.
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted & agreed Fencing, garland drainage & green belt photographs are enclosed in chapter 2.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	Noted and Agreed Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2, Table No.2.6 & 2.7, page No. 25
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	Noted and agreed Organization chart for the Competent persons to be appointed as per the provisions of the Mines Act 1952 is given in the Chapter No.6 Page no.124
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 Post monsoon season October to December 2025. Details in Chapter No. 3.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of	Noted and agreed The Cumulative impact study due to mining operations are detailed in chapter 7.

	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.	Noted and agreed The lower part of the mine pit will act as temporary rainwater harvesting structure, besides Rainwater harvesting structure will be constructed near the mine office and labour shed after commencement of mining operation.
24.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2.
25.	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable There is no waste anticipated in this Rough Stone and gravel quarrying operation. The entire quarried out materials will be utilized (100%).
26.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Noted and agreed The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
28.	Impact on local transport infrastructure due to the Project should be indicated.	Noted and agreed Traffic density survey was carried out to analyse the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Chapter No.2
29.	A tree survey study shall be carried out (nos., name of the species, age,	Noted and agreed

diameter etc.) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Around 10 Nos of neem trees with the age of 2 – 5 years within the project area, this trees will be transplant to the safety barrier.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Noted and agreed After the completion of mining operation, the quarried-out land will be utilized as temporary storage reservoir. The details are given in the Chapter No.4
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Noted and Agreed
32. The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the Appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Noted and agreed The varieties of plantations have been proposed as per the Appendix given in the ToR.
33. Taller/one-year-old Saplings raised in appropriate size of bags; preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Noted and Agreed
34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Noted and Agreed Disaster management Plan details in Chapter-7.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Noted and Agreed A Risk Assessment and management Plan Chapter- 7
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules	Noted and Agreed Occupational Health impacts are given in the Chapter- 10.

	should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	
	37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Noted and agreed. No Public Health Implications anticipated due to this project.
	38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Noted and Agreed Details explained Socio economic and impacts studies regarding Chapter No. 3..
	39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given	Noted and Agreed No Litigation is pending against the project.
	40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.,	Noted and agreed The benefits of the project are given in the Chapter No 8. • Through this project around 1500 Nos of trees will be planted • The government will get revenue from the way of Seigniorage fee, royalty etc.,s Around 38 people will get direct employment through this project.
	41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF & CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	Not applicable, It is a fresh lease
	42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	Noted and Agreed Details are discussed in chapter no 10.
	43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and Agreed
3. Seiaa Specific Conditions :		
S.No	Terms of Reference	
3.1	After detailed discussions, the authority accepts the recommendations of SEAC –	Noted and agreed

	II and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 37,400m³ of ROM which includes 14,960m³ of Granite Recovery @ 40% and 22,440m³ of Granite waste @ 60% for a depth of mining upto 28m BGL and annual peak production shall not exceed 3208 m³ of Granite Recovery, as per the approved mining plan, under Cluster for undertaking the Management Plan subject to the conditions as recommended by SEAC – II & normal Conditions & the SEIAA standard conditions in addition to the following SEIAA Specific conditions. 1. The PP should furnish the detail of the water table in the proposed quarry site, duly certified by the competent/qualified authority along with the EIA report.	
SEIAA STANDARD CONDITION		
4.1 Cluster Management Committee		
1	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Noted and agreed Cluster management committee detailed in chapter 7. Cluster management committee has been formed with mutual agreement with the proponents including Proposed quarry at present are framed.
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development water sprinkling, tree plantation, blasting etc..	Noted and agreed. As per the committee agreement proponents will coordinates for the Greenbelt development, Water sprinkling and tree plantation activities combined.
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Noted and agreed. The formation of committee with list of members has been submitted to the AD mines office, Karur and the same will be update in every year.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	As per the committee agreement the blasting frequency will be discussed and carryout by the Mines Manager appointed by the proponents and the same will be updated in the committee minutes.
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	The risk management plan and disaster management plan will be followed as per this EIA report.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report.	Noted and agreed.

7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner	Noted and agreed A proper action plan regarding the restoration will be followed by the committee.
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	Noted and agreed.
Agriculture & Agro - Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	Noted and agreed As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present will be low. With proper mitigation measures, the project will be carried out to reduce the impact further to the level of negligence.
10	Impact on soil flora & vegetation around the project site.	Noted and agreed The vegetation details have been provided in chapter 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
11	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Noted and agreed The vegetation details have been provided in Chapter No 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
12	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem	Noted and agreed The EIA study has been carried out as per this ToR Condition. The details are given in the EIA report Chapter No.3
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted and agreed The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir.
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The project area is bounded by Existing Quarry on the Western side.
Forests		
15	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The nearest reserve forest, Lalpettai R.F – 7.0 km from the project site. The mining operation will not cause any significant impact to the Reserve Forest and Wild Life Sanctuaries. The DFO Letter will be submitted during the appraisal meeting.
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Details of flora and fauna studies given in the Chapter No.3

17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Noted and agreed
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Noted and agreed
Water Environment		
19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining any ecological fragile areas. activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	Hydro-geological study considering the open well and borewell within the radius of 1km along with water level contour map. The details are given in the Chapter No.3.
20	Erosion Control measures	Noted and agreed Garland drainage structures will be constructed around the lease area to control the erosion, as discussed in Section 4.3 under Chapter 4.
21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Details in Chapter 3- Detailed EIA study has been carried out considering the impact to the water bodies and eco system of the area. Details are covered in the Chapter No.3 and 4.
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Noted & agreed Details discussed in Chapter 3 and 4 impact of bio diversity
23	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	Noted & agreed
24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and, possible scars on the landscape damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Noted & agreed. Details discussed under Chapter 3.
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	Noted & agreed Details of impact on soil health, soil erosion, the soil, physical, chemical components and microbial components described in chapter-3.
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Noted & agreed
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment.	Noted & agreed

	b) Bio-geochemical processes and its foot prints including Environmental stress.	
Energy		
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	The mitigation measures to control the Noise, Air, Water and dust is given in the Chapter No.4.
Climate Change		
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and Temperature reduction including control of other emission and climate mitigation activities.	Details of carbon emission and mitigation activities are given int the Chapter No.4
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.	Noted & agreed
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	Noted & agreed
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Details in Chapter 2 mine closure plan
EMP		
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	The detailed Environmental Management plan has been prepared and given in the Chapter No.10
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan	Details in Green belt development in chapter 4
Risk Assessment		
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	The risk assessment and its management plan for this project has been provided in Chapter No. 7.
Disaster Management Plan		
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	The disaster management plan for this project has been provided in Chapter No. 7.

Others		
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	The Project Proponent have obtained VAO certificate and it will be attached in the annexure.
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.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 microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Details of carbon emission and mitigation activities are given int the Chapter No.4

STANDARD TERMS OF REFERENCE		
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	Not applicable. This is Not a violation category project. This proposal falls under B1 Category (Cluster Condition).
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	Noted & Agreed. The applied land for quarrying is a lease deed registered – Patta land. Precise area communication letter granted in the name of project proponent.
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).	Noted & Agreed. Map showing – Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3 Surface Features around the project area covering 10km radius – Figure No. 2.2 Geology map of the project area covering 10km radius - Figure No. 2.7.

		Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
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.	Noted & Agreed. Map showing – chapter-2 Geology map of the project area covering 10km radius Geomorphology Map of the Study Area covering 10 km radius
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.	Noted & Agreed. 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.	Noted & Agreed. 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.	Noted & Agreed. It is an opencast quarrying operation proposed to operate in Mechanized method. The Granite 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. 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	Noted & 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.

	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.	Not Applicable. There is no waste anticipated during this quarry operation. The entire quarried out Granite will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, 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. Lalpettai R.F 7.0 Km from the project site.
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. Viramalai R.F. 10.67 Km – South West from the Study Area.
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable. 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.	Noted & Agreed. Viramalai R.F. 10.67 Km – South West from 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.
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.	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. Kadavur Slender Loris Sanctuary - 30.0 km – South West
18	A detailed biological study of the study area [core zone and buffer zone (10 KM radius of the	Noted & Agreed.

	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	Noted & Agreed. Baseline Data were collected for One Season Post monsoon) Oct– Dec 2025 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.

	EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	
23	Air quality 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.	Noted & Agreed. Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view. 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.	Noted & Agreed. Total Water Requirement: 2.5 KLD Discussed under Chapter 2.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable. Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis. Drinking water will be sourced from the approved water vendors.
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Noted & 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.
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.	Noted & Agreed. Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Chapter 4.
28	Based on actual monitored data, it may clearly be shown whether working will intersect 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	Not Applicable. The ground water table The Ground water table occurrence in this area is 85m below ground level.

	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 ultimate depth of quarry is 38mBGL + 2m out crop. This proposal of 38m below ground level will not intersect the ground water table, which is inferred from the hydro-geological carried out at the project site. Discussed under Chapter 3.
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out	Noted and agreed.
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.	Noted and agreed. Highest elevation of the project area is 130-131m AMSL. Ultimate depth of the mine is 38m BGL Water level of the area is 85m BGL
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	Noted and agreed. Greenbelt Development Plan is discussed under Chapter 4
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.	Noted and agreed. Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details in Chapter 2
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Noted and agreed. 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 Page No.32.
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.	Noted and agreed. Discussed under Chapter 2. Mine Closure Plan is a part of scheme of Mining Plan enclosed as Annexure

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.	Noted and agreed. Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4,
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Noted and agreed. No Public Health Implications anticipated due to this project. Details of CER are discussed under Chapter 8
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Noted and agreed. No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 48 people directly and 80 people indirectly. Details in Chapter 3 and Benefits of the project discussed in chapter-8
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.	Noted and agreed. Detailed Environment Management Plan for the project to mitigate the anticipated impacts described under Chapter 4 is discussed under Chapter 10
39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	Noted and agreed. The outcome of public hearing will be updated in the final EIA/AMP report.
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending in any court against this project.
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	Noted and agreed. Project Cost is Rs. Rs.2,95,80,000/-
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Noted and agreed. Disaster management Plan prepared and discussed with 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.	Noted and agreed. The Benefits of the Project discussed 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	Given in this EIA Report (Page No a to s)

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 as annexure
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.	Questionnaire of the project is enclosed with Annexure.
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.	Noted and agreed. Detailed Chapter-2 Lease plan & Geological plan and Year wise production plan

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CHAPTER – 1: INTRODUCTION

1.0 Preamble

The project proponent Tmt. D. Rani applied for the quarrying of Multicolour Granite over an Extent of 2.93.0Ha in S.F.No 75/1B, 75/3A, 76/1, 78/1 & 78/2, Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State.

Project Timeline:

- Proponent applied for Multicolour Granite Quarry on 08.08.2022
- Precise area Communication Letter was issued by the Natural Resources Department (MMB.2) Department vide Letter No. 711/MMB.2/2023-1, Dated: 28.10.2024 to prepare Mining plan
- The Mining plan was prepared and got approval from the Director, Department of Geology and Mining, T.V.K. Industrial Estate, Guindy Chennai vide letter No. 5564/MM2/2020, Dated: 06.08.2025.
- The Mining plan has been approved for the Mineable reserves of 1,85,730m³ of ROM (Granite Recovery @ 40% is 74,292m³) 30,140m³ of Weathered Rock and 11,482m³ of Topsoil up to the depth of 38m (1m Topsoil + 2m Weathered rock + 35m Multi Color Granite).

As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (cluster quarries - 1 proposed quarry and 2 existing quarries forming Cluster Category {Total Extent of the Cluster is 11.72.5Ha} - Cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016).

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/549329/2025, Dated 08/09/2025 and the ToR was granted vide File No.12692 TOR Identification No. TO25B0108TN5149282N Dated.07.11.2025

Based on the ToR Baseline Monitoring study has been carried out for one season (**Post Monsoon**) i.e., **Oct – Dec 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) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project.

1.1 Purpose of the Report

The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 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.

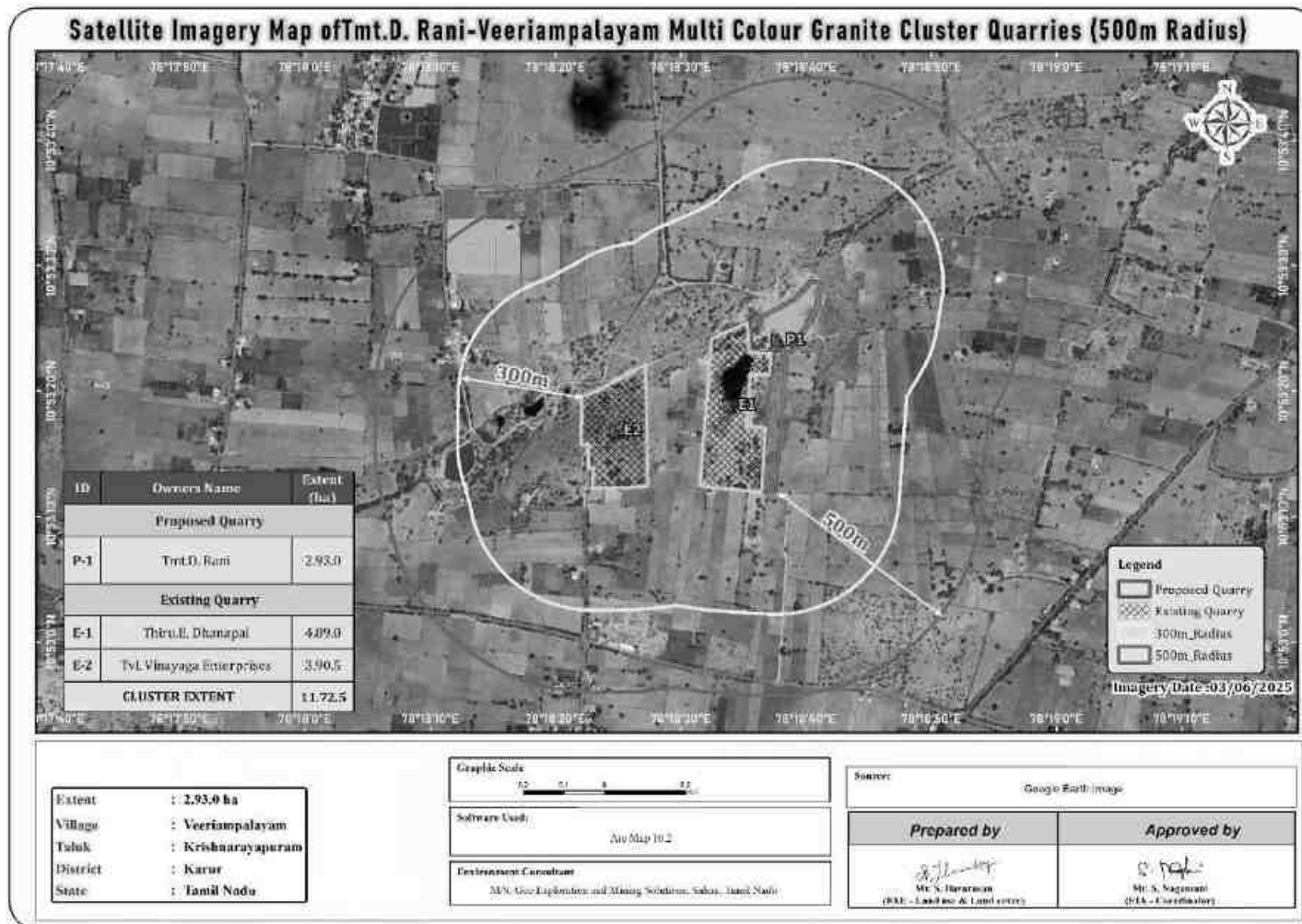
Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation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

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

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 vide Ref: Nil.

“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”

Figure1.0: Cluster Quarries Map (500m Radius)



1.2 Identification of Project and Project Proponent**1.2.2 Identification of Project Proponent****TABLE 1.3: DETAILS OF PROJECT PROPONENT**

Name of the Project Proponent	Tmt.D.Rani
Address	W/o. E. Dhanapal, Old. No. D/364, New No. D/11, Ukkira Kaliamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State - 620 017.
Mobile	+91 94431 26726
E-Mail	omsakthitile@gmail.com
Aadhar No	6410 3247 4153

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 Hydraulic Excavator, Eco-friendly Diamond Wire Saw Cutting and small amount of blasting only for removal of overburden and weathered portions.

On the basis of available reserves the life of the mine is computed and approved as 25 Years.

Proposed production is detailed in the Mining plan for the first five years –

Proposed Project

Total Mineable Recoverable Reserves of Granite @ 40%	=	74,292m ³
Average Production per year @ 40%	=	14,960m ³ /5 Years = 2,992m ³
Estimated Life of the quarry	=	74,292m ³ / 2,992m ³
Life of the quarry	=	25Years

Table 1.4: Resources and Reserves of Project

Description	ROM in m ³	Granite recovery @40% in m ³	Granite waste @60% recovery in m ³	Weathered Rock in m ³	Side Burden in m ³	Top Soil in m ³	Depth (m)
Geological Resources	6,13,900	2,45,560	3,68,340	42,715	44,100	15,617	38
Mineable Reserves	1,85,730	74,292	1,11,438	30,140	-	11,482	38
Year wise Production for Five years	37,400	14,960	22,440	30,140	-	11,482	28

Source: Approved Mining plan.

Table 1.5: Salient Features of the Proposed Project

Name of the Quarry	Tmt.D.Rani Multi Colour Granite quarry
SF.no	75/1B, 75/3A, 76/1, 78/1 & 78/2
Extent	2.93.0Ha
Village & Taluk	Veeriampalayam Village, Krishnarayapuram Taluk
Lease period	20 years
Mining Plan Period	20 years
Year wise Production prepared for	1 st five years
Life of the Mine	25 years
Land use classification	It is a Patta land classified as punjai

Previous lease particulars		It is Patta land, registered in the name of Thiru. Thiru.E.Dhanapal, S/o. Erachi Reddiar vide patta nos.3391,2086,3414,1910 and 3525. The applicant has obtained consent from the Pattadhar for the period of twenty five years.
Proposed Depth for five years plan period		28m (1m Topsoil + 2m Weathered rock + 25m Multi Colour Granite)
Ultimate depth of Mining		38m (1m Topsoil + 2m Weathered rock + 35m Multi Colour Granite)
Ultimate Pit Dimension		189m(L) x 96m (W) x 38m (D)
Toposheet No		58-J/05
Latitude between		10°53'11.85785''N to 10°53'28.61999''N
Longitude between		78°18'35.34535''E to 78°18'40.69562''E
Topography		The area is situated in undulated terrain. The gradient is gentle towards East side and altitude of the area is 130m to 131m above from MSL. The Multi-Colour granite is covered with 1m thickness of soil and 2m weathered rock.
Ground water		The water table in the area is found 85 below ground level it is revealed from the Geophysical Resistivity study
Machinery proposed	Jackhammer	6
	Compressor	2
	Crawler crane	1
	Excavator	2
	Tipper	2
	Diesel Generator	1
	Diamond wire saw	2
Proposed manpower deployment		41
Project cost		Rs.2,95,80,000/-
CER cost		Rs. 3,00,000/-
Nearby Water Bodies		There is no water bodies such as odai, canal river adjacent to the project site Water bodies located in the study area is given below Pungar Stream - 3.0 Km – SE Panjapatty Lake - 6.5 Km – SW Canal - 4.5 Km – NW Cauvery River - 7.3 Km – North
Nearest Habitation		670 m – South
Nearest Reserve Forest		Lalapettai RF – 6.7km – North
Nearest Wild Life Sanctuary		Kadavur Slender Loris Sanctuary – 29.0km – South West

Source: 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 the opencast mechanized mining method, employing the diamond wire saw cutting technique for extraction. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

The peak production of Multi –Colour granite is 8020m³ of ROM maximum in a year (27m³ per day/ 2 Tippers per day considering 12m³ per load). The depth of the mining is 38m Bgl.

1.3.2 Location of the Project

- The area is located in *S.F.Nos 75/1B, 75/3A, 76/1, 78/1 & 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu.*
- The entire quarry lease area falls in the Patta land, the area is situated in almost flat terrain.
- The Altitude of the area is ranges from **130m to 131m above from MSL**
- The area is mentioned in GSI Topo sheet No. **58-J/ 05.**
- The Latitude between of **10°53'11.85785''N to 10°53'28.61999''N**

- The Longitude between of $78^{\circ}18'35.34535''\text{E}$ to $78^{\circ}18'40.69562''\text{E}$

Figure 1.1: Key Map Showing the Location of the Project Site

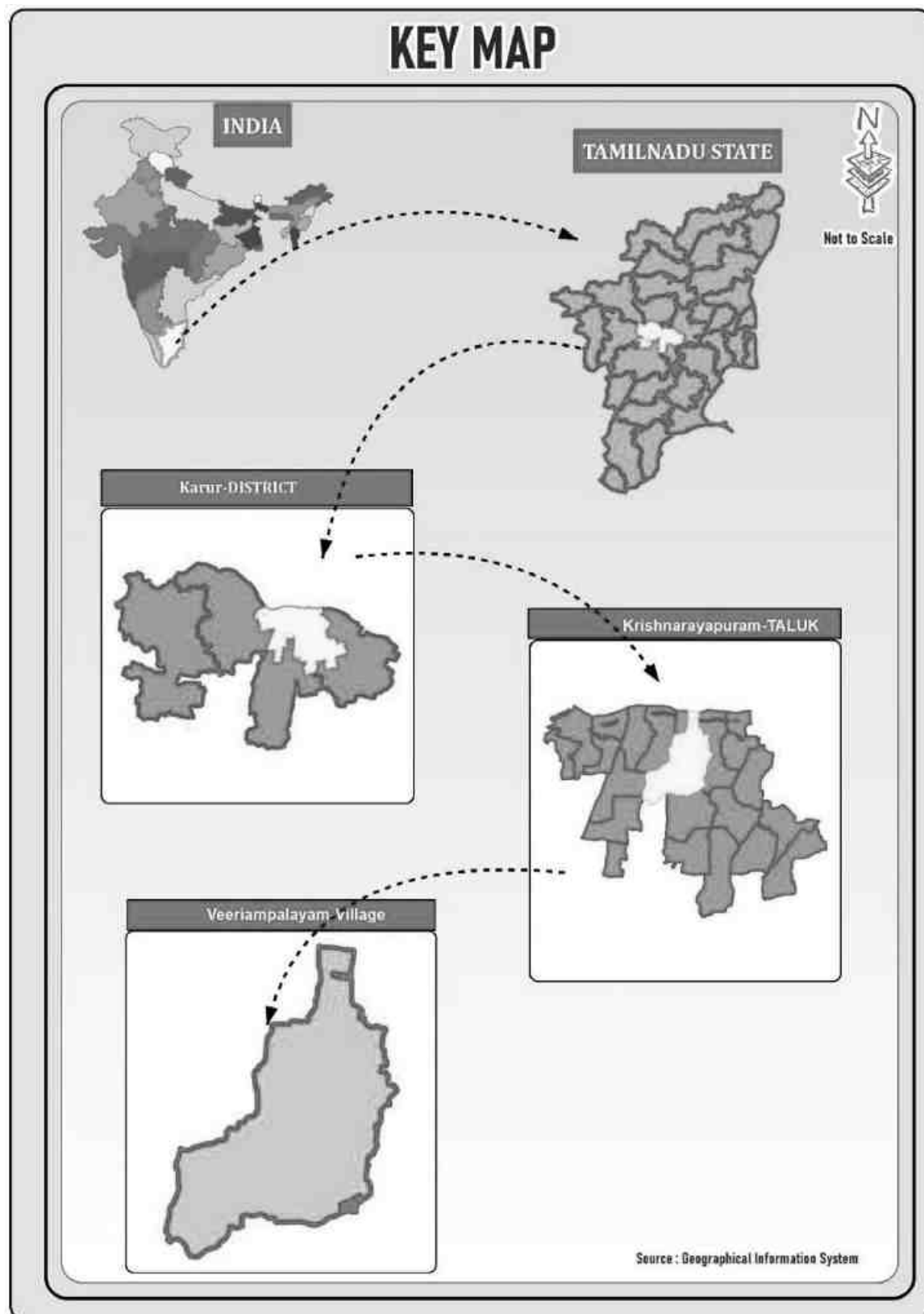


Figure 1.2: Toposheet Map of the Study Area 10 Km Radius

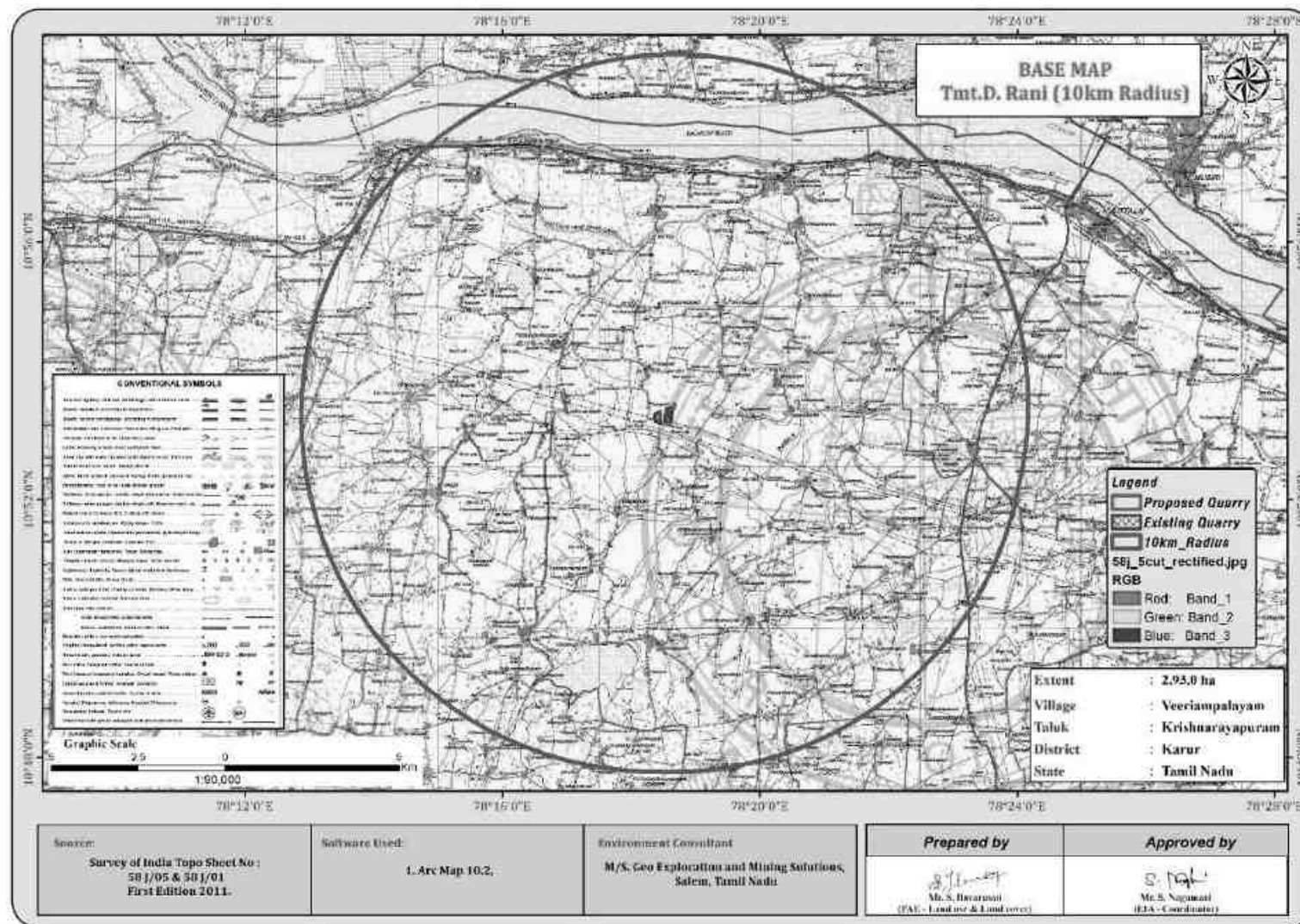
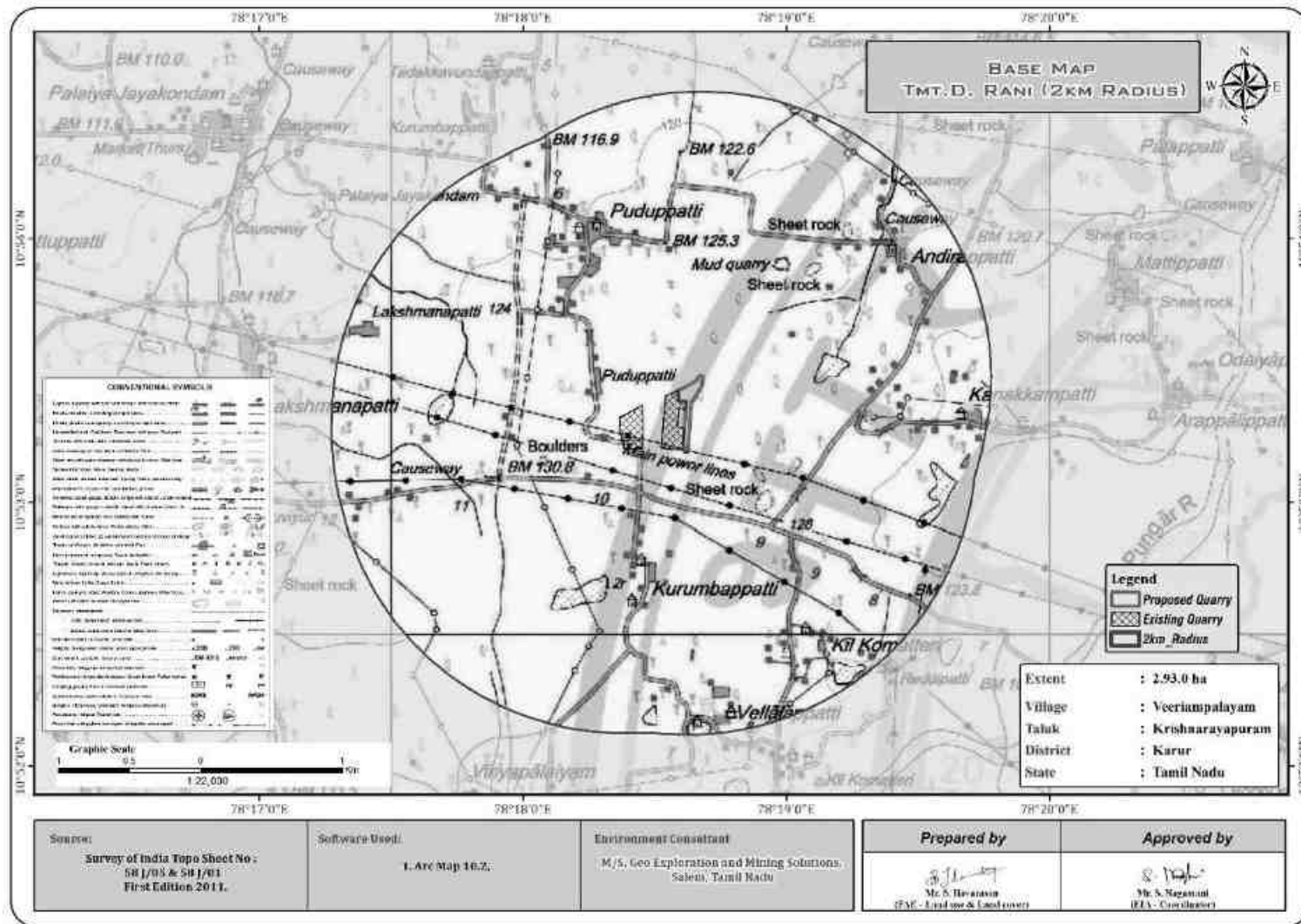


Figure 1.3: Toposheet Map of the Study Area 2 Km Radius



1.4 Environmental Clearance

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

1. Screening,
2. Scoping
3. Public consultation &
4. Appraisal

SCREENING

- ☞ Proponent applied for Multicolour Granite Quarry on 08.08.2022
- ☞ Precise area communication letter issued vide G.O. Letter No. 711/MMB.2/2023-1, Dated: 28.10.2024 for a period of 20 years.
- ☞ The Mining plan was prepared and got approval by the Department of Geology and Mining, Guindy, Chennai vide letter No. 5564/MM2/2020, Dated: 06.08.2025.
- ☞ The Mining plan has been approved for the quantity of 1,85,730m³ of ROM (Granite Recovery @ 40% is 74,292m³) 30,140m³ of Weathered Rock and 11,482m³ of Topsoil up to the depth of 38m (1m Topsoil + 2m Weathered rock + 35m Multi Colour Granite).
- ☞ Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/549329/2025, Dated:08.09.2025

SCOPING

- The proposal was placed in 629th SEAC meeting held on 10.10.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 910th SEIAA meeting held on 03.11.2025 and issued ToR vide File No.12692 TOR Identification No. TO25B0108TN5149282N Dated:07.11.2025.

PUBLIC CONSULTATION

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

APPRAISAL

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

The report has been prepared using the following references:

- Guidance Manual of Environmental Impact Assessment for Mining of Minerals, Ministry of Environment and Forests, February, 2010
 - EIA Notification, 14th September, 2006
 - ToR vide File No.12692 TOR Identification No. TO25B0108TN5149282N Dated:07.11.2025.
- In addition, other relevant standards for individual activities such as Sampling and Testing of Environmental attributes have been followed

1.5 Post Environment Clearance Monitoring

The proposed 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.

1.6 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. A brief description of each Chapter is presented in Table No. 1.6.

TABLE 1.6 – STRUCTURE OF THE EIA REPORT

S. No	Chapters	Title	Particulars
1	Chapter 1	Introduction	Presents, an Introduction along with Scope and Objective of this EIA/EMP Studies
2	Chapter 2	Project Description	Presents the Technical Details of the Project
3	Chapter 3	Description of Environment	Presents the Baseline Status for various Environmental Parameters in the Study Area for One Season (3 Months)
4	Chapter 4	Anticipated Environmental Impacts and Mitigation Measures	Presents the Identification, Prediction and Evaluation of overall Environmental Impacts due to the Proposed Projects Activities. Also presents Proposed Mitigation Measures.
5	Chapter 5	Analysis of Alternatives (Technology & Site)	Presents Analysis of alternatives with respect to site
6	Chapter 6	Environment Monitoring Programme	Present details of post project environment monitoring
7	Chapter 7	Additional Studies	Presents Public Consultation, Risk Assessment and Disaster Management Plan
8	Chapter 8	Project Benefits	Presents project benefits as: Improvements in the Physical Infrastructure, Social Infrastructure Employment Potential –Skilled; Semi-Skilled and Unskilled etc.,
9	Chapter 9	Cost Benefit Analysis	Environmental Cost Benefit Analysis has not been recommended at Scoping Stage – thus no analysis carried out separately in this EIA/EMP Report.
10	Chapter 10	Environmental Management Plan	Description of the administrative aspects to ensure the Mitigation Measures are implemented and their effectiveness monitored, after approval of the project.
11	Chapter 11	Summary & Conclusion	Summary of the EIA Report
12	Chapter 12	Disclosure of Consultants Engaged	Disclosure of the Consultants

1.7 Scope of the Study

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the Post Monsoon season Oct 2025 to Dec 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 1.7 – ENVIRONMENT ATTRIBUTES

Sl.No.	Attributes	Parameters	Source and Frequency
1	Ambient Air Quality	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂	24 hourly samples twice a week for three months at 7 locations
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, Perambalur.
3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 4 ground water and 2 surface water locations 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)	At 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 assessment done for the mining associated activities

Source: Field Monitoring Data

The data has been collected as per the requirement of the ToR issued by SEIAA – TN and Standard ToR Published by MoEF & CC.

1.7.1 Regulatory Compliance & Applicable Laws/Regulations

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959
- Mines and Minerals (Development & Regulation) Act, 1957 (MMDR Act)
- 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 of Multicolour granite quarry has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959
- Granite Conservation and Development Rules, 1999 (GCDR)
- Environment Protection Act, 1986
- EIA Notification, 2006
- ToR vide File No.12692 TOR Identification No. TO25B0108TN5149282N Dated:07.11.2025

2. PROJECT DESCRIPTION

2.0 General

The Granite quarry proposal is a fresh lease is situated in Veerampalayam Village, Krishnarayapuram Taluk, Karur District and Tamil Nadu State falls under Cluster Situation as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 11.72.5ha consisting of three quarries. As the extent of cluster is 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 the proposed Quarry

Multicolour granite quarry operation will be carried out by opencast mechanized method involving Eco-friendly Diamond Wire Saw Cutting, Heavy earth moving machineries like Excavators Trucks for Granite exploitation. Shot hole drilling with controlled blasting using slurry explosives for removal of overburden and Weathered portions during initial stage of quarry operation.

2.2 Location of the Project

- The area is located in **S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 & 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamilnadu.**
- The entire quarry lease area falls in the Patta land, the area is situated in almost flat terrain.
- The Altitude of the area is ranges from **130m to 131m above from MSL**
- The area is mentioned in GSI Topo sheet No. **58-J/ 05.**
- The Latitude between of **10°53'11.85785''N to 10°53'28.61999''N**
- The Longitude between of **78°18'35.34535''E to 78°18'40.69562''E**

Table 2.1: Site Connectivity to the Project Area

Nearest Roadway	NH81 - Trichy – Coimbatore– 6.7km-North SH-71 Manapparai – Kulithalai – 8.7km-West
Nearest Village	M.Pudupatti – 670m - West
Nearest Town	Krishnarayapuram- 8km - NE
Nearest Railway Station	Mahadanapuram Railway station – 7.0km - North
Nearest Airport	Trichy Airport – 45.6km- SE
Seaport	Cuddalore-184km-NE
Interstate Boundary	132 km – SW – Kerala State Boundary

Source: Survey of India Toposheet

Table 2.2: Boundary Co-Ordinates of Proposed Project

Boundary Pillar No.	Latitude	Longitude
1	10°53'11.93655"N	78°18'36.46297"E
2	10°53'22.94208"N	78°18'37.24985"E
3	10°53'23.03528"N	78°18'35.58636"E
4	10°53'23.16471"N	78°18'35.59851"E
5	10°53'23.16223"N	78°18'35.45657"E
6	10°53'25.42400"N	78°18'35.34535"E
7	10°53'25.93004"N	78°18'36.52359"E
8	10°53'27.29121"N	78°18'39.00982"E
9	10°53'28.61999"N	78°18'40.25652"E
10	10°53'28.58604"N	78°18'41.06618"E
11	10°53'26.35393"N	78°18'40.69562"E
12	10°53'22.99220"N	78°18'38.67983"E
13	10°53'23.00767"N	78°18'38.40373"E
14	10°53'11.85785"N	78°18'37.59477"E

Figure 2.1: Photographs of the Project Area

Figure 2.3: Google Image Showing Project Area

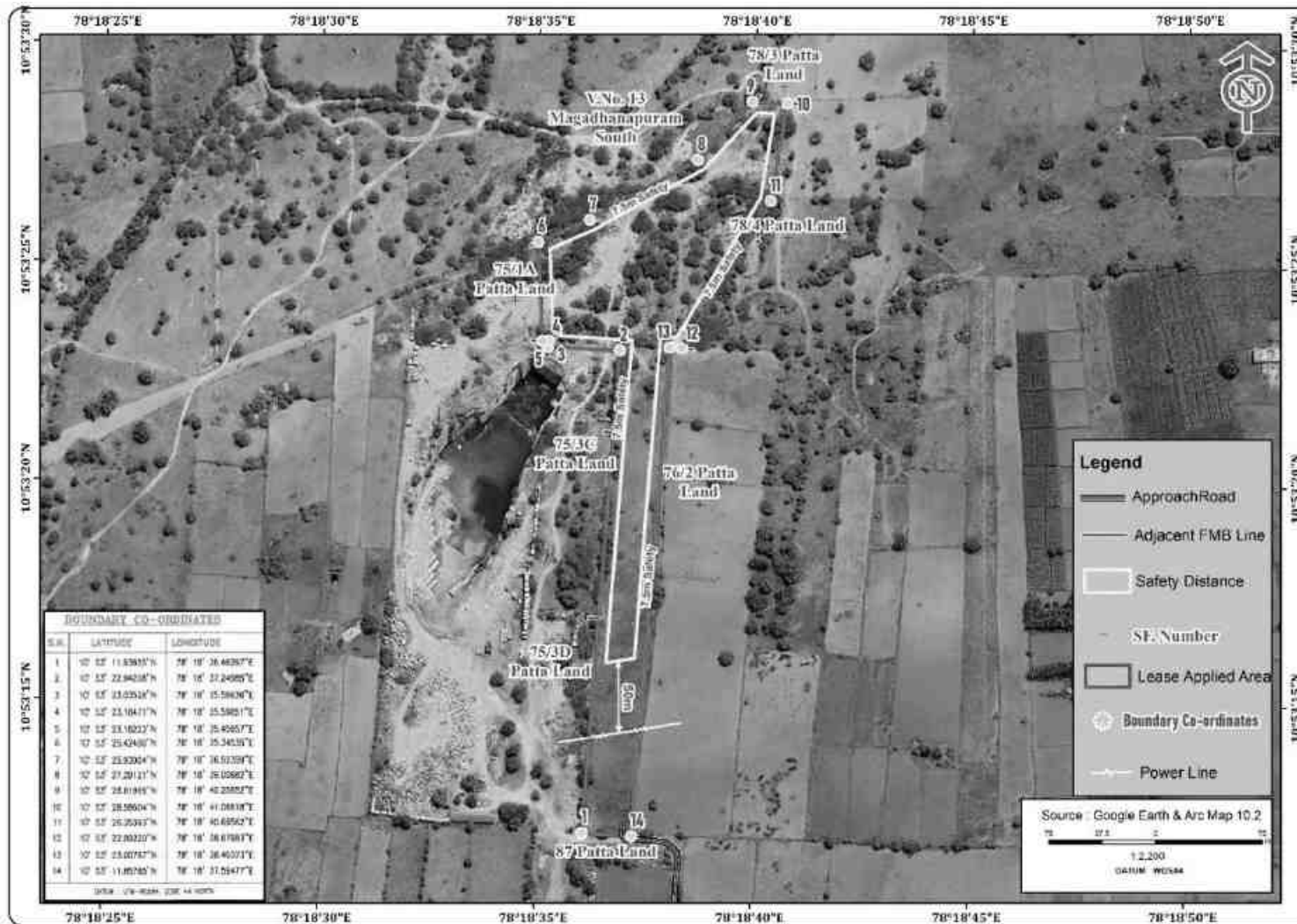


Figure 2.4: Quarry Lease Plan & Surface Plan

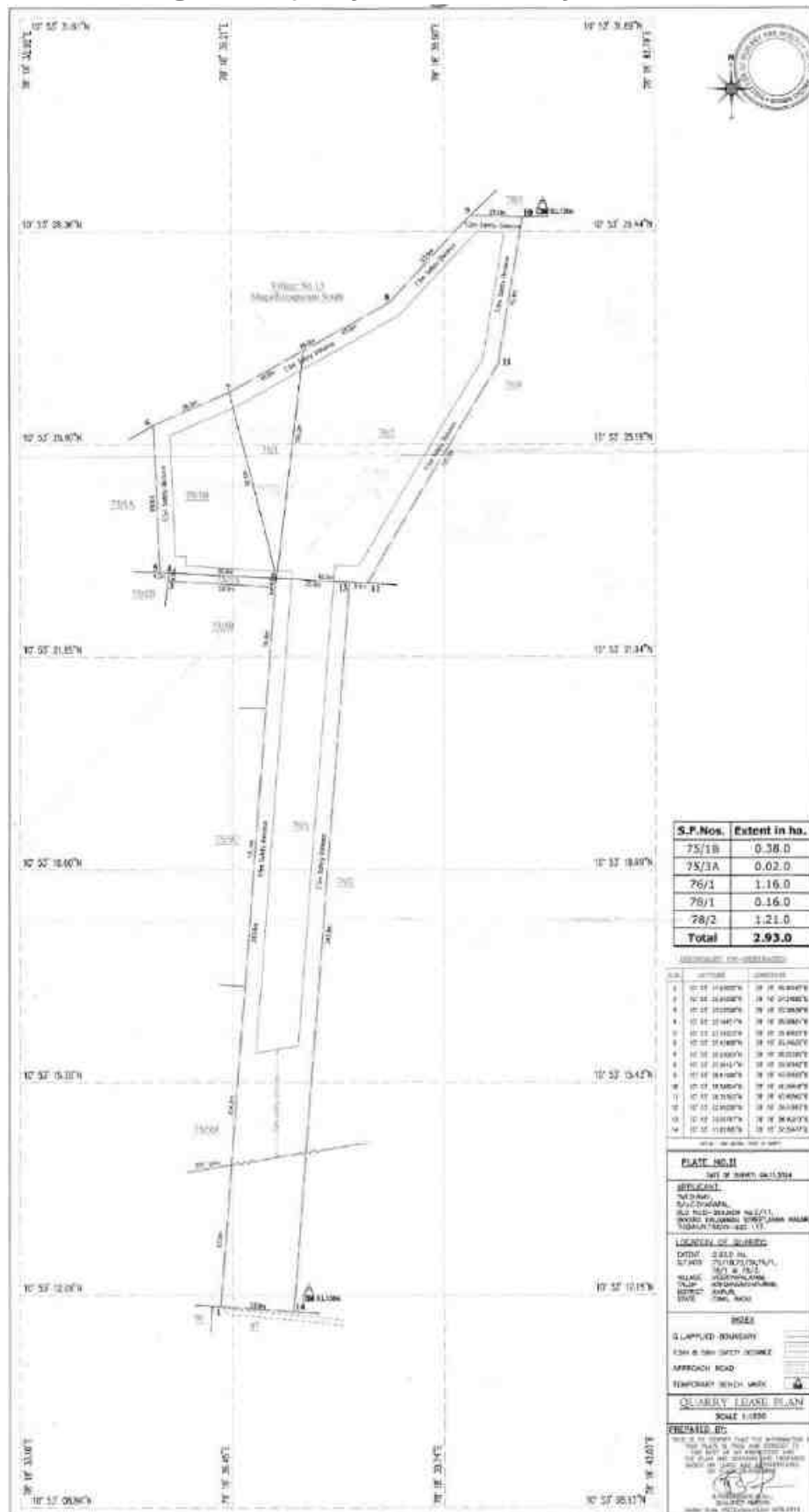


Figure 2.5: Image Showing Surface Features Around 10 Km Radius

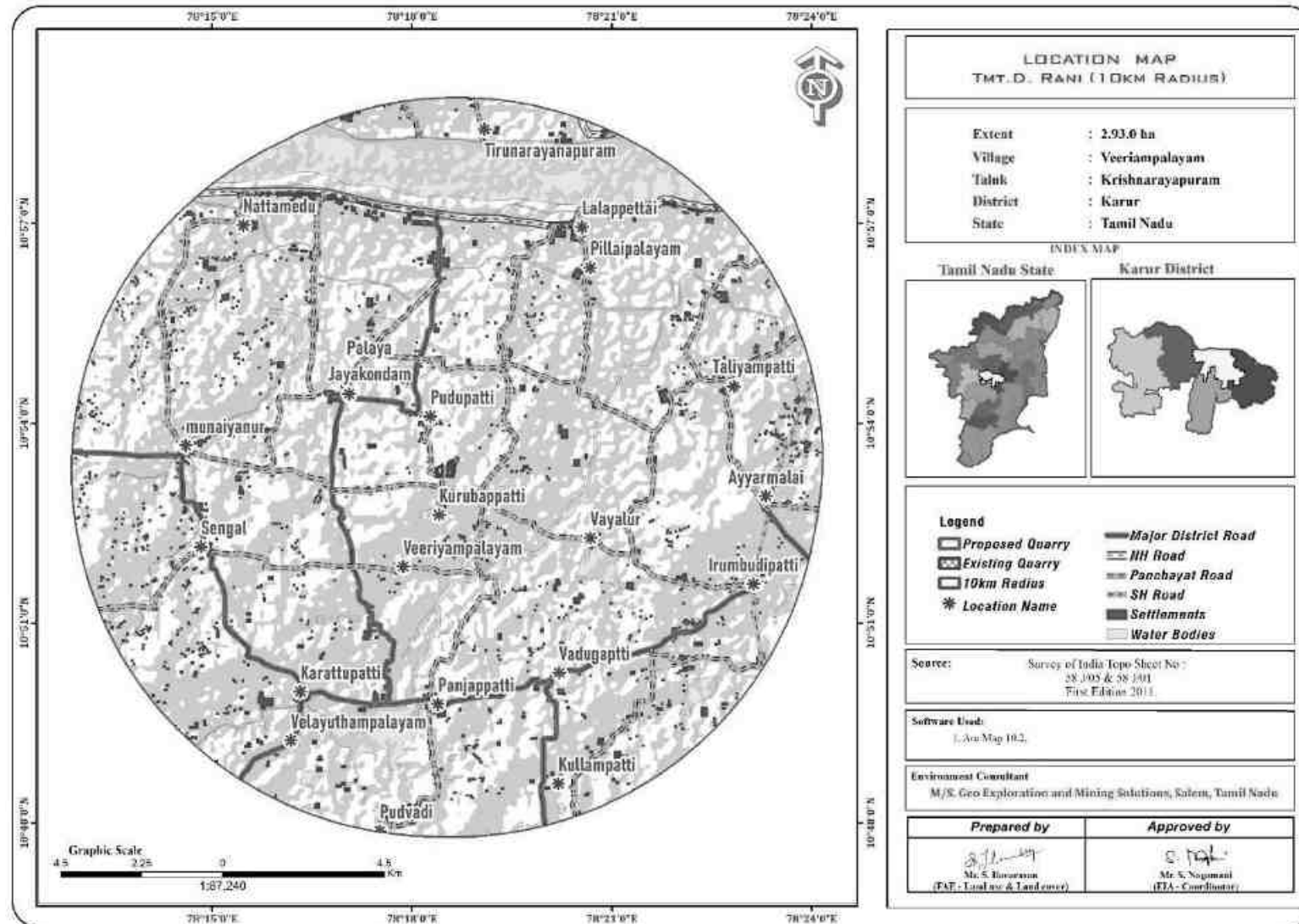


Figure 2.6: Image Showing Surface Features Around 5km Radius

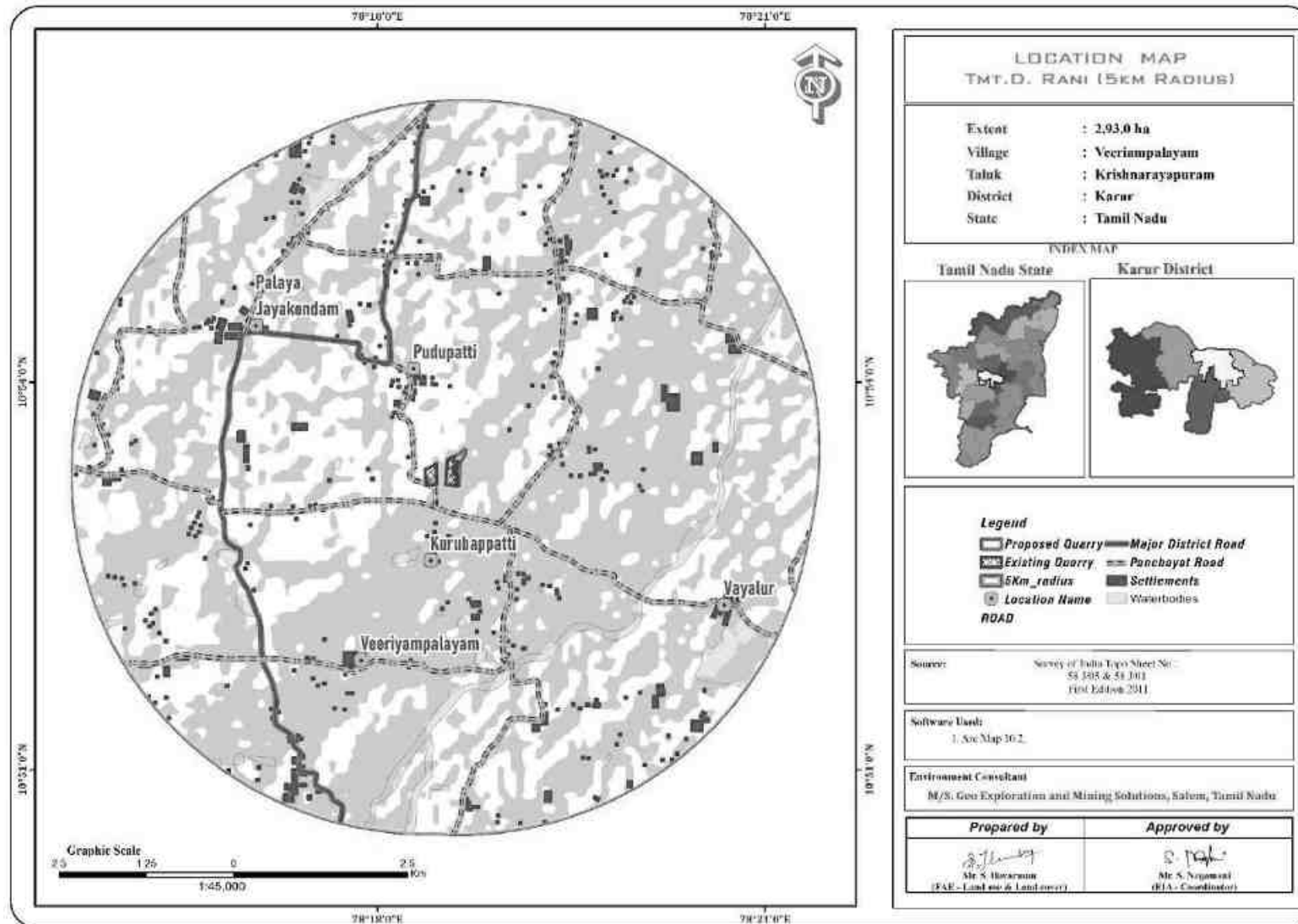
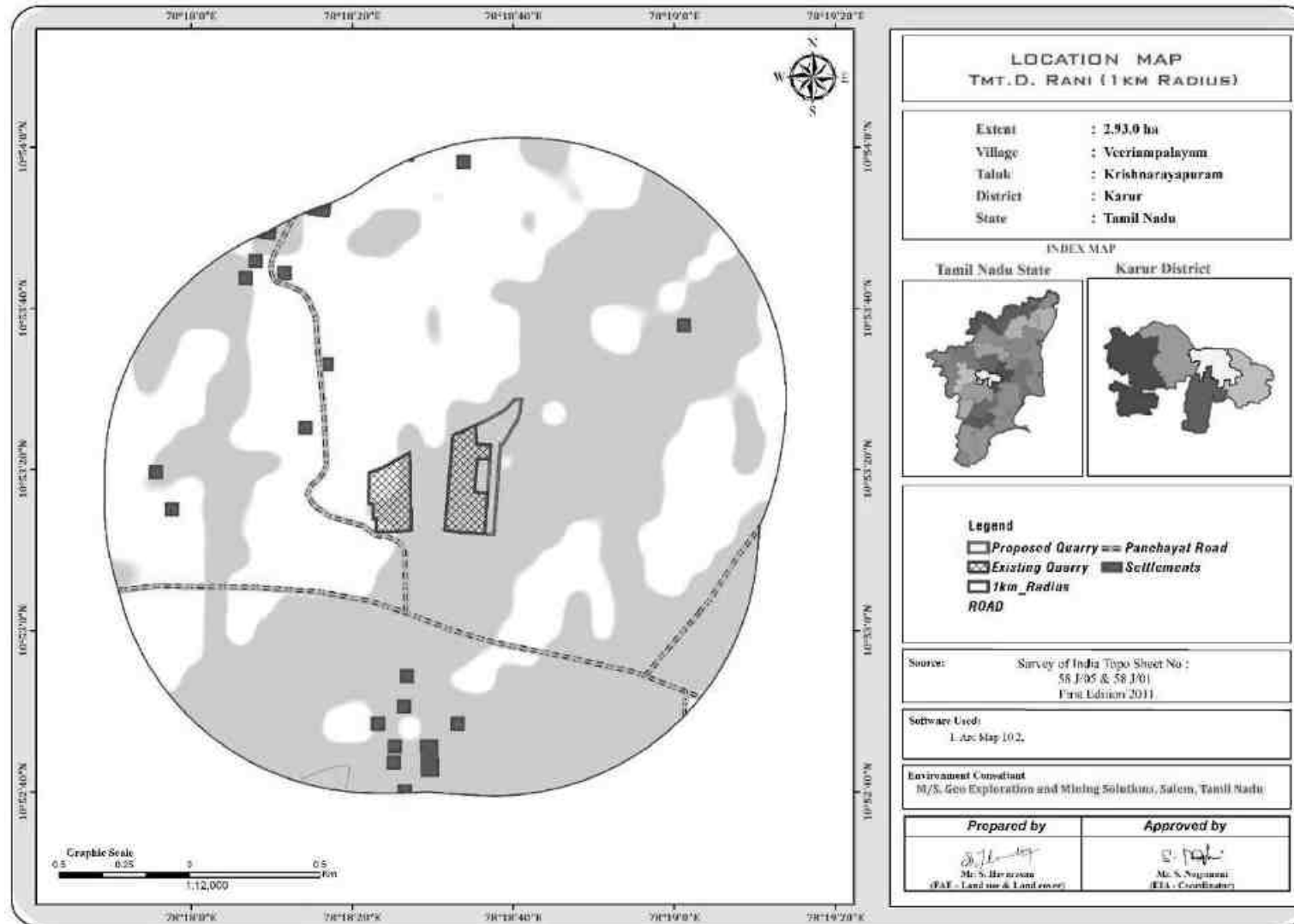


Figure 2.7: Image Showing Surface Features Around 1 Km Radius



2.2.1 Project Area

- The Topography of the area is almost plain terrain with Granite outcrops, the height of the Granite outcrops is a maximum of 2m agl.
- Non – Captive use, opencast Mechanized quarry.
- There is No beneficiation or processing proposed inside the project area.
- Elevation is 130 to 131m above from MSL, showing gentle gradient towards East side.
- Nearest Reserve forest is Lalapettai RF – 6.8km – North,
- No forest land involved in this lease area.

Table 2.3: Land Use Pattern of Proposed Project

<i>Description</i>	<i>Present Area (Ha)</i>
Area under Quarry	Nil
Dump	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized	2.93.0
Grand Total	2.93.0

Source: Approved mining plan

2.2.2 Size or Magnitude of Operation

Table 2.4: Operational Details

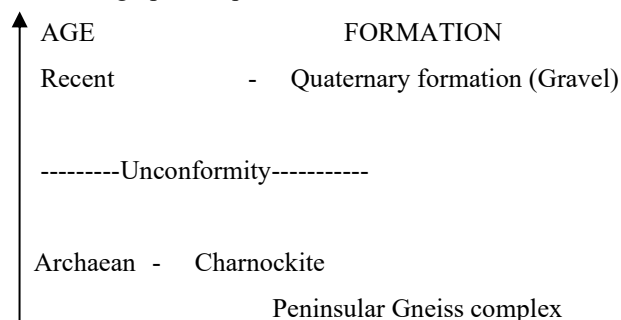
Description	Details
Geological Resources ROM in m³	6,13,900
Granite Recovery (40% in m ³)	2,45,560
Granite Waste (60% in m ³)	3,68,340
Weathered rock(m ³)	42,715
Side Burden(m ³)	44,100
Top Soil in m ³	15,617
Mineable Reserves ROM	1,85,730
Granite Recovery (40% in m ³)	74,292
Granite Waste (60% in m ³)	1,11,438
Weathered rock (m ³)	30,140
Side Burden (m ³)	-
Top Soil in m ³	11,482
Proposed Production for five years plan period ROM	37,400
Granite Recovery (40% in m ³)	14,960
Granite Waste (60 % in m ³)	22,440
Weathered rock(m ³)	30,140
Top Soil in m ³	11,482
Number of Working Days	300
Production of ROM per day in five-year plan period	25
Production of Granite per day in m ³	10
Total Waste per day (Granite waste)	15
No of Lorry Loads per day for Transportation to Granite cutting units in m ³	1
No of Lorry loads for dump	1

Source: Approved mining plan

2.3 GEOLOGY

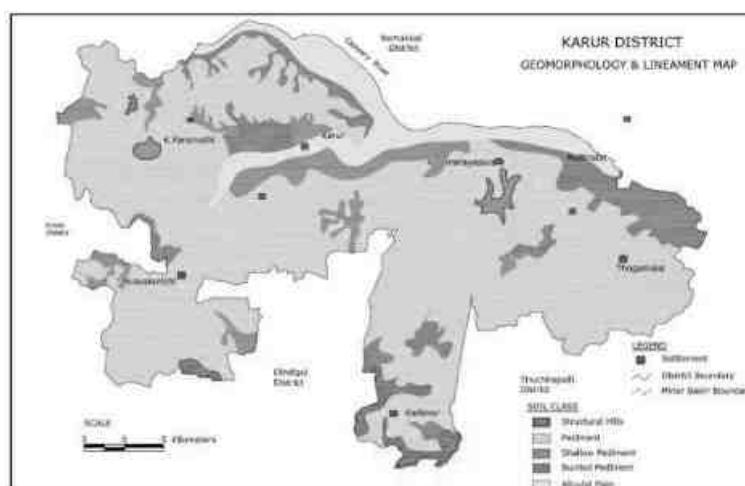
Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the Charnockite body N60°E – S60°W with dipping towards SE60°.

Regional stratigraphic sequence:



Geomorphology

The entire area of the district is a pediplain. The Rangamalai hills and Kadavur hills occurring in the southern side of the district constitutes the remnants of the much denuded Eastern Ghats and rise to heights of over 1031m above mean sea level. There are numerous small residual hills represented by Ayyarmalai, Thanthonimalai and Velayuthampalayam hills. The general elevation of the area is ranging between 100 m and 200m above mean sea level. The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hill, 2) Pediments, 3) Shallow Pediments, 4) Buried Pediments and 5) Alluvial plain. An overall appraisal of groundwater occurrence in each geomorphic unit and the significance of its hydro geological characters are given, geomorphology and lineament details are given.



2.3.2 Local Geology:-

Geologically, the entire district can be classified into hard rock and sedimentary formations. Hard rock Formation: - More than 90 percent of the district is underlain by hard rock of Archaean age. The gneissic type of Formation is the major formation among the various types of hard rocks. Charnockite occurs in this district as pockets in Karur and Aravakurichi taluks. Quartzites which are resistant to weathering are also seen as patches in

Charnockite and gneissic varieties and the above rock types are shown in Figure 3.5. Sedimentary Formation: - Recent alluvial deposits such as sand, silt, clay, gravel etc. which are transported sediments by river are found on one side of Cauvery River in Karur, Kulithalai and Kulithalai blocks. These formations are overlying the hard rock.

2.3.3 Hydrogeology

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

Source: <https://karur.nic.in/departments/geology-mining/>

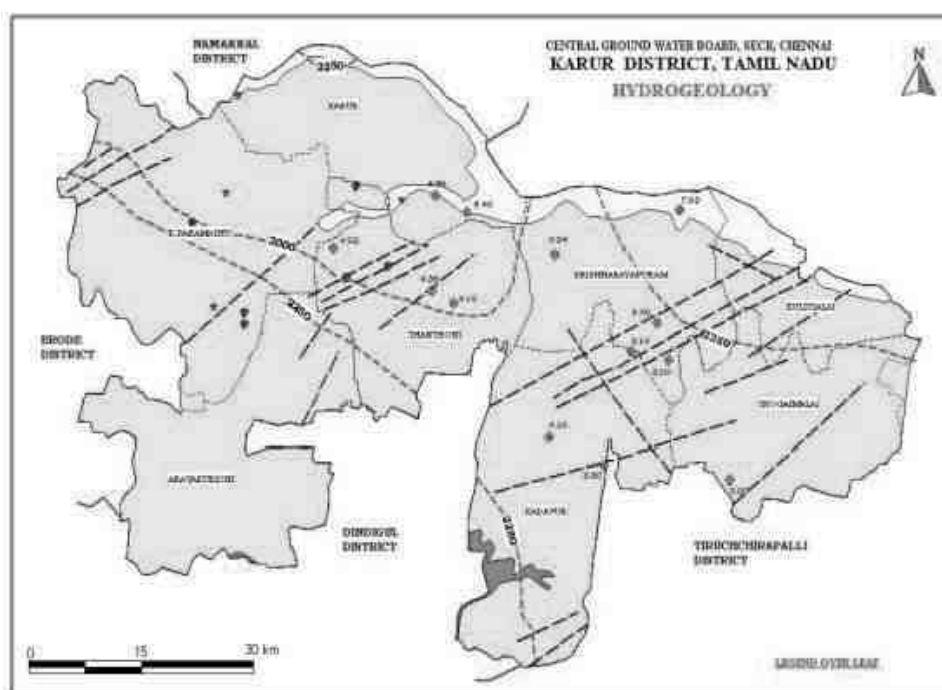


Figure 2.7: Regional Geology Map

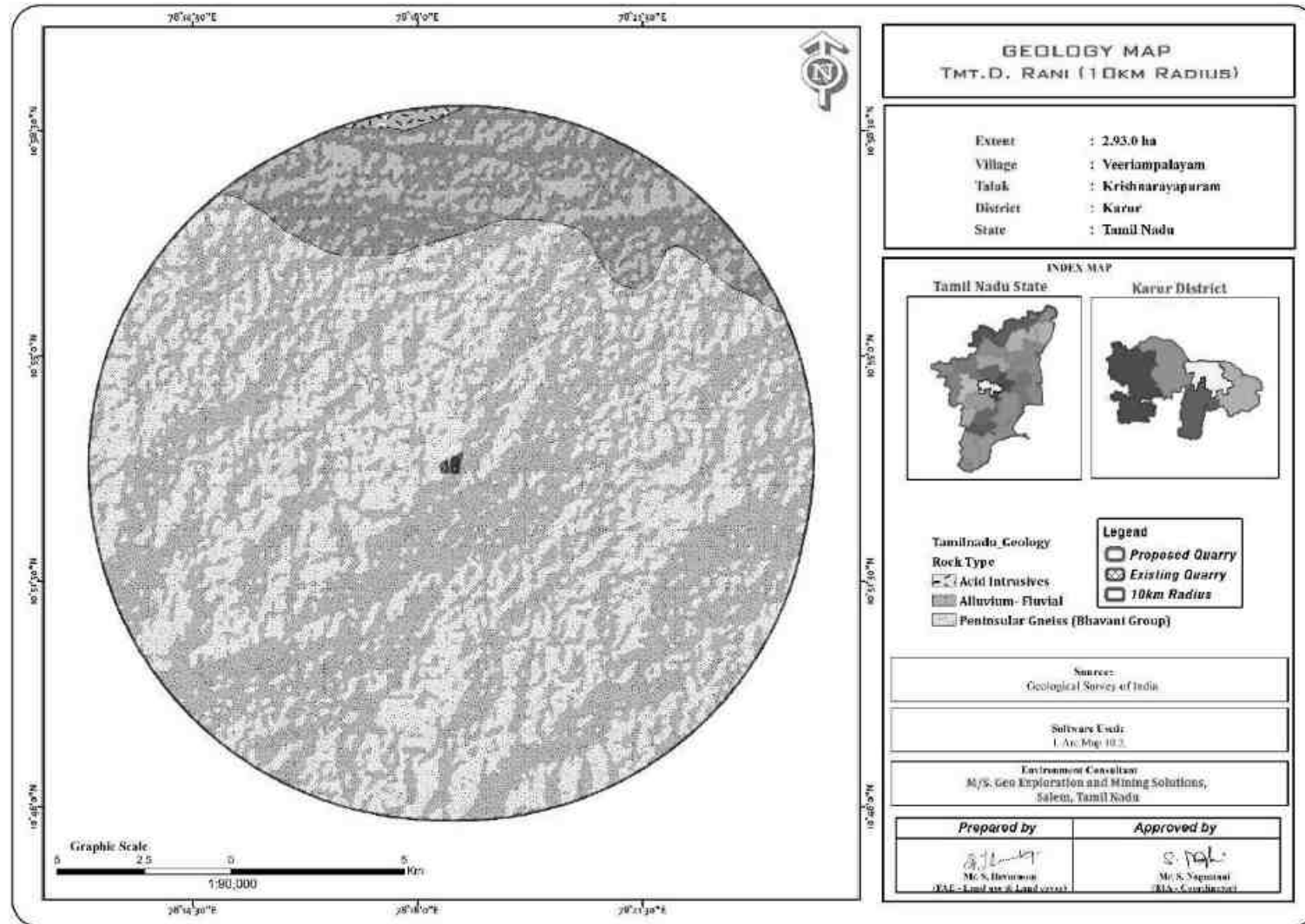


Figure 2.8: Geomorphology Map of The Study Area

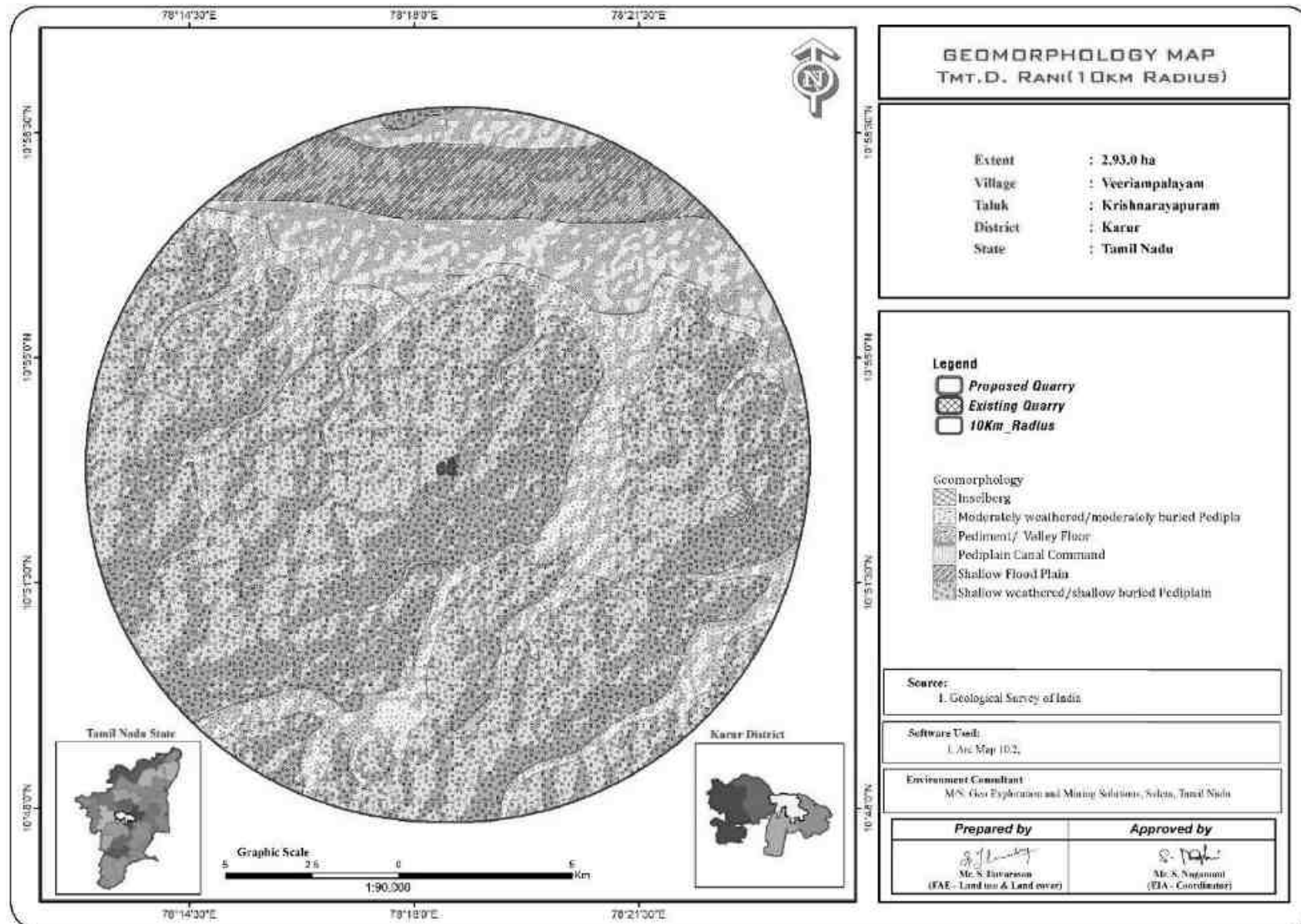
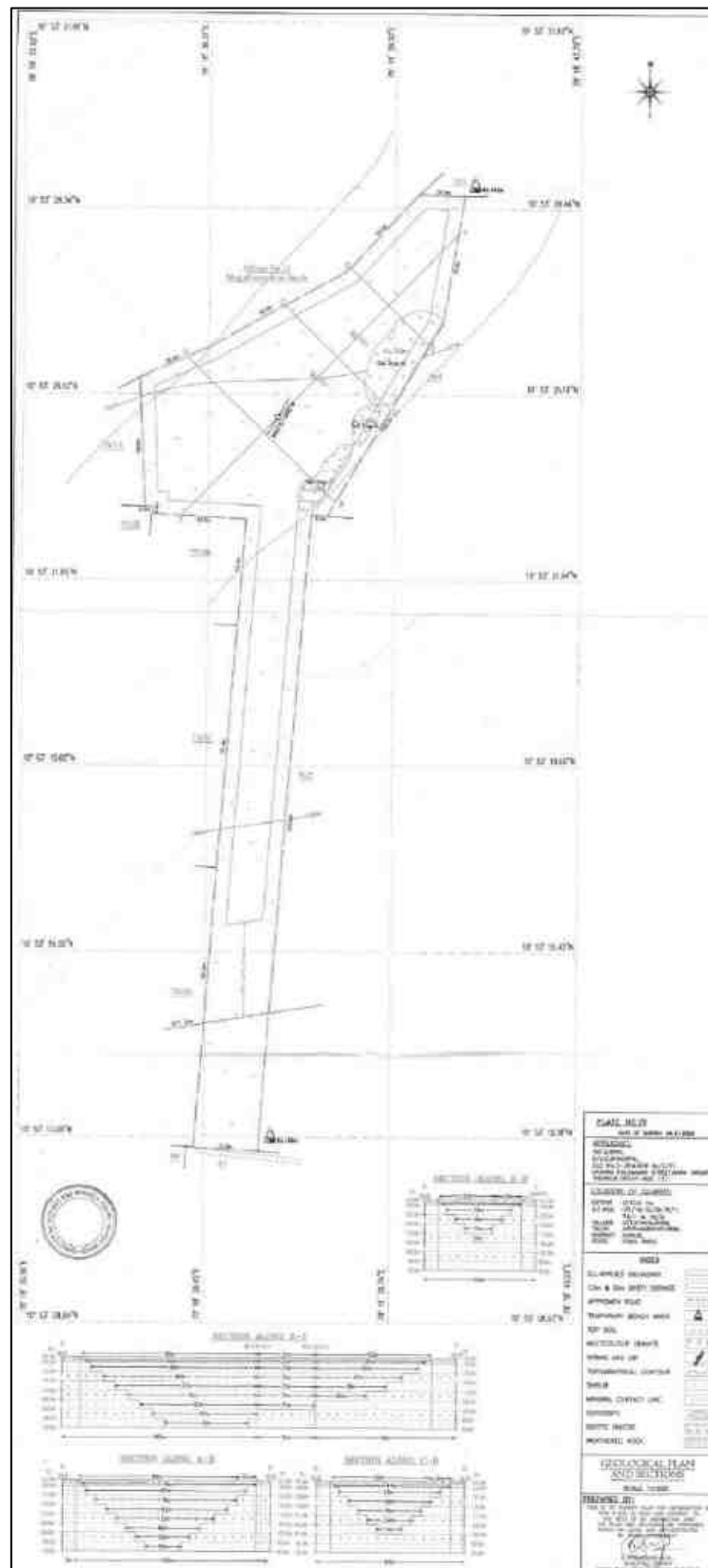


Figure 2.9: GEOLOGICAL PLAN AND SECTION

Source: Approved mining plan

Figure 2.10: Year-Wise Development Production Plan and Section

Source: Approved mining plan

2.4 Resources and Reserves

Multi Colour Granite is occurring beneath the surface, Granite outcrops are visible in some places within the project area.

Table 2.5 Resources, Reserves

Details	ROM (m ³)	Granite Recovery @ 40% (m ³)	Granite Waste @ 60% (m ³)	Side burden (m ³)	Weathered Rock (m ³)	Topsoil (m ³)
Geological Resources	6,13,900	2,45,560	3,68,340	44,100	42,715	15,617
Mineable Reserves	1,85,730	74,292	1,11,438	-	30,140	11,482

Source: Scheme of Approved mining plan

Table 2.6 Year wise Production for Five years plan

Year	ROM (m ³)	Recovery @ 40% (m ³)	Granite Waste @ 60% (m ³)	Weathered Rock (m ³)	Topsoil (m ³)
I	19,292	7,717	11,575	26,486	11,592
II	19,292	7,717	11,575	18,860	7,592
III	21,253	8,501	12,752	14,934	3,780
IV	19769	7908	11861	-	-
V	19504	7802	11702	-	-
Total	99,110	39,644	59,466	60,280	22,964

Source: Approved mining plan

Stacking of Granite Rejects and Disposal of Waste

Top soil:

There will be generation of topsoil is about 22,964m³ up to depth for 2m during this plan period, the same will be preserved all along the safety barrier and utilized for construction of bund and afforestation purpose.

Granite Waste:

Granite waste forms nearly 60% of ROM and the total quantity of granite waste in the five years will be around 22,440m³ (Granite waste 22,440m³ + Weathered rock 30,140m³) the same will be dumped on the Southern side with dimensions of (L)1216m X (W)19m X (H)12.8m.

Disposal:

As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places ear-marked for the purpose.

Conceptual Mining Plan/ Final Mine Closure Plan

Conceptual mining plan is prepared with an object of long-term systematic development of benches, lay outs, selection of permanent ultimate pit limit, depth of quarrying and ultimate pit, selection of sites for construction of infrastructure etc. The ultimate pit size is designed based on certain practical parameters such as economical depth of quarrying, safety zones, permissible area etc.,

Table 2.7 Ultimate Pit Dimension

Length in m	Width in m	Depth in m
189	96	38

Source: Approved mining plan

2.5 Method of Mining

- The method of mining is Opencast mechanized method
- Eco-friendly dimensional wire saw cutting for liberation and splitting up of blocks from parent sheet rocks
- Splitting of rock body of considerable volume from the parent rock formation by carefully avoiding visibly seen defects such as patches veins, etc., is done by adopting the method of “Diamond wire cutting” along the horizontal as well as two vertical sides on the front face of the formation.
- Jackhammer drilling with 32mm dia, this huge portion is further split into several blocks of required dimensions, only slurry explosives are used for secondary fragmentation and handling of waste.
- Hydraulic Excavator coupled with tippers is deployed for the formation of benches and loading
- There is no mineral processing or ore beneficiation proposed
- Proposed bench height is 5m and 5m width with 60° slope
- The waste material generated during quarrying activity includes rock fragments of different sizes, and waste chips during dressing of the blocks. The waste materials are taken in tippers and proposed to be dumped in the respective approved places ear-marked for the purpose and the same will be utilized for backfilling in the northern side of the lease area during conceptual stage.

2.5.1 Drilling

Drilling will be carried out as per parameters given below:-

Spacing - 1m, Burden - 0.8m, Depth of hole - 1.5m

2.5.2 Blasting

Blasting will be done as per details below: -

- (i) Controlled blasting parameter: -
- Spacing – 1m
 - Burden – 0.8 m
 - Depth of hole – 1.5 m
 - Charge per hole – 125 gms
 - Powder factor – 7.0 tonnes/kg
 - Dia of hole – 32 mm

Details of blasting design and parameters are discussed in approved mining plan.

2.5.3 Extent of Mechanization

Table 2.8: Machinery Details Proposed

Drilling Equipment's					
Type	No of Unit	Dia of Hole mm	Size capacity	Make	Motive Power
Jack Hammer	6	32	1.2m to 6m	Atlas Copco	Compressed air
Compressor	2	-	450/150psi	Atlas Copco	Diesel drive
Diamond Wire Saw	2	-	20m³/day	Optimo	Diesel Generator
Diesel Generator	1	-	125kva	Kirloskar	Diesel
Loading Equipment					
Type	No of Unit	Capacity	Make	Motive Power	
Crawler Crane	1	1055	Tata P & H	Diesel Drive	
Excavator	2	300	Tata Hitachi	Diesel Drive	
Haulage within the Mine & Transport Equipment					
Type	No of Unit	Capacity	Make	Motive Power	
Tipper	2	20 tonnes	Tata	Diesel Drive	
Water Sprinkler tanker	1	10,000 Litres	Tata	Diesel Drive	

Source: Scheme of 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.

2.6.2 Drainage Pattern

The project site is dendritic Drainage pattern. Since the entire area is hard rock formation

2.6.3 Traffic Density

The traffic survey conducted based on the transportation route of material, the MultiColour granite will be transported mainly through the Panchayat Road Vayalur located 440m South side of the area and Madhavanpuram Village road situated at a distance of 1.3Km west, this road again connecting in the Trichy – Karur State highway (SH 81) at a distance of 8Km.

Traffic density measurements were performed at Two locations

1. Vayalur Village road - 440m- South
2. Madhavanpuram – Pudupatti - 1.3 km- West

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.

Figure. 2.11: Mineral Transportation Route Map

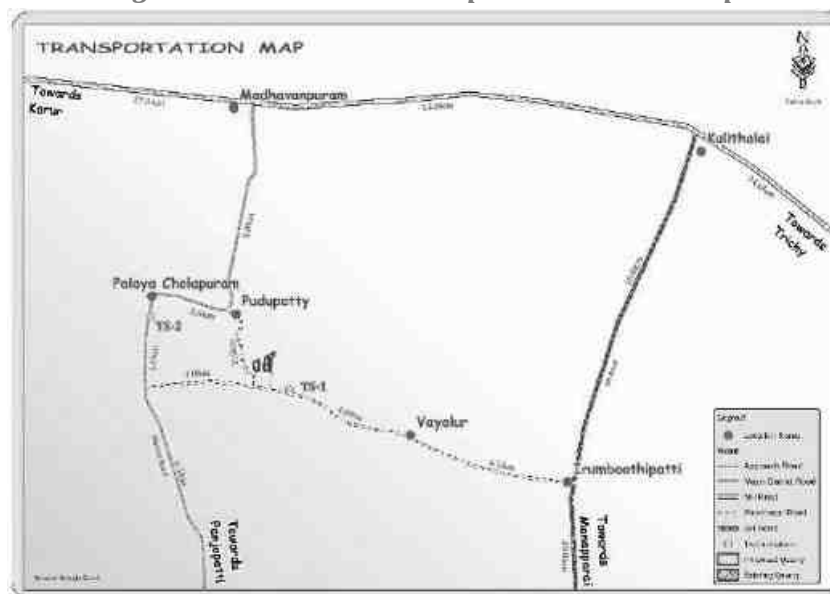


Table.2.9: Traffic Survey Locations

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Vayalur Village road	440m- South	Panchayat Road
TS2	Madhavanpuram - Pudupatti	1.3 km- West	Panchayat Road

Source: On-site monitoring by GEMS FAE & TM

Table 2.10: Existing Traffic Volume

Station Code	HMV		LMV		2/3 Wheelers		Total PCU
	Number	PCU	Number	PCU	Number	PCU	
TS1	30	90	80	80	120	60	230
TS2	80	240	120	120	180	90	450

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 2.11: Granite Hourly Transportation Requirement

Transportation of Granite per day			
Capacity of Trucks	No of trips per day	Volume in PCU	PCU considering 8 Hours
20Ts	1-2	6	6

Source: Data analysed from Approved Mining plan

Table 2.12: Summary of Traffic Volume

Route	Existing Traffic Volume in PCU	Incremental Traffic Due to the project in PCU	Total Traffic Volume in PCU	Hourly Capacity in PCU as per IRC - 1960
Vayalur Village road	230	6	236	1200
Madhavanpuram - Pudupatti	450	6	456	1200

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

Due to this project 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 this project

2.7 Project Requirement

2.7.1 Water Source & Requirement

Detail of water requirements in KLD as given below:

Table 2.13 Water Requirement for the Project

Purpose	Quantity	Source
Domestic & Drinking purpose	0.5 KLD	From Existing, bore wells and drinking water will be sourced from Approved Water vendors.
Dust Suppression	1. 0 KLD	From Existing bore wells from nearby area
Green Belt	1.0 KLD	From Existing bore wells from nearby area
Total	2.5 KLD	

Source: Prefeasibility report

2.7.2 Power and Other Infrastructure Requirement

The project does not require power supply for the mining operations. 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.

The temporary infrastructures such as Mine Office, First Aid Room, Rest Shelter etc., will be constructed within the project area before commencing the quarry operation. No workshops are proposed inside the project area hence there will not be any process effluent generation from the proposed lease 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

No raw material will be required for production of Multicolour granite quarry. The final product will be sent to consumer based on their demand. The mode of transportation of raw material and finished product will be by road. Tippers/ trucks will be used for transportation to the end users.

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

Per hour Excavator will consume	=	16 liters / hour
Per hour Excavator will excavate	=	10m ³
For 37,400m ³ (for this Scheme period)	=	37,400/10
Diesel consume 3,740 working hours	=	3,740 hours x 16 liters
	=	59,840 liters of HSD for this plan period

Source: Prefeasibility report

2.8 Employment Requirement:

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community.

Table 2.14: Employment Potential

S.No	Description	Numbers
Skilled Labour		
1	Mines Manager	1
	Geologist	1
	Mines Foreman	1
	Blaster/Mate	1
	Excavator operators	2
	Crane Operator	1
	Wire Saw Operator	2
	Tipper Driver	2
	Water Sprinkler Driver	1
	Jack- Hammer Drillers	18
	Security	1
	Helper	2
	Co-Operator and cleaner	8
	Total	41

Source: Approved mining plan

2.9 Project Implementation Schedule

The mining 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 2.15 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

Table 2.16 Capital Cost Estimation

S.No	Description	Cost
1	Project Cost	Rs.2,95,80,000/-

Source: Scheme of Approved mining plan

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 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 Oct 2025-Dec 2025 with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by **Global Lab and Consultancy Services, – An accredited by ISO/IEC 17025:2017 (NABL) Laboratory**, for the below attributes-

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 quarries area and buffer zone taken as 10km radius from the periphery of the Cluster quarries. Both Core zone and Buffer zone is taken as the study area.

Study Period

The baseline study was conducted during the **Post monsoon** i.e., Oct 2025-Dec 2025.

Study Methodology

- 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 project 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 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 (2 core & 4buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1 Hourly Continuous Mechanical/Automatic Weather Station	1	Site specific primary data & Secondary Data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive Dust	24 hourly twice a week (Oct-Dec 2025)	7 (3 core & 4 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7 (3 core & 4 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio-Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

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

* All monitoring and testing are 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 COVERS

To study the land use pattern of the core as well as a buffer zone, land use/land cover details have been identified/ maps have been prepared in accordance with the **Standard ToR**:

Point No. 1.4 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).

Point No. 1.10. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted.

Current vintage data of Indian Remote Sensing Satellite ResourceSat1 LISSIII (False Color Composite) has been used for Land Use / Land Cover study. Satellite image has been procured from National Remote Sensing Centre, Hyderabad.

3.1.2 OBJECTIVE

The objectives of the LULC study are as follow:

- ☞ To develop the Land use & Land cover map using land coordinates of the quarry area (Core Zone) and 10 km radius from the quarry site (Buffer area).
- ☞ To Identify and mark the important Land use and Land cover features using the primary and secondary data collected.
- ☞ To evaluate the impacts on existing land use/cover features of the buffer area by the Existing and Proposed Project activities.
- ☞ To identify the mitigative measures for the sustainable use of land and to protect the buffer zone from the adverse impacts.

Technical specification of Satellite imagery Data Used:

Current vintage data of Indian Remote Sensing Satellite RESOURCESAT1 (LISS-III) digital FCC (False Color Composite) has been used for preparation of Land use/ Land cover thematic map of study area. Satellite image has been procured from National Remote Sensing Centre, Hyderabad. Survey of India Toposheet as a reference map on 1:50,000 scale has been used for preparation of base layer data like road, rail network; village for geo-referencing of satellite image.

Satellite Image - Resourcesat1-LISSIII, 23.5m Resolution

Satellite Data Source - NRSC, Hyderabad

Satellite Vintage - 14th Sept 2022, Swath 141km wide.

SOI Toposheet No - 58J/05

Software Used - ArcGIS 10.8

The satellite image (FCC color 3,2,1) of the buffer zone is given in 3.1

The spatial resolution and the spectral bands in which the sensor collects the remotely sensed data are two important parameters for any land use survey. Resourcesat1-LISSIII, 23m Resolution of 23.5m and a 141 km wide swath of the earth in 23.5m resolution covering wide areas the data is collected in 4 visible bands namely band number and Resolution.

TABLE 3.2: Resourcesat1-LISSIII SENSOR characteristics

Band Number	Description	Wavelength	Resolution
Band 1	Green	0.52-0.59 μm	23.5 meters
Band 2	Red	0.62-0.68 μm	23.5meters
Band 3	NIR	0.77-0.86 μm	23.5meters
Band 4	SWIR	1.55-1.70 μm	70meters

Source: NRSC, Hyderabad

3.1.3 METHODOLOGY

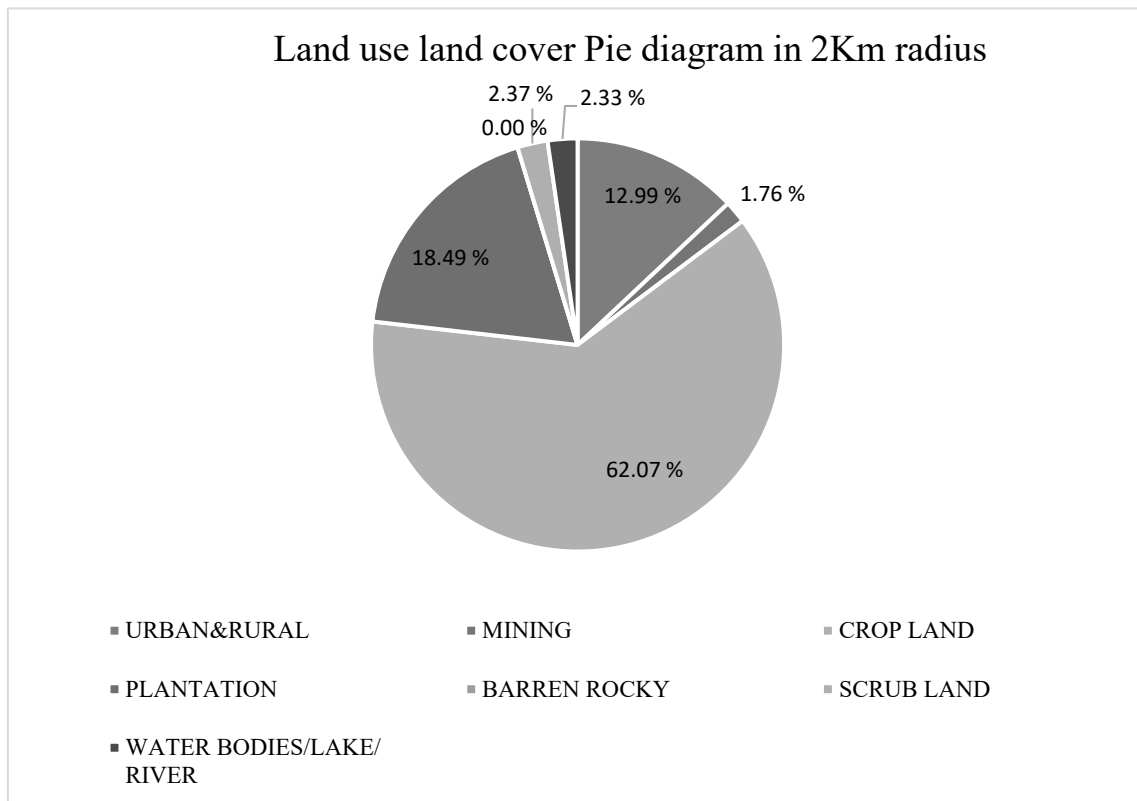
The land use / land cover map is prepared by adopting the interpretation techniques of the Satellite image in combination with collateral data such as Survey of India topographical maps. Image classification is done by using visual interpretation techniques and digital classification using any of the image processing software. The various activities for preparation of LULC include pre-processing, rectification, image enhancements and classifying the satellite data for assessing the change in land use land cover due to proposed developmental activities.

- ☞ Preliminary/primary data collection of the study area
- ☞ Satellite data procurement from NRSC
- ☞ Secondary data collection from authorized bodies
- ☞ Survey of India Toposheet (SOI)
- ☞ Mine Layout
- ☞ Cadastral / Village map
- ☞ GPS Coordinates of Lease Boundary
- ☞ Processing of satellite data using ArcGIS 10.8 and preparing the Land Use & Land cover maps (e.g. Mine area, Existing Quarries, Settlements, Agriculture land, Non agriculture land, water bodies, etc.) by Digital Image Processing (DIP) technique.
- ☞ Geo-Referencing of the Survey of India Toposheet
- ☞ Geo-Referencing of satellite Imagery with the help of Geo-Referenced Toposheets
- ☞ Enhancement of the Satellite Imagery
- ☞ Base Map layer creation (Roads, Railway, Village Names, and other Secondary data, etc.)
- ☞ Data analysis and Classification using Digital interpretation techniques.
- ☞ Ground truth studies or field Verification.
- ☞ Error fixing / Reclassification
- ☞ Final Map Generation.

TABLE: 3.3 LAND USE / LAND COVER DETAILS OF STUDY AREA 2KM RADIUS

S.No	CLASSIFICATION	AREA_HA	AREA_%
BUILTUP			
1	Urban	147.17	0.46
2	Rural	1972.69	6.11
3	Mining	156.43	0.48
AGRICULTURAL LAND			
4	Crop Land	22868.13	70.86
5	Agriculture Land	608.60	1.89
6	Fallow Land	1049.18	3.25
BARREN/WASTE LANDS			
7	Barren Rocky	43.58	0.14
8	Grazing Land	972.06	3.01
9	Scrub Land	3290.70	10.20
WETLANDS/ WATER BODIES			
10	Waterbodies	1162.09	3.60
TOTAL		32270.62	100.00

Source: Bhuvan, NRSC.

FIGURE 3.1: PIE DIAGRAM SHOWING LANDCOVER IN 2Km RADIUS

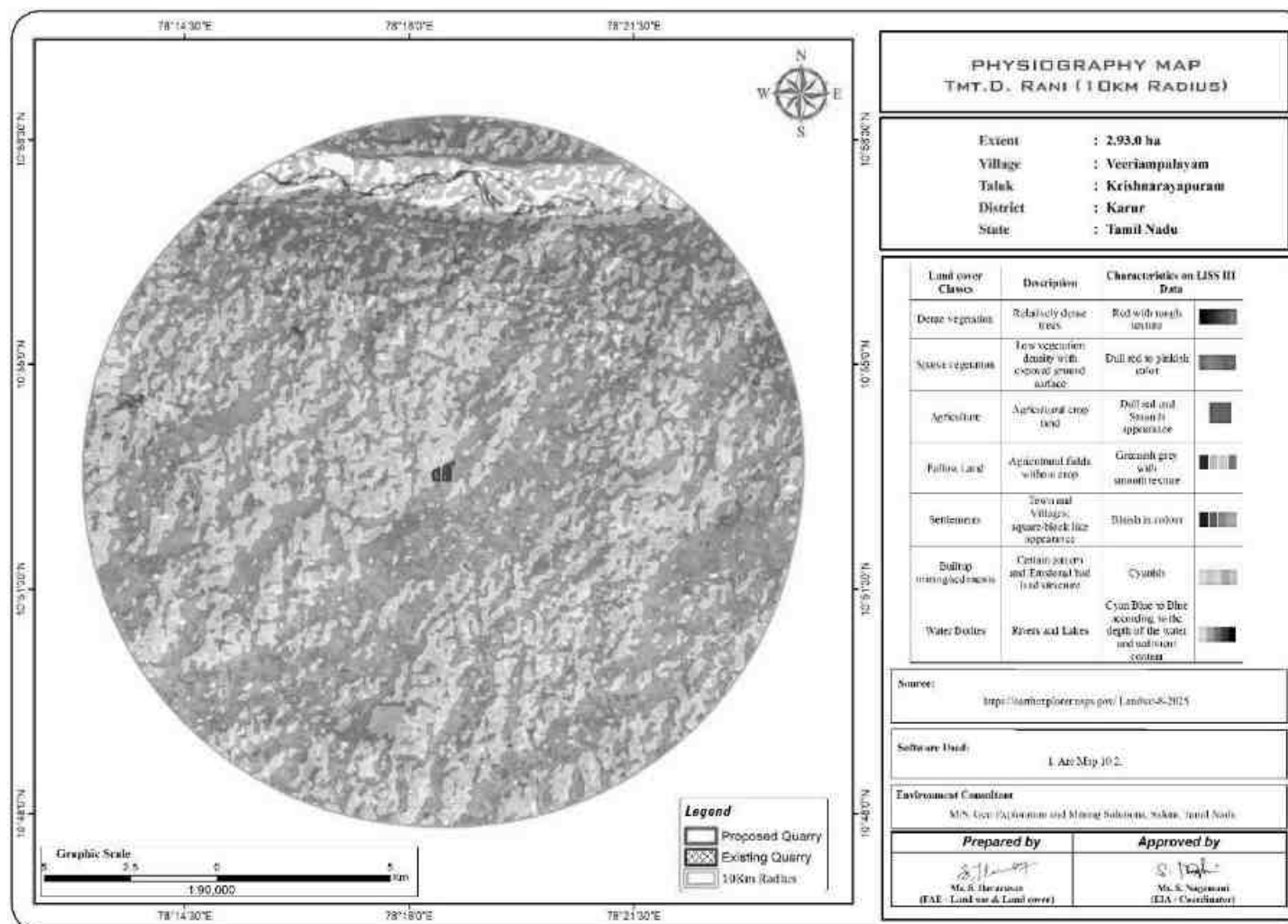


FIGURE 3.2: PHYSIOGRAPHY MAP OF THE STUDY AREA

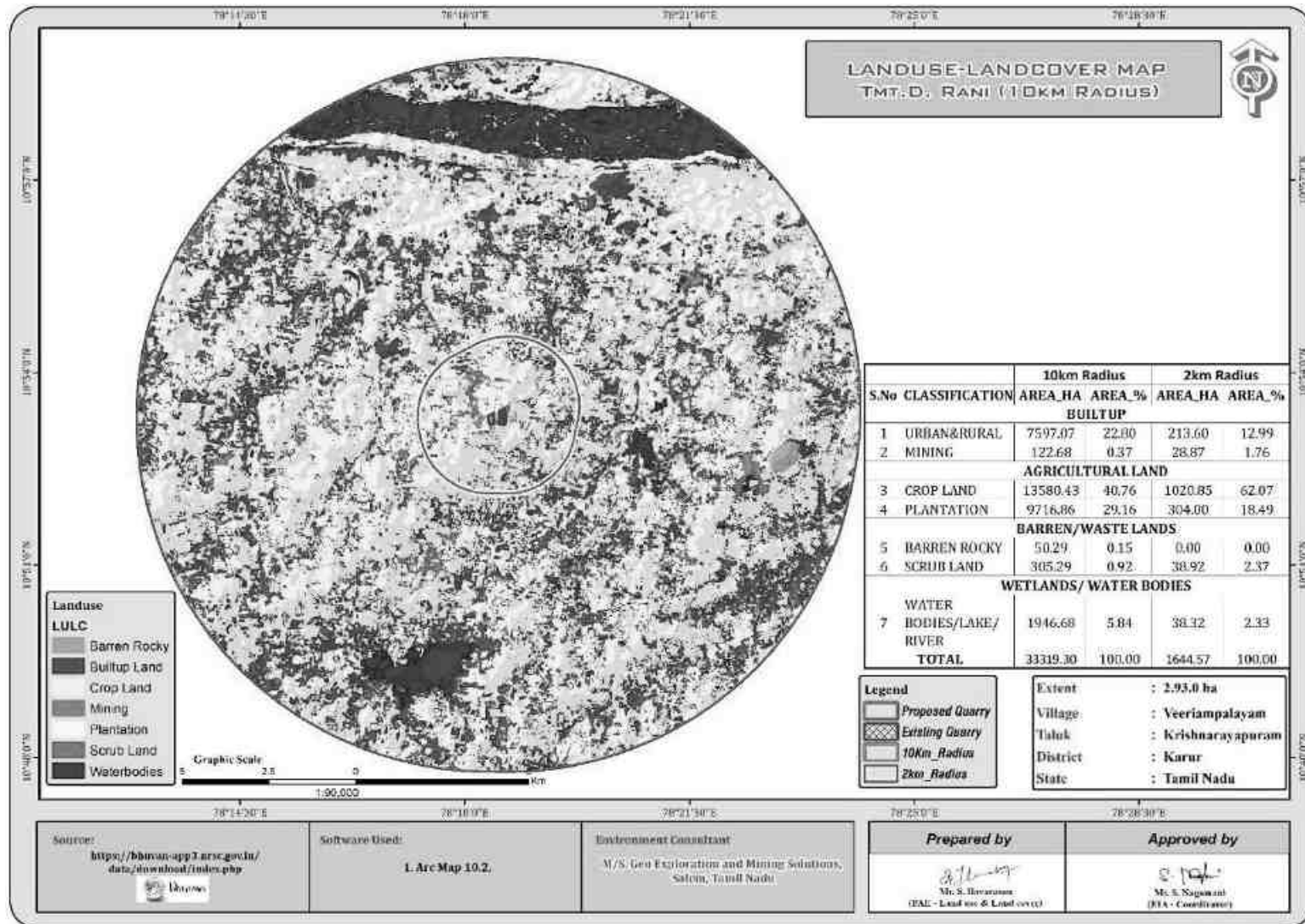


FIGURE 3.3: LAND USE LAND COVER MAP 10KM & 2KM RADIUS

3.1.4 Interpretation

- ⌘ Considering the intensity of the impact due to this particular proposal involving Eco Friendly Diamond wiresaw cutting the impact zone in the land use land cover is taken as 2km
- ⌘ The 2 km radius study area mainly comprises of crop land & Plantation land accounting of 62.07% & 18.49 % of the total study area.
- ⌘ Water Bodies such as ponds/ lakes comprises of 2.33 % of the core and buffer area. Such as Odai, Lake and Channel
- ⌘ The Scrub land accounts of 2.37%. As per the primary survey, it was observed the scrub land is mainly occupied by the stony waste and left-over domestic waste generated by the nearby areas.
- ⌘ 1.76 % of the total study area is occupied by the mine area and Solar panel units, Fly ash brick units & Small scale industries is situated within 5Km radius.
- ⌘ 12.99% of the area is covered under the human Settlement, Both rural and urban. The nearest village within the 3 km radius from the project site boundary is observed to be villages like Pudupatty, Veeriyapalayam, etc.,

3.1.4.1 Cropping Pattern of the Buffer Zone

The principal crops of the district are paddy, millets, pulses, oilseeds, sugarcane and banana. The major paddy area is in Kulithalai and Kulithalai taluks. Pulses are grown in rice fallow areas. In uplands millets like sorghum, pearl millet pulses such as red gram, horse gram oilseeds such as groundnut, gingelly and sunflower are grown both under irrigated and rain fed conditions.

Horticultural area of the Karur district was 16000.00 Ha. In general, Karur district has specifically known for Moringa and Banana cultivation and other prominent crops under cultivation are Tapioca, Gloriosa, Betelvine, Jasmine, Ixora, Coconut and other vegetable crops. Thanthoni, Aravakurichi, Kadavur and K. Paramathy were major vegetable growing region and Thogamalai, Kulithalai, Kulithalai were major Banana growing region and Karur block was major Coconut growing region. State Horticulture Farms was located on Mudalaipatti, Thogamalai block where Quality Planting materials are produced.

Source: <https://karur.nic.in/departments/department-of-horticulture-and-plantation-crops/>

3.1.5 TOPOGRAPHY

The area is situated undulated terrain, the general gradient is gentle towards East and altitude of the area is about 130m – 131m above from MSL.

The Multi Colour Granite is clearly visible right from the outcrops exposed upto 2m height with physical weathering and the area is covered by reddish soil to the thickness of 1m.

3.1.5.1 Drainage Pattern of the Area

The entire district forms part of Cauvery river basin. Cauvery is the major, and the only perennial river in the district. The northern branch of Cauvery, known as 'Coleroon' is mainly a flood carried, while the southern branch retains the name Cauvery. It has numerous tributaries draining the district, the prominent ones of which are Ayyar and Uppar in the north and Koraiyar in the south. Most of the rivers are structurally controlled. The drainage pattern, in general, is dendritic. Cauvery river is situated around 7Km North side and the general gradient of the drainage pattern is towards North.

3.1.5.2 Seismic Sensitivity

The proposed project site falls in the seismic Zone II (Least active), 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.

3.1.5.3 Environmental Features in the Study Area

Kadavur Slender Loris Sanctuary is situated 29km South west. There are no other Wildlife Sanctuaries, National Park and Archaeological monuments within 10Km radius. Lalpettai Reserved Forest area is involved in the study area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the cluster area i.e., 10km radius, are given in the below Table 3.3.

Table 3.3: Details of Environment Sensitivity around the Cluster

No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	Kadavur Slender Loris Santuary	29.0km-SW
2	Reserve Forest	Lalpettai R.F	6.8 Km – North
3	Lake/Reservoir	Pungar Stream	3km SE
		Panjapatty Lake	6.5km SW
		Canal	4.5km NW
		Cauvery River	7.3km North
4	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10KM Radius
5	Critically Polluted Areas	SIPCOT industrial estate – Manapparai	Around 31.0 km- SE
6	Mangroves	None	Nil within 10 km Radius
7	Mountains/Hills	None	Nil within 10 km Radius
8	Notified Archaeological Sites	None	Nil within 10 km Radius
9	Industries/ Thermal Power Plants	None	Nil within 10 km Radius
10	Defence Installation	None	Nil within 10 km Radius

Source: Survey of India Toposheet

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 3.4 and Figure 3.3.

Table 3.4: Soil Sampling Locations

S. No	Location Code	Monitoring Locations	Distance (km) and Direction	Coordinates
1	S-1	Core Zone	Project Area	10°53'20.46"N 78°18'37.89"E
2	S-2	Near Habitation	460m SW	10°53'0.66"N 78°18'22.01"E
3	S-3	Devasingampatti (Agriculture)	4.7km SE	10°51'21.25"N 78°20'24.25"E
4	S-4	Cholapuram (Residential)	4.2km NW	10°55'12.37"N 78°17'8.03"E

5	S-5	Palapatti (Agriculture)	4.0km NE	10°54'12.70"N 78°20'45.89"E
6	S-6	Pappayampadi (Residential)	4.8km SW	10°51'47.28"N 78°16'19.96"E

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

The objective of the soil sampling is -

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

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 3.5.

Table 3.5: 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”.

Figure 3.4: Soil Sampling Locations Around 10 Km Radius

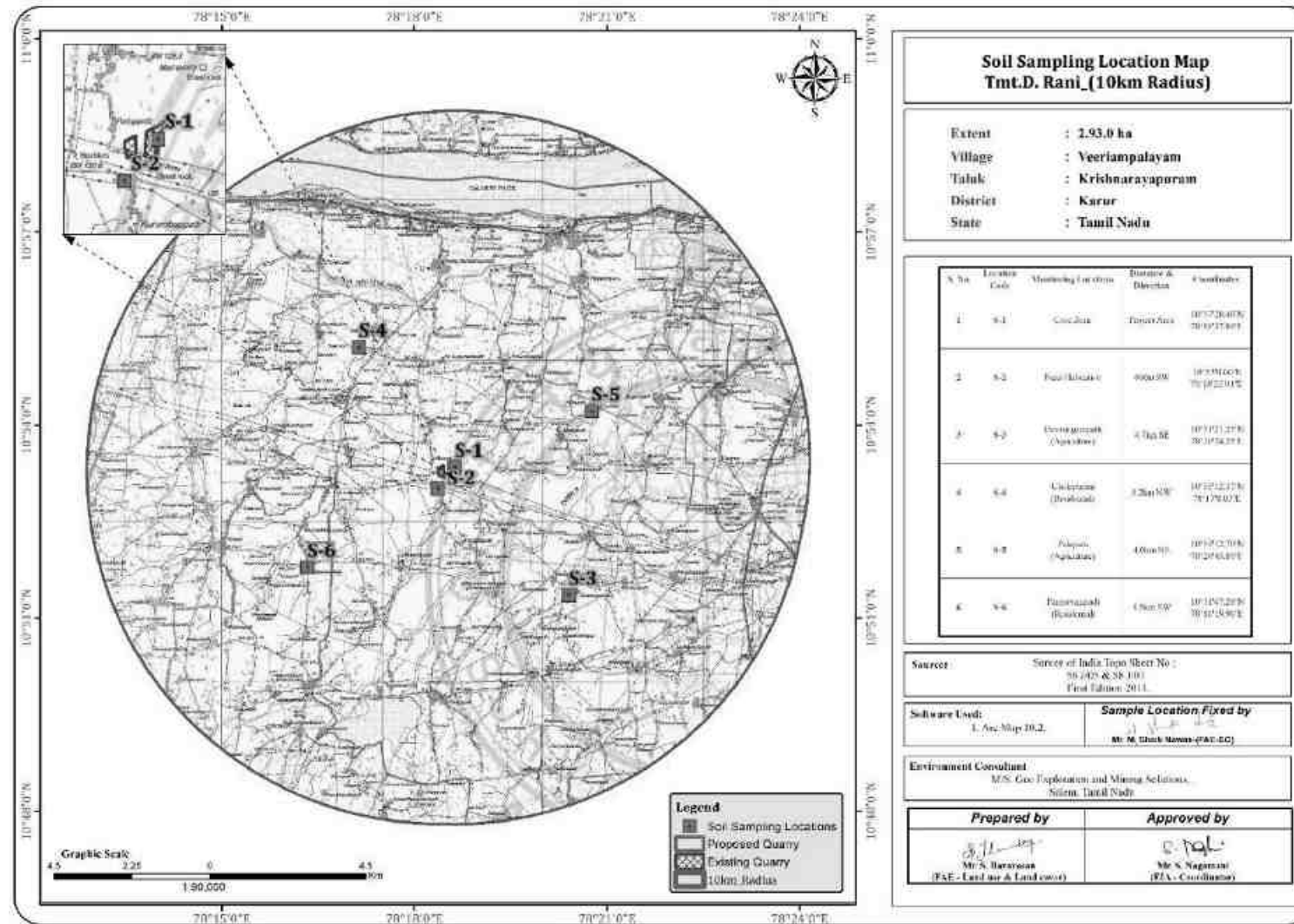


Figure 3.5: Soil Map

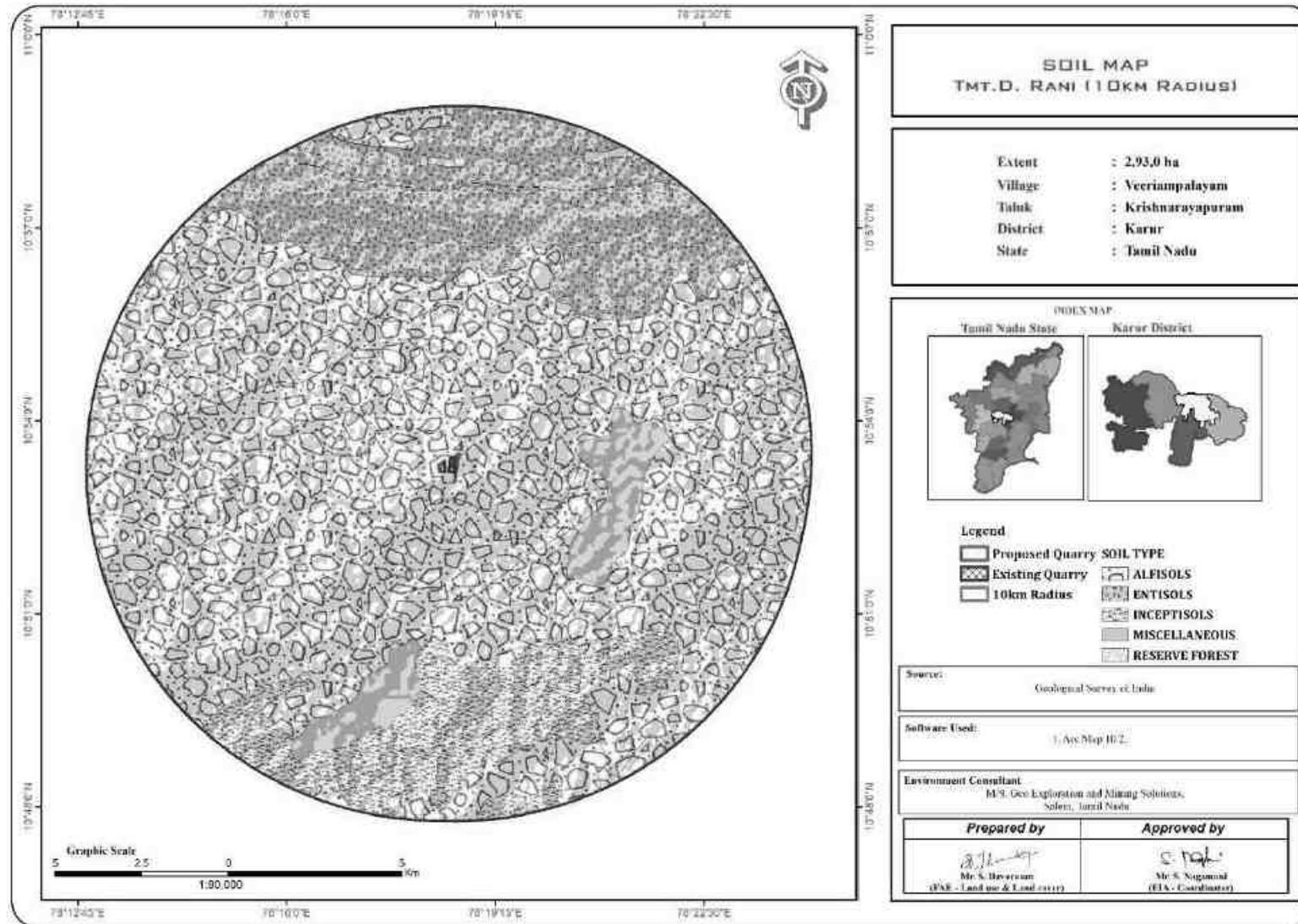


Table 3.6: Soil Quality of the Study Area

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	S-1 Core Zone	S-2 Near Habitation - 460m SW	S-3 Devasingampa tti (Agriculture)	S-4 Cholapuram (Residential)	S-5 Palapatti (Agriculture)	S-6 Kalladai
1	Available Nitrogen as N	GLCS/SOP/S/029;	Kg/ha	301.1	351.2	257.97	476.67	388.86	413.95
2	Available Phosphorous	GLCS/SOP/S/005;	mg/kg	11.7	12.9	13.4	14.1	12.0	11.7
3	Boron as B	USEPA Method 6010D: 2014	mg/kg	BDL (DL:0.5)	BDL (DL:0.5)	12.29	3.34	2.20	2.14
4	Bulk Density	GLCS/SOP/S/017;	g/cc	1.04	1.13	1.11	1.18	1.05	1.20
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	36.78	39.01	42.73	49.48	36.86	40.69
7	Chlorides (as Cl-) in Saturation Extract	GLCS/SOP/S/004	meq/l	2.7	2.5	3.2	3.8	3.2	2.0
8	Chromium	USEPA-6010D-2014	mg/kg	0.78	BDL (DL:0.5)	5.42	1.40	3.19	1.45
9	Copper	USEPA-6010D :2014	mg/kg	BDL (DL:0.5)	3.56	4.23	1.05	2.85	1.45
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	1.8	2.9	3.4	2.1	3.0	3.7
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	0.9	1.3	1.5	2.5	2.3	2.4
12	Iron	USEPA-6010 D-2014	mg/kg	180.3	3.27	187.54	21.05	45.12	2.84
13	Lead	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	2.34	6.88	5.42	1.35	3.59	3.44
15	Organic Carbon	GLCS/SOP/S/003	%	0.30	0.38	0.38	0.43	0.33	0.23
16	Organic Matter	GLCS/SOP/S/003	%	0.52	0.66	0.66	0.74	0.57	0.40
17	pH Value	IS 2720 (Part 26) 1987(Reaffirmed 2021)	-	8.10	7.84	7.90	7.69	7.56	8.04
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006;	mg/100g	1.32	1.34	1.18	1.06	1.20	1.14
19	Specific Electrical Conductivity	IS 14767: 2000 (Reaffirmed 2021)	µS/cm	413	548	503	355	396	388
20	Sulphate (as SO4)	GLCS/SOP/S/009	mg/100g	3.31	3.76	4.9	3.83	5.73	5.26
21	Texture : Clay	GLCS/SOP/S/015	%	25.62	32.19	23.18	25.62	25.62	23.18
22	Texture : Sand	GLCS/SOP/S/015	%	35.32	29.16	35.31	32.82	32.62	35.31
23	Texture : Silt	GLCS/SOP/S/015	%	39.06	38.65	41.51	41.56	41.56	41.51
24	Water Holding Capacity	GLCS/SOP/S/016	%	51.60	50.60	49.60	52.60	53.6	54.40

25	Zinc	USEPA-6010D-2014	mg/kg	BDL (DL:05)	10.1	8.66	2.24	2.75	4.09

Source: Sampling Results by Global Lab and Consultancy Services Private Limited.

FIGURE 3.7: SOIL SAMPLING COLLECTIONS

Interpretation & Conclusion

The physical properties of the soil samples were examined for texture, bulk density and water holding capacity. The soil texture found in the study area is Clay Loam Soil and Bulk Density of Soils in the study area varied between 1.04 to 1.18 g/cc. The Water Holding Capacity between 49.60 %- 54.40 %.

- The nature of soil is slightly alkaline to Moderately alkaline with pH range 7.56 to 8.10
- The available Nitrogen content range between 257.97 to 476.67 kg/ha it represents Moderate nitrogen supply; supports general crop growth.
- The available Phosphorus content range between 11.7 to 14.7 mg/kg indicates the content of Phosphorous in range as medium to moderately available.
- The available Potassium range between 1.14 to 1.34 mg/100g denotes the potassium is moderately available to the plants in the region
- Whereas, the micronutrient as zinc (Zn) and iron (Fe) were found in the range of 14.97 to 23.74 mg/kg; 09.87to 40.43mg/kg.

The soil is moderately fertile with medium availability of N, P, and K, and slightly to moderately alkaline pH. It supports general crop growth with targeted nutrient management. Monitor and apply fertilizers as needed for optimal yields.

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:

The study area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. 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 freshwater for couple of months after rainy season.

Table 3.7: Water Bodies in the Buffer Zone

Sl.No.	Water Bodies	Distance
1	Pungar Stream	3km SE
2	Panjapatty Lake	6.5km SW
3	Canal	4.5km NW
4	Cauvery River	7.3km North

Source: Survey of India Toposheet

3.2.3 Methodology

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

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

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

Table 3.8: Water Sampling Locations

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	SW-1	Panjapatty Lake	6.5km SW	10°49'43.65"N 78°17'56.30"E
2	SW-2	Cauvery River	7.5km NE	10°57'19.65"N 78°19'39.03"E
3	OW-1	Near Project Area	300m East	10°53'15.67"N 78°18'47.85"E
4	OW-2	Cholapuram	4.2km NW	10°55'8.78"N 78°17'8.06"E
5	BW-1	Near Project Area	350m East	10°53'23.19"N 78°18'52.60"E
6	BW-2	Devasingampatti	4.7km SE	10°51'20.61"N 78°20'23.64"E

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

FIGURE 3.9: PHOTOGRAPHS OF WATER SAMPLING COLLECTIONS

Figure 3.6: Water Sampling Locations Around 10 Km Radius

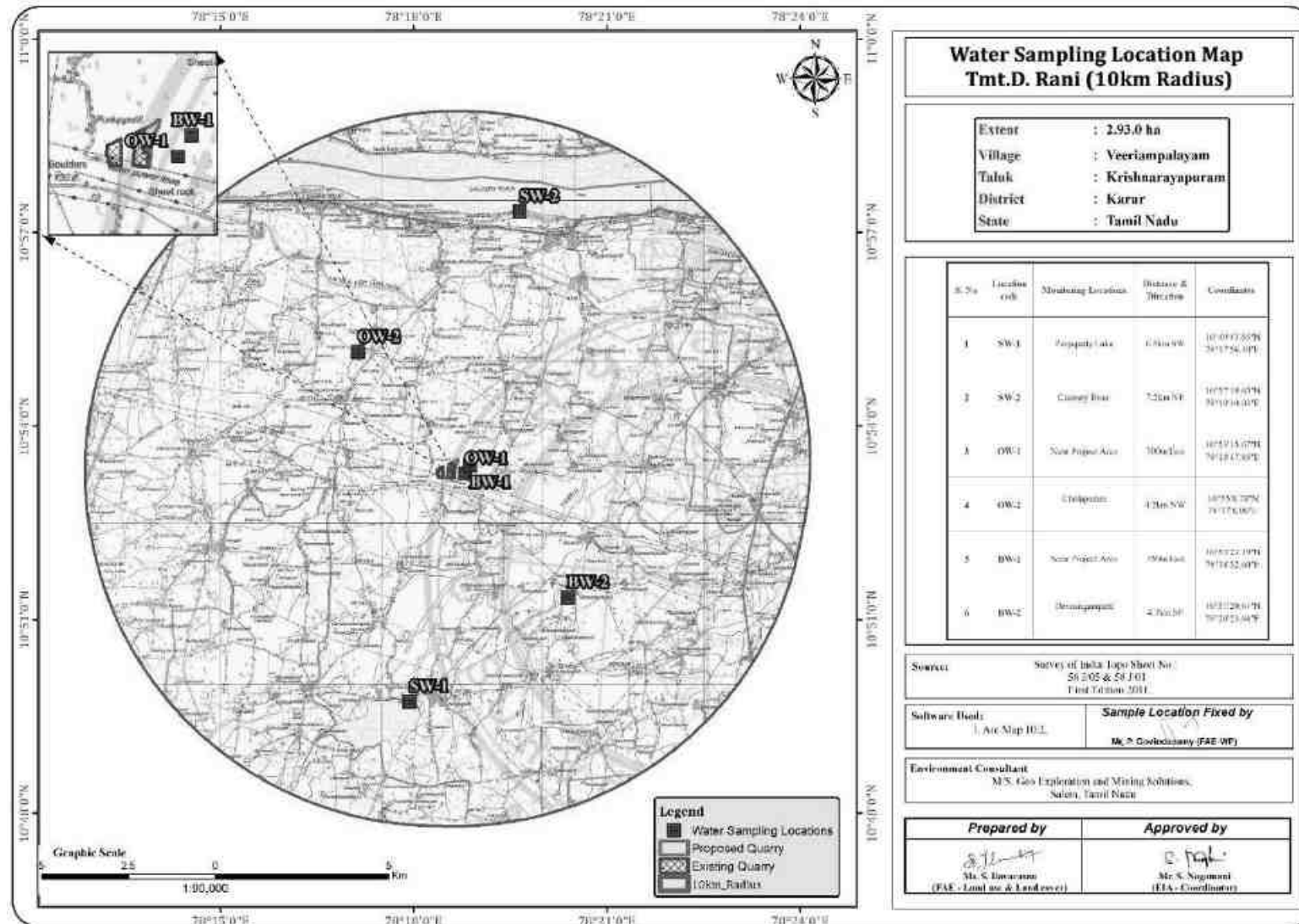


Table 3.9: Ground Water Sampling Results

S.No	Parameters	Units	WW 1 Near Project Area	WW2 Cholapuram	BW-1 Near Project Area	BW-2 Devasingampatti	Acceptable limit	Permissible limit
1	Aluminium	mg /l	0.013	0.012	BDL (DL: 0.01)	0.013	0.03	0.2
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)	0.5	No Relaxation
3	Arsenic as As	mg /l	BDL (DL: 0.002)	BDL (DL: 0.002)	BDL (DL: 0.002)	BDL (DL: 0.002)	0.01	0.05
4	Barium as Ba	mg /l	0.045	0.069	0.020	0.081	0.7	No Relaxation
5	Boron as B	mg /l	BDL (DL: 0.01)	0.024	0.024	0.386	0.5	1.0
6	Cadmium as Cd	mg /l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.003	No Relaxation
7	Calcium as Ca	mg /l	56.1	48.1	75.4	83.4	75	200
8	Chloride as Cl-	mg/l	124.0	138.0	167.9	171.9	250	1000
9	Chromium as Cr	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.05	No Relaxation
10	Color	CU	<1	<1	<1	<1	5	15
11	Copper as Cu	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.05	1.5
12	Cyanide as CN	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.05	No Relaxation
13	Electrical Conductivity (EC)	µS/cm	763	840	1190	1102	2000	2000
14	Fluoride as F-	mg/l	0.12	BDL (DL: 0.1)	0.19	0.20	1.0	1.5
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)	0.2	1
16	Iron as Fe	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.3	No Relaxation
17	Lead as Pb	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.01	No Relaxation
18	Magnesium as Mg	mg/l	22.4	17.5	30.2	21.4	30	100
19	Manganese as Mn	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.1	0.3
20	Mercury as Hg	mg/l	BDL (DL: 0.002)	BDL (DL: 0.002)	BDL (DL: 0.002)	BDL (DL: 0.002)	0.001	No Relaxation
21	Molybdenum as Mo	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.07	No Relaxation
22	Nitrate as NO ₃	mg/l	2.2	2.1	3.5	3.1	45	No Relaxation
23	Odor	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
24	pH	-	7.12	7.35	6.96	7.41	6.5-8.5	No Relaxation
25	Phenols	mg/l	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	0.001	0.002
26	Selenium as Se	mg/l	BDL (DL: 0.005)	BDL (DL: 0.005)	BDL (DL: 0.005)	BDL (DL: 0.005)	0.01	No Relaxation
27	Sulphate as SO ₄	mg/l	23.5	24.1	28.9	28.9	200	400
28	Sulphide as S (Iodometric Method)	mg/l	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	0.05	No Relaxation
29	Total Alkalinity as CaCO ₃	mg/l	141.4	206.0	278.8	282.8	200	600

30	Total Dissolved Solids (TDS)	mg/l	462	492	697	649	500	2000
31	Total Hardness as CaCO ₃	mg/l	232.0	192.0	312.0	296.0	200	600
32	Total Suspended Solids (TSS)	mg/l	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	500	2000
33	Turbidity	NTU	<1	<1	<1	<1	1	5
34	Zinc as Zn	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	BDL (DL: 0.01)	0.021	5	15
35	Escherichia coli	MPN/ 100ml	Absent	Absent	Absent	Absent	Shall not be detectable in any 100 ml	-
36	Total Coliforms		Present	Present	Present	Present		-

Source: Sampling Results by Global Lab and Consultancy Services ,

Table 3.10: Surface Water Sampling Results

S.No	Parameters	Units	SW-1 Panjapatty Lake	SW-2 Cauvery River	Acceptable limit	Permissible limit
1	Aluminium	mg /l	0.032	0.038	0.03	0.2
2	Ammoniacal Nitrogen as NH ₃ -N	mg /l	1.60	BDL (DL: 1.0)	0.5	No Relaxation
3	Arsenic as As	mg /l	BDL (DL: 0.002)	BDL (DL: 0.002)	0.01	0.05
4	Barium as Ba	mg /l	0.082	0.032	0.7	No Relaxation
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	mg /l	9.6	14.4	30	30
6	Boron as B	mg /l	0.391	0.067	0.5	1.0
7	Cadmium as Cd	mg /l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.003	No Relaxation
8	Calcium as Ca	mg /l	67.3	81.8	75	200
9	Chemical Oxygen Demand (COD)	mg /l	30.0	40.0	250	250
10	Chloride as Cl-	mg/l	142.0	161.9	250	1000
11	Chromium as Cr	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.05	No Relaxation
12	Color	CU	5	7	5	15
13	Copper as Cu	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.05	1.5
14	Cyanide as CN	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.05	No Relaxation
15	Dissolved Oxygen (DO)	mg/l	4.8	4.4	4-6	4-6
16	Electrical Conductivity (EC)	µS/cm	947	1074	2000	2000
17	Fluoride as F-	mg/l	BDL (DL: 0.1)	BDL (DL: 0.1)	1.0	1.5
18	Free Residual Chlorine as Cl ₂	mg/l	BDL (DL: 1.0)	BDL (DL: 1.0)	0.2	1
19	Iron as Fe	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.3	No Relaxation
20	Lead as Pb	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.01	No Relaxation
21	Magnesium as Mg	mg/l	25.3	24.32	30	100
22	Manganese as Mn	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.1	0.3
23	Mercury as Hg	mg/l	BDL (DL: 0.002)	BDL (DL: 0.002)	0.001	No Relaxation
24	Molybdenum as Mo	mg/l	BDL (DL: 0.01)	BDL (DL: 0.01)	0.07	No Relaxation
25	Nitrate as NO ₃	mg/l	4.0	3.7	45	No Relaxation
26	Odor	-	Agreeable	Agreeable	Agreeable	Agreeable
27	pH	-	7.46	7.64	6.5-8.5	No Relaxation
28	Phenols	mg/l	BDL (DL: 0.1)	BDL (DL: 0.1)	0.001	0.002
29	Selenium as Se	mg/l	BDL (DL: 0.005)	BDL (DL: 0.005)	0.01	No Relaxation
30	Sulphate as SO ₄	mg/l	21.9	30.0	200	400
31	Sulphide as S (Iodometric Method)	mg/l	BDL (DL: 1.0)	BDL (DL: 1.0)	0.05	No Relaxation
32	Total Alkalinity as CaCO ₃	mg/l	238.4	274.7	200	600
33	Total Dissolved Solids (TDS)	mg/l	547	630	500	2000
34	Total Hardness as CaCO ₃	mg/l	272.0	304.0	200	600
35	Total Suspended Solids (TSS)	mg/l	5.0	7.0	500	2000
36	Turbidity	NTU	4.0	4.6	1	5

37	Zinc as Zn	mg/l	0.015	BDL (DL: 0.01)	5	15
38	Escherichia coli	per 100ml	Absent	Absent	Shall not be detectable in any100 ml	-
39	Total Coliforms		Present	Present		-

3.2.4 Interpretation & Conclusion

Surface Water

Ph:

The pH varied from 7.46 to 7.64 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH).

Total Dissolved Solids:

Total Dissolved Solids varied from 547 to 630 mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

Other parameters:

Chloride varied between 142.0 mg/l- 161.9mg/l. Nitrates varied from 3.7 mg/l- 4.0mg/l while sulphates varied from 21.9mg/l to 30.0mg/l.

Ground Water

The pH of the water samples collected ranged from and within the acceptable limit of 6.96 to 7.41. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 462 to 697mg/l in all samples. Total hardness varied between 192-312mg/l.

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 85m. The maximum depth proposed out of proposed projects is 38m BGL for the entire period. 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.

3.2.6 Ground Water Resources:

Karur district is underlain entirely by Archaean Crystalline formations with Recent alluvial deposits occurring along the river and streams courses and colluvium of valley-fills. The important aquifer systems in the district are constituted by weathered, fissured and fractured crystalline rocks and the recent alluvial deposits. Ground water occurs under phreatic conditions. The maximum saturated thickness of these aquifers is up to 5 m depending upon the topographic conditions. The study area falls in the Karur which is categorized as Safe (< 70%) as per G.O (MS) No 113 dated 09.06.2016.

There are Seven open wells within the radius of 1km Most of the wells are almost in dry conditions: - The details of the well and depth in Post monsoon is described below:

Table 3.11: Details of Borewell & Water Level in 1km Radius

S.No	Label	Longitude	Latitude	Oct 2025	Nov 2025	Dec 2025
1	BW1	78° 18' 52.4943" E	10° 53' 23.0871" N	60.8	61.4	61.9
2	BW2	78° 18' 11.5538" E	10° 53' 27.2016" N	61.2	61.8	62.3

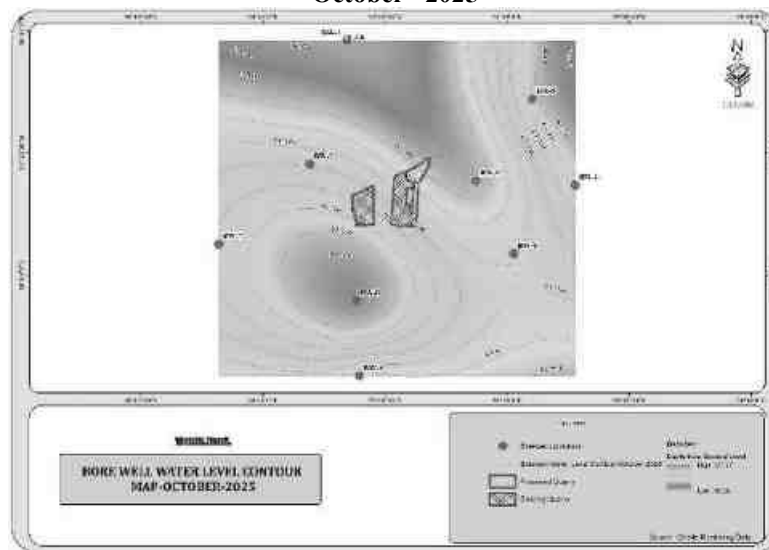
3	BW3	78° 18' 20.7042" E	10° 53' 57.5732" N	60.5	61.1	61.6
4	BW4	78° 19' 01.7692" E	10° 53' 05.2145" N	61.1	61.7	62.2
5	BW5	78° 19' 06.2793" E	10° 53' 43.2716" N	61.5	62.1	62.6
6	BW6	78° 19' 16.8356" E	10° 53' 22.0273" N	61.4	62	62.5
7	BW7	78° 17' 49.2343" E	10° 53' 07.5656" N	61.3	61.9	62.4
8	BW8	78° 18' 22.9574" E	10° 52' 53.6488" N	61.7	62.3	62.8
9	BW9	78° 18' 23.7817" E	10° 52' 35.1493" N	60.9	61.5	62

Source: Data obtained by the FAE & Team Members

Table 3.12: Details of Open well & Water Level in 1km Radius

S.No	Label	Longitude	Latitude	Oct 2025	Nov 2025	Dec 2025
1	OW-1	78° 18' 47.8039" E	10° 53' 15.4634" N	13	13.6	14.2
2	OW-2	78° 18' 07.1524" E	10° 53' 21.0173" N	13.6	14.2	14.8
3	OW-3	78° 18' 33.5656" E	10° 52' 55.9536" N	12.9	13.5	14.1
4	OW-4	78° 19' 08.7515" E	10° 52' 58.7010" N	12.7	13.3	13.9
5	OW-5	78° 18' 26.9390" E	10° 52' 35.3396" N	13.3	13.9	14.5
6	OW-6	78° 17' 57.2823" E	10° 52' 54.5290" N	13.5	14.1	14.7
7	OW-7	78° 18' 26.4144" E	10° 54' 05.2251" N	12.6	13.2	13.8
8	OW-8	78° 17' 50.9202" E	10° 53' 21.3059" N	13.1	13.7	14.3
9	OW-9	78° 18' 08.3210" E	10° 53' 44.0315" N	13.5	14.1	14.7
10	OW-10	78° 19' 00.1186" E	10° 53' 30.2714" N	13.3	13.9	14.5

Figure 3.7: Post Monsoon Water Level of Bore Well 1 Km Radius
October– 2025



November – 2025



December -2025



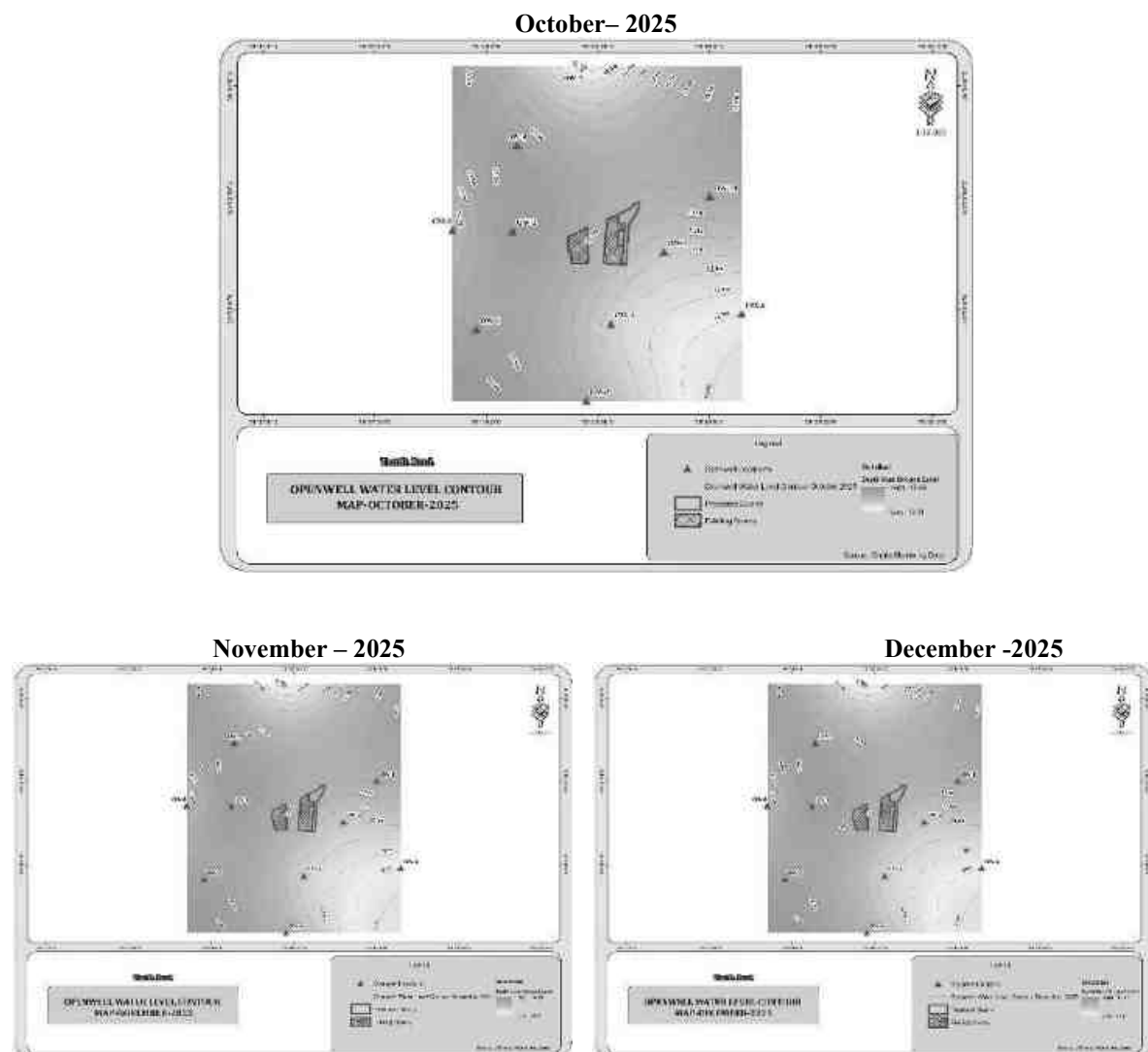
Figure 3.8: Post Monsoon Water Level of Open Well 1 Km Radius

Figure 3.9: Drainage Map Around 10 Km Radius from Project Site

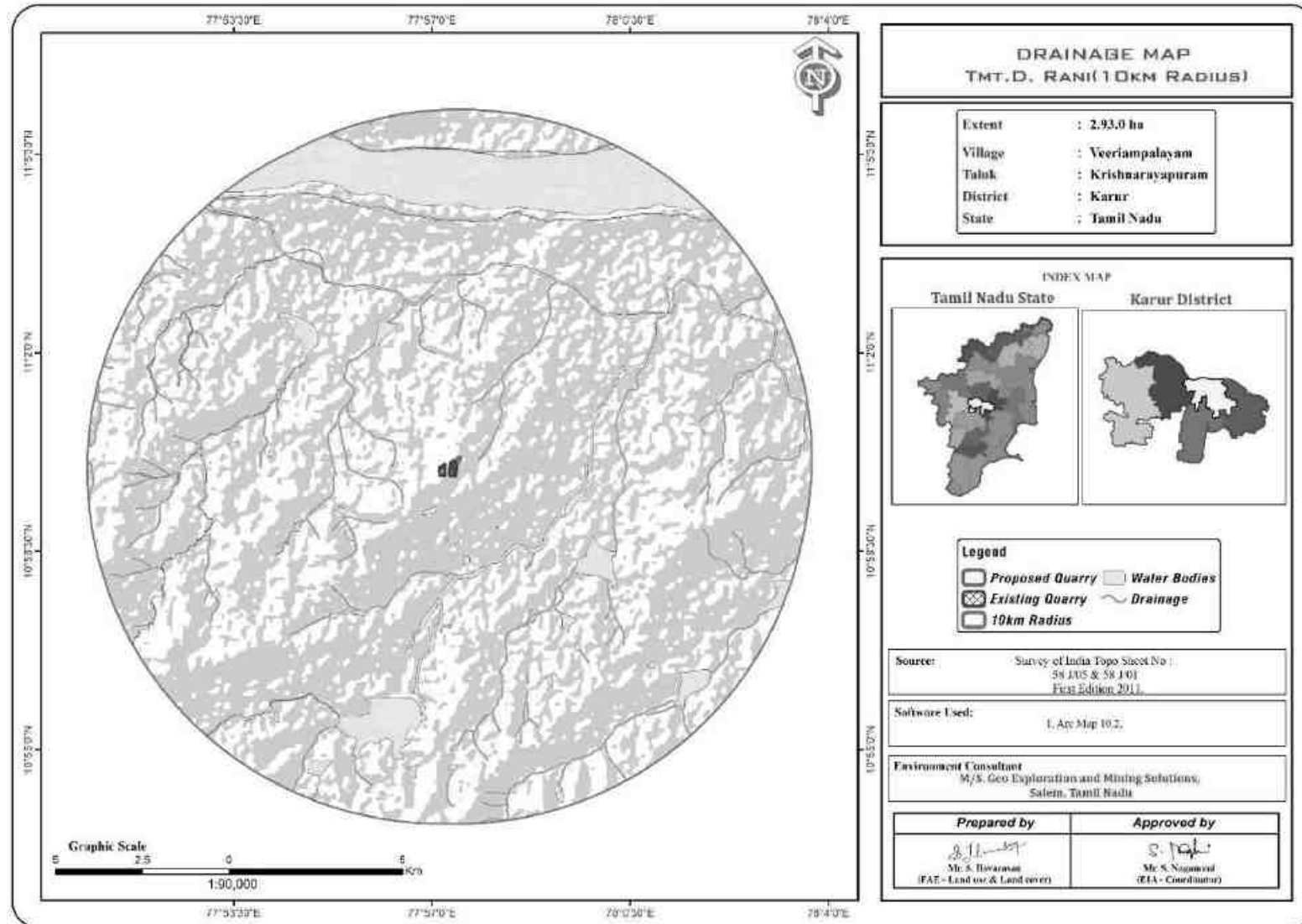
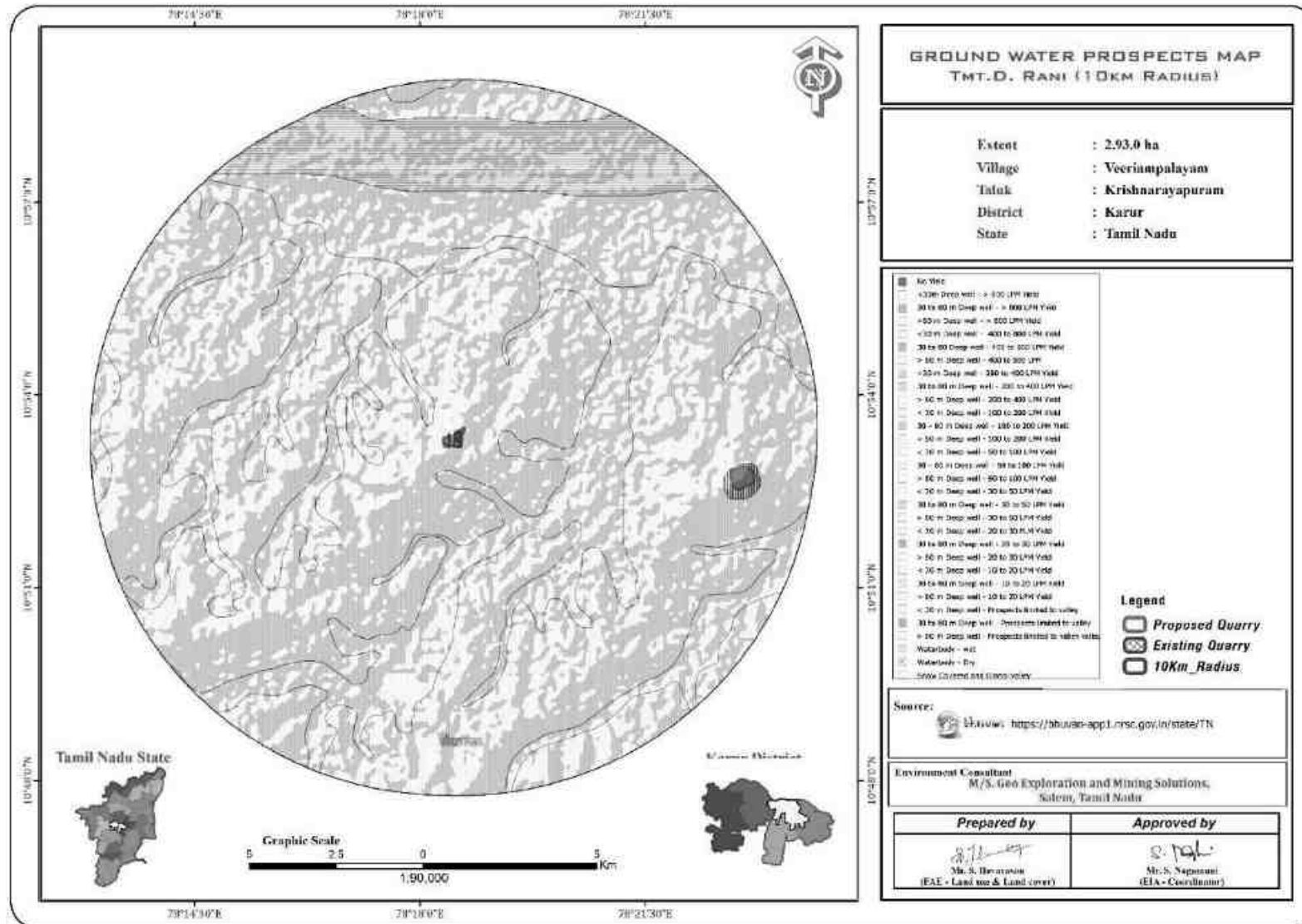


Figure 3.10: Ground Water Prospect Map



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:

Climate-

The climatic conditions of Karur are tropical in nature. In winter, there is much less rainfall than in summer. According to Köppen and Geiger, this climate is classified as Aw. The average temperature in Karur is 28.2 °C | 82.7 °F. Approximately 724 mm | 28.5 inch of rainfall occurs on a yearly basis.

Karur experiences a moderate climate, and the summers are not easy to define. The best time to visit is January, February, October, November, December.

The month characterized by the lowest precipitation levels is January, exhibiting a mere 8 mm | 0.3 inch of rainfall. Most precipitation falls in October, with an average of 168 mm | 6.6 inch.

On average, the month of April experiences the highest temperature with an average value of 31.5 °C | 88.7 °F. In December, the average temperature is 24.9 °C | 76.7 °F. It is the lowest average temperature of the whole year.

<https://en.climate-data.org/asia/india/tamil-nadu/karur-24030/>

Rainfall

Table 3.13: Rainfall Data

Actual Rainfall in mm					Normal Rainfall in mm
2017	2018	2019	2020	2021	
715.3	468.4	524.5	684.2	919.8	628.9

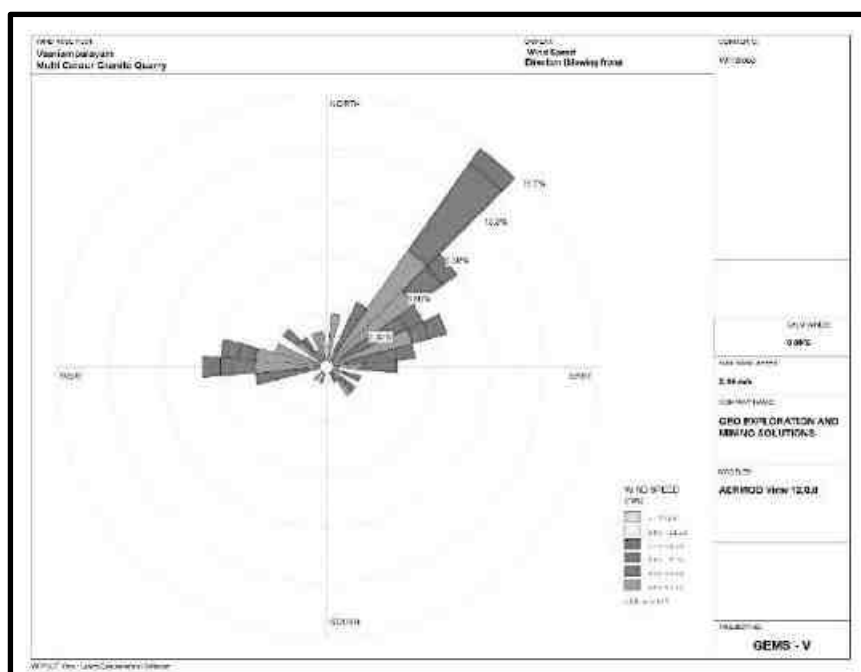
Source: <https://www.twadboard.tn.gov.in/content/karur>

Table 3.14: Meteorological Data Recorded at Site

S.No	Parameters		Oct-2025	Nov-2025	Dec-2025
1	Temperature ($^{\circ}\text{C}$)	Max	29.40	26.99	26.48
		Min	25.06	21.25	21.24
		Avg	27.23	24.12	23.86
2	Relative Humidity (%)	Avg	76.75	86.64	82.72
3	Wind Speed (m/s)	Max	4.16	2.64	4.49
		Min	0.96	0.80	1.13
		Avg	2.56	1.72	2.81
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		W,E	NE,ENE	NE,ENE

Correlation between Secondary and Primary Data

The meteorological data collected at the site is almost similar to that of secondary data collected from IMD station. A comparison of site data generated during the three months with that of IMD, Wind rose diagram of the study site is depicted in Figure. 3.12. Predominant downwind direction of the area during study season is East - East to North East.

Figure 3.11: Windrose Diagram

Source: Wind Rose plot view, Lake Environmental Software

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

- Predominant winds were from NE,ENE, W,E
- Wind velocity readings were recorded between 1.72 to 2.81 m/s
- Temperature readings ranging from 23.86 to 27.23 °C
- Relative humidity ranging from 76.75 to 86.64%

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

Parameter	Method	Instrument
PM _{2.5}	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM ₁₀	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 3.15: 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 Eight (8) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period October to December, 2025 The baseline data of ambient air has been generated for 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 ± 0.5 m 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 3.6.1 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

Table 3.16: Ambient Air Quality (AAQ) Monitoring Locations AAQ1-AAQ7

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	10°53'12.01"N 78°18'36.71"E
2	AAQ-2	Core Zone	Project Area	10°53'28.44"N 78°18'40.71"E
3	AAQ-3	Near Habitation	460m SW	10°52'59.75"N 78°18'22.59"E
4	AAQ-4	Devasingampatti	4.7km SE	10°51'23.38"N 78°20'25.82"E
5	AAQ-5	Cholapuram	4.2km NW	10°55'11.79"N 78°17'7.82"E
6	AAQ-6	Palapatti	4.0km NE	10°54'14.48"N 78°20'44.50"E
7	AAQ-7	Pappayampadi	4.8km SW	10°51'48.10"N 78°16'19.43"E

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

Figure 3.12: Ambient Air Quality Locations Around 10 Km Radius

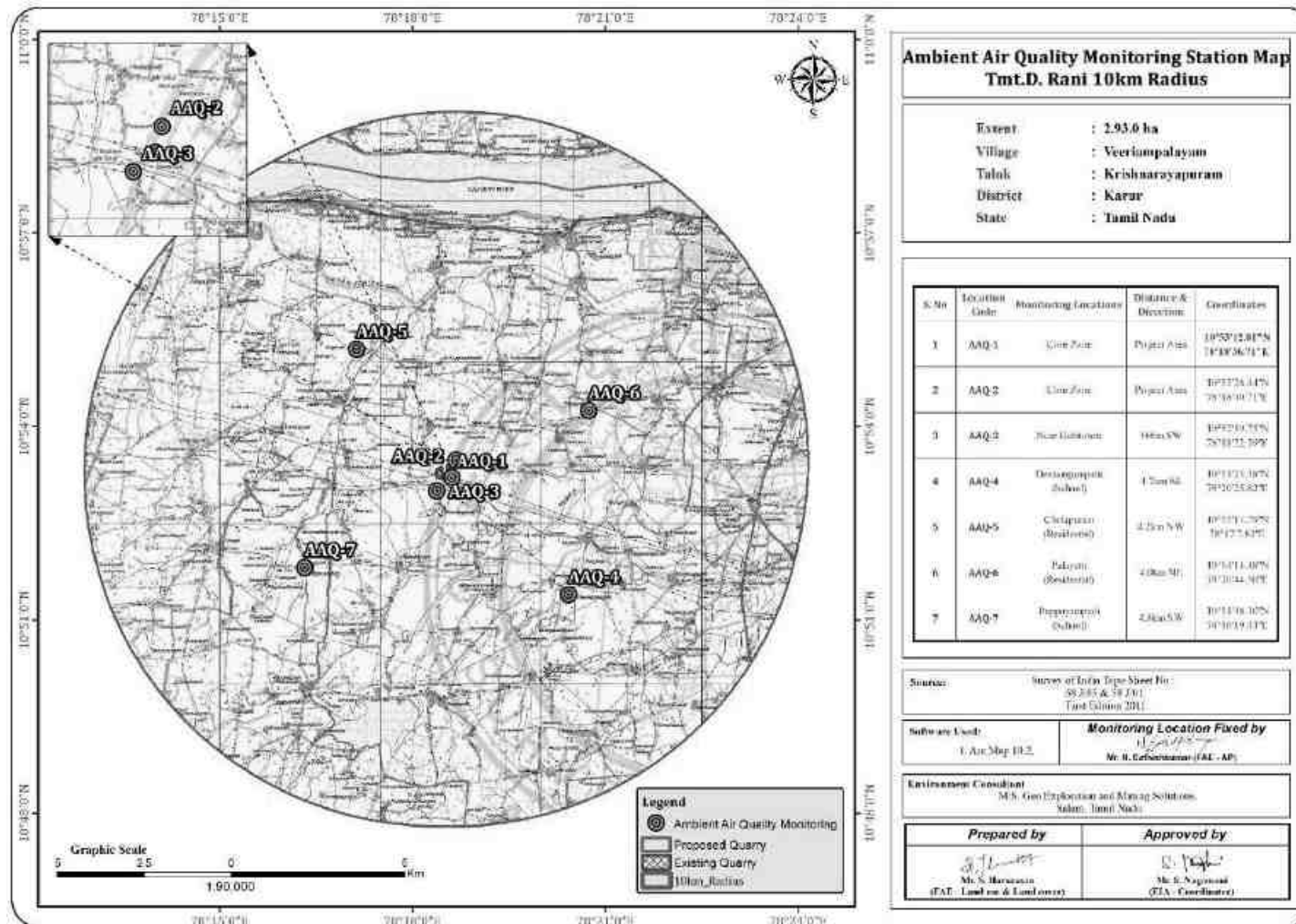


Table 3.25: Abstract of Ambient Air Quality Data

1	Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO ₂
2	No. of Observations	260	260	260	260
3	10 th Percentile Value	41.7	20.4	4.6	19.3
4	20 th Percentile Value	42.3	21.2	4.9	19.8
5	30 th Percentile Value	42.9	21.6	5.1	20.3
6	40 th Percentile Value	43.4	22.0	5.3	20.7
7	50 th Percentile Value	43.8	22.5	5.5	21.1
8	60 th Percentile Value	44.1	22.9	5.6	21.4
9	70 th Percentile Value	44.5	23.3	5.8	21.8
10	80 th Percentile Value	45.1	24.1	6.0	22.2
11	90 th Percentile Value	46.1	24.5	6.4	22.9
12	95 th Percentile Value	46.5	24.9	7.1	23.4
13	98 th Percentile Value	47.1	25.8	7.9	23.9
14	Arithmetic Mean	44.3	23.0	5.8	21.5
15	Geometric Mean	44.3	23.0	5.8	21.5
16	Standard Deviation	1.8	1.7	1.0	1.5
17	Minimum	41.7	20.4	4.6	19.3
18	Maximum	47.1	25.8	7.9	23.9
19	NAAQ Norms*	100.0	60.0	80.0	80.0

Legend: PM_{2.5}-Particulate Matter size less than 2.5 µm; PM₁₀-Respirable Particulate Matter size less than 10 µm; SO₂-Sulphur dioxide; NO₂-Nitrogen Dioxide; CO-Carbon monoxide; O₃-Ozone; NH₃-Ammonia; Pb-Particulate Lead; As-Particulate Arsenic; Ni-Particulate Nickel; C₆H₆-Benzene & BaP- Benzo (a) pyrene in particulate phase levels were monitored below their respective detectable limits.

* NAAQ Norms-National Ambient Air Quality Norms-Revised as per GSR 826(E) dated 16.11.2009 for Industrial, Residential, Rural and other Area.

Table 3.26: Summary of Ambient Air Quality Data (AAQ1-AAQ7)

PM ₁₀	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	43.5	43.8	43.9	43.7	43.3	43.9	43.9
Minimum	41.2	40.9	41.7	40.7	39.8	41.1	40.7
Maximum	45.9	47.2	46.4	46.6	45.4	46.8	47.3
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PM _{2.5}	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	22.5	22.5	22.7	22.4	22.0	23.0	22.4
Minimum	20.4	19.1	19.9	19.1	18.7	19.9	19.5
Maximum	25.4	25.8	24.5	26.6	24.5	25.8	24.5
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0

SO2	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	5.3	5.5	5.5	5.7	5.4	5.4	5.8
Minimum	4.1	4.4	4.4	4.3	4.3	4.4	4.2
Maximum	7.4	6.4	6.9	8.2	7.1	7.3	8.1
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0
NO2	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	20.7	21.1	21.2	21.4	20.7	21.4	21.0
Minimum	19.0	18.9	18.9	18.9	16.6	19.7	18.9
Maximum	22.9	23.9	23.7	24.0	23.2	24.0	23.1
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

FIGURE 3.13: BAR DIAGRAM OF SUMMARY OF AIR QUALITY MODEL(AAQ1-AAQ7)

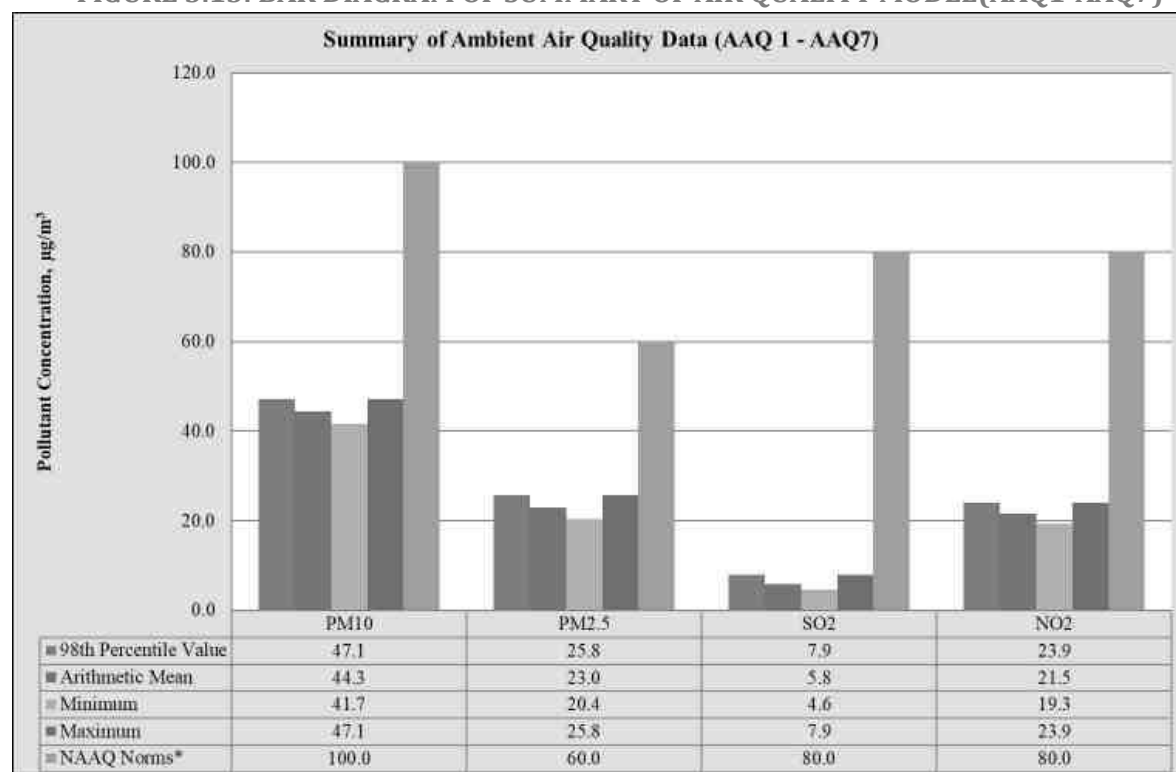


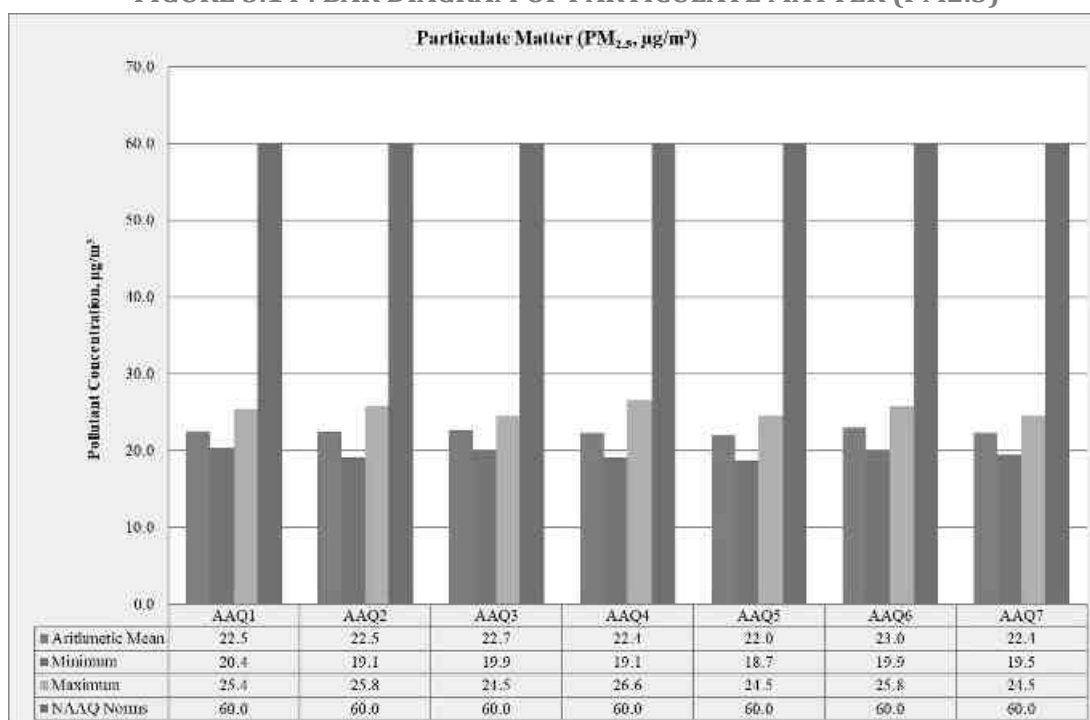
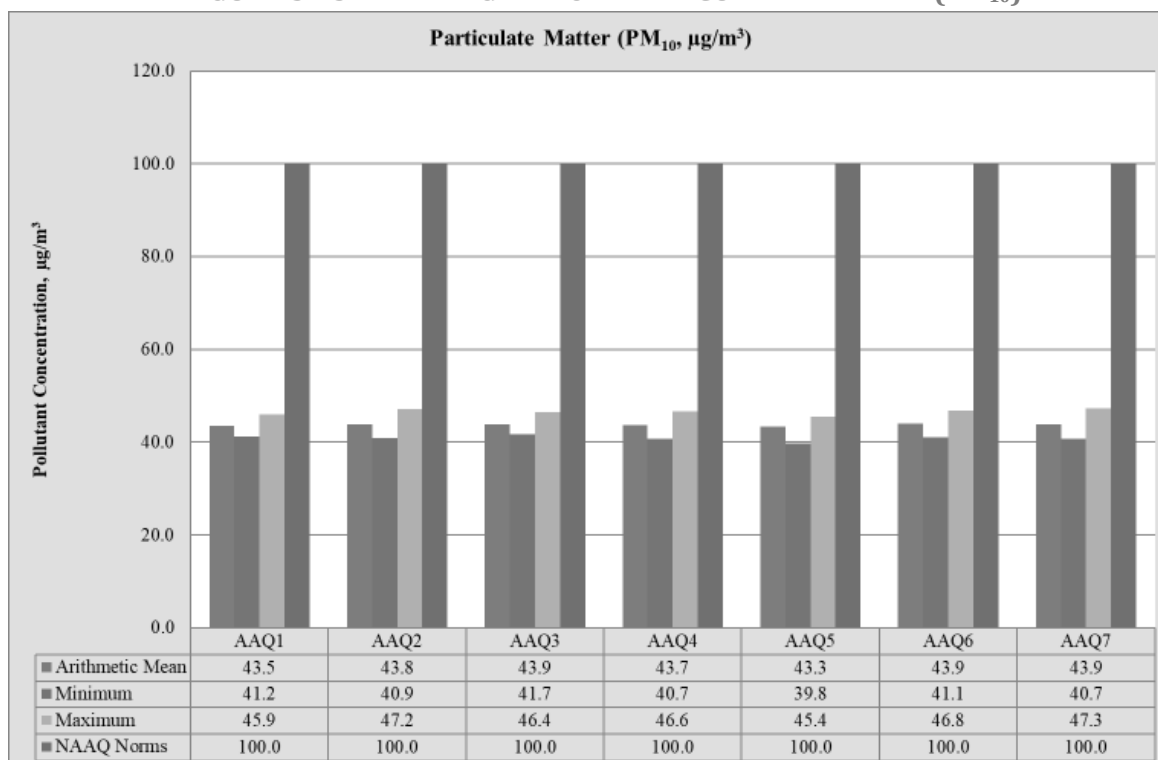
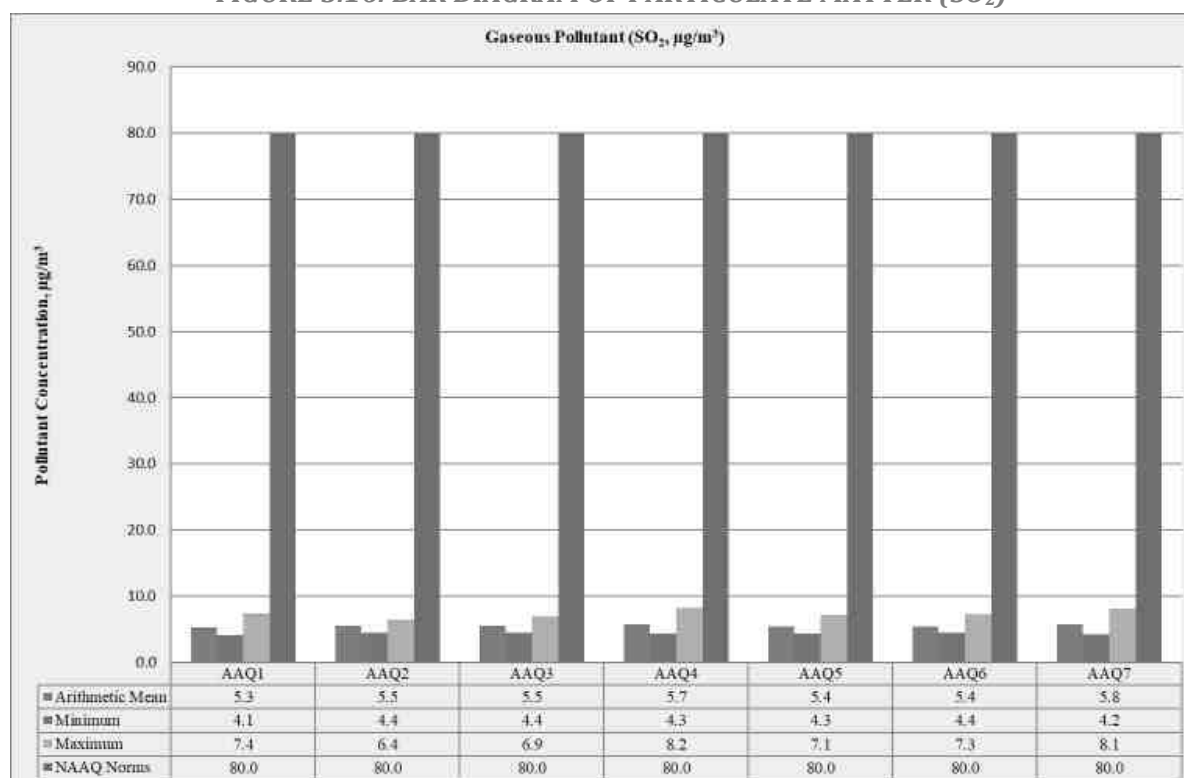
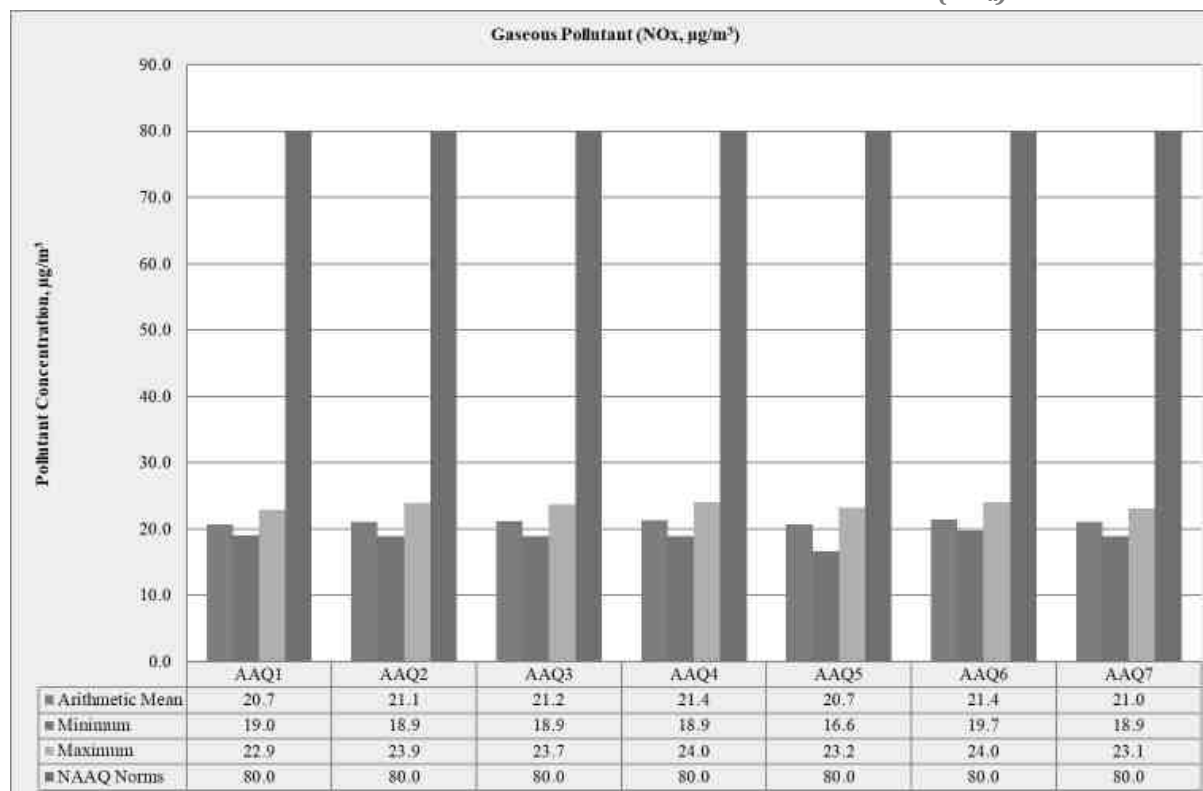
FIGURE 3.14 : BAR DIAGRAM OF PARTICULATE MATTER (PM_{2.5})**FIGURE 3.15: BAR DIAGRAM OF PARTICULATE MATTER (PM₁₀)**

FIGURE 3.16: BAR DIAGRAM OF PARTICULATE MATTER (SO₂)**FIGURE 3.17: BAR DIAGRAM OF PARTICULATE MATTER (NO_x)**

3.3.6 Interpretations & Conclusion

As per monitoring data, PM₁₀ ranges from 43.3 to 43.9 µg/m³, PM_{2.5} data ranges from 22.0 to 22.7 µg/m³, SO₂ ranges from 5.3 to 5.8 µg/m³ and NO₂ data ranges from 20.7 to 21.4 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 10 km. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study.

Table 3.29: Details of Noise Monitoring Locations

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	N-1	Core Zone	Project Area	10°53'13.35"N 78°18'37.29"E
2	N-2	Core Zone	Project Area	10°53'27.33"N 78°18'39.40"E
3	N-3	Near Habitation	460m SW	10°52'59.78"N 78°18'24.01"E
4	N-4	Devasingampatti	4.7km SE	10°51'23.75"N 78°20'26.23"E
5	N-5	Cholapuram	4.2km NW	10°55'12.31"N 78°17'7.56"E
6	N-6	Palapatti	4.0km NE	10°54'14.33"N 78°20'44.51"E
7	N-7	Pappayampadi	4.8km SW	10°51'47.70"N 78°16'19.59"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.

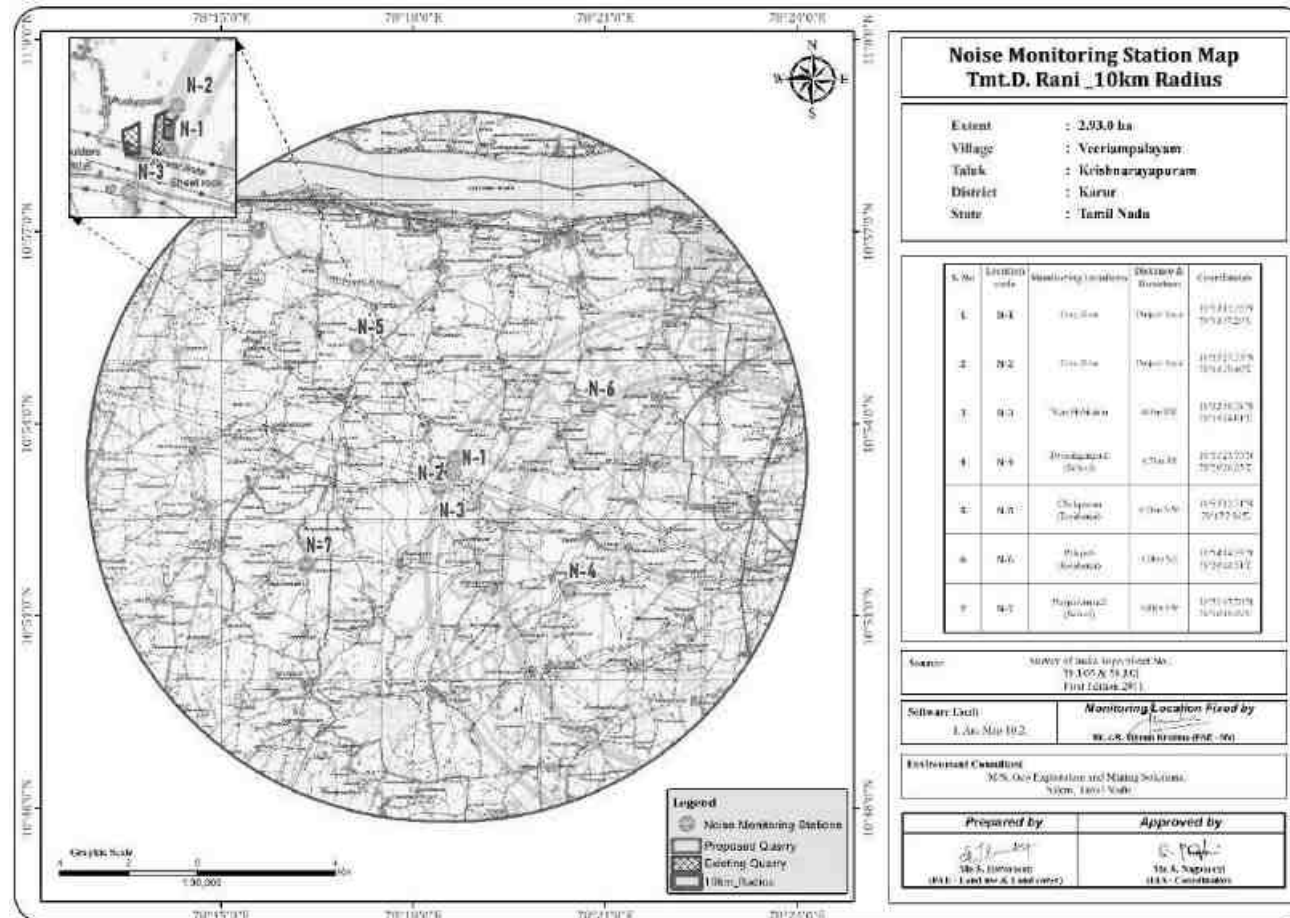
Measured noise levels, displayed as a function of time, is useful for describing the acoustical climate of the community. Noise levels recorded at each station with a time interval of about 60 minutes are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing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

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

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

T = Time interval of observation

Figure 3.18: Noise Monitoring Stations Around 10 Km Radius



3.4.3 Analysis of Ambient Noise Level in the Study Area

The Digital Sound pressure level have 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 3.28

Day time: 6:00 hours to 22.00 hours.

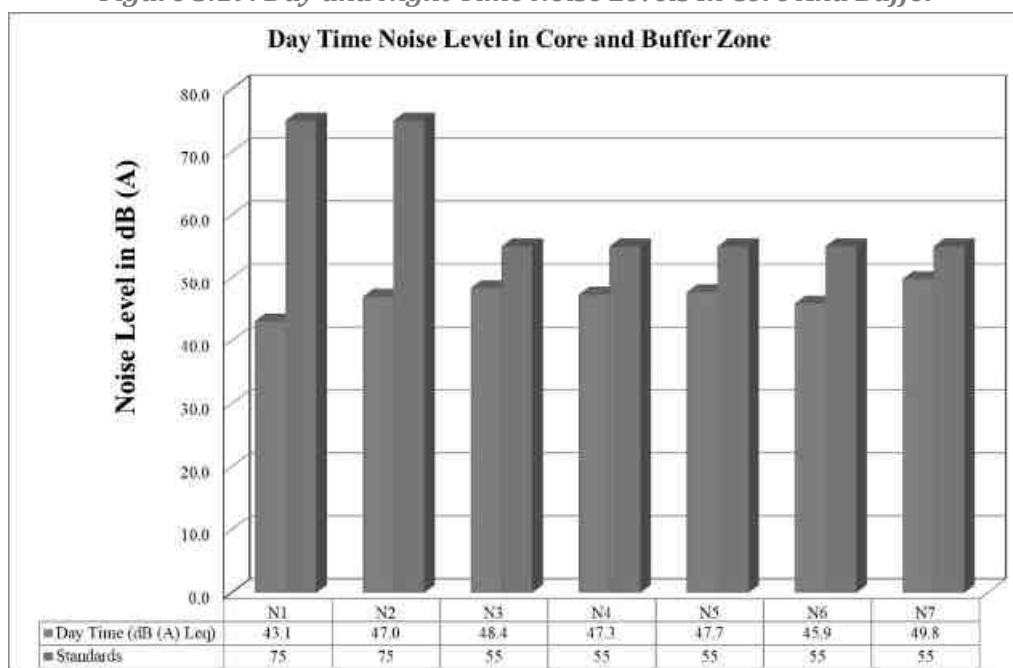
Night time: 22:00 hours to 6.00 hours.

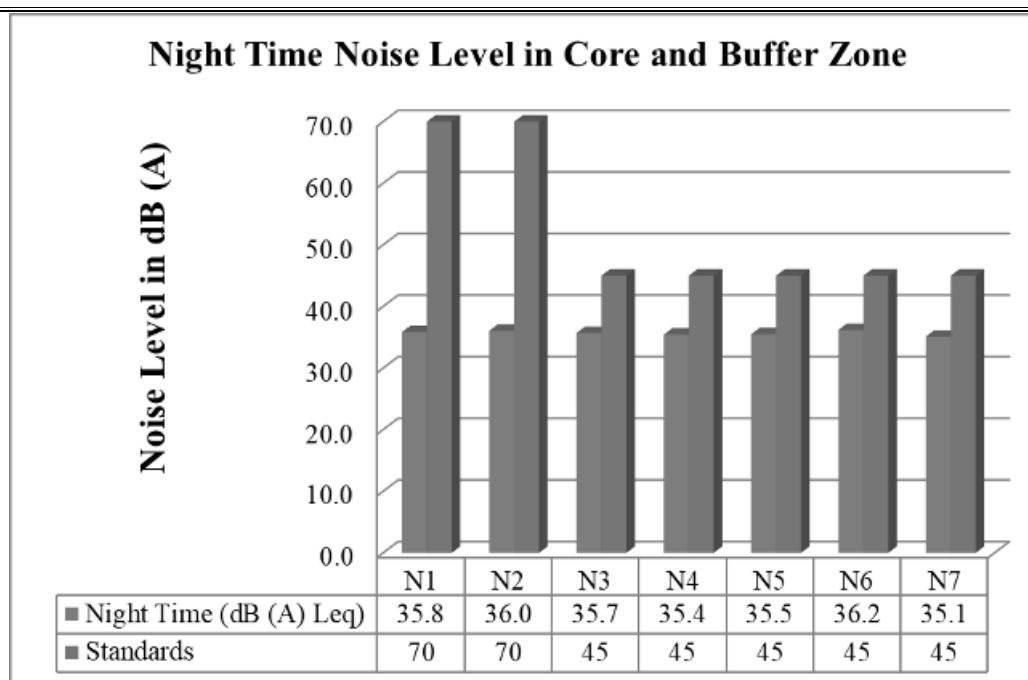
Table 3.30: Ambient Noise Quality Result

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	48.9	37.1	Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)
2	Core Zone	47.9	37.5	
3	Near Habitation	50.7	39.6	
4	Devasingampatti (School)	47.9	40.5	Residential Day Time- 55 dB (A) Night Time- 45 dB (A)
5	Cholapuram (Residential)	49.2	40.3	
6	Palapatti (Residential)	47.3	38.5	
7	Pappayampadi (School)	50.1	39.0	

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

Figure 3.19: Day and Night Time Noise Levels In Core And Buffer





3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 7 (Seven) locations around the proposed project area. Noise levels recorded in core zone during day time were from 43.1-47.0 dB (A) Leq and during night time were from 35.8-36.0 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 45.9- 49.8dB (A) Leq and during night time were from 35.1-35.7dB (A)Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 Biological Environment

3.5.1.Study area Ecology

The study of the biological environment is one of the important aspects of Environmental Impact Assessments. The biotic component comprises both plant and animal communities which interact within the community and between themselves but also with abiotic i.e. physical and chemical components of the environment. A general ecological survey was carried out in the study area of 10 km radius around the Mine area. The study Area is not part of any National Park, Sanctuary, Biosphere Reserve, Wildlife Corridors, Migratory Path, etc. The primary data was generated by preparing a general checklist of all plants encountered in the study area. The species of vegetation found were identified and listed according to their families. The division of core and buffer zone is the best way to study the pattern of biodiversity for environmental impact assessment.

3.5.2. Objectives of Biological Studies

- 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.
- Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - scheduleI) 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.

g) Devise management & conservation measures for biodiversity.

3.5.3. Methodology of Sampling

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

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

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

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

3.5.3.1. Sampling

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

3.5.3.2. Sampling Size

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

3.5.3.3. Timing of Study

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

3.5.3.4. Observations from Sampling

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

3.5.3.5. Equipment/ References

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

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

3.5.4. Part I Field Sampling Techniques

3.5.4.1. Transect walk – Birds

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

3.5.4.2. Modified Pollard Walk – for Butterflies

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

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

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

3.5.4.4. Observational methods- Mammals

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

3.5.4.5. Multiple Stage Quadrat – Vegetation

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

3.5.5. Flora

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

Table No: 3.53. Flora in the Core Zone of Tmt.D.Rani Multi-Coloured Granite Quarry

Sl.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	White Bark Acacia	Vela maram	<i>Vachellia leucophloea</i>	Fabaceae
2.	Neem or Indian lilac	Vembu maram	<i>Azadirachta indica</i>	Meliaceae
3.	Singapore Cherry	Ten pazham	<i>Muntingia calabura</i>	Malvaceae
4.	Millettia Pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
5.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae
Shrubs				
1.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
2.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
3.	Yellow elder	Manjarali	<i>Tecoma stans</i>	Bignoniaceae
4.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
Herbs				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Ban Tulsi	Milagai poondu	<i>Croton sparsiflorus</i>	Euphorbiaceae
3.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
4.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
5.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
6.	Devil's thorn	Nerunji	<i>Tribulus terrestris</i>	Zygophyllales
7.	Fish poison	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
8.	Pignut	Nattapoochedi	<i>Hyptis suaveolens</i>	Lamiaceae
9.	Flannel Weed	Sida mutti	<i>Sida cordifolia</i>	Malvaceae
10.	Indian nettle	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae
Climber				
1.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae

Grasses				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae

3.5.5.1. Flora Composition in the Core Zone

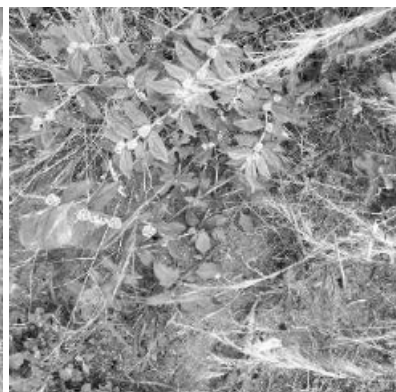
Taxonomically a total of 21 species belonging to 14 families have been recorded from the core mining lease area. The proposed area applied area is situated on plain terrain. Based on the habitat classification of the enumerated plants the majority of species were Herbs 11 followed by Trees 5, Shrubs 3, Climber 1, and Grasses 2. Details of flora with the scientific name were mentioned in Table No. 3.53. The result of the core zone of flora studies shows that Fabaceae and Poaceae, Apocynaceae are the main dominating species in the study area mentioned in Table No.3.53. No species found as threatened category.



a. Tecoma stans



b. Abutilon indicum



c. Euphorbia hirta



d. Azadirachta indica



e. Senna auriculata



f. Calotropis gigantea



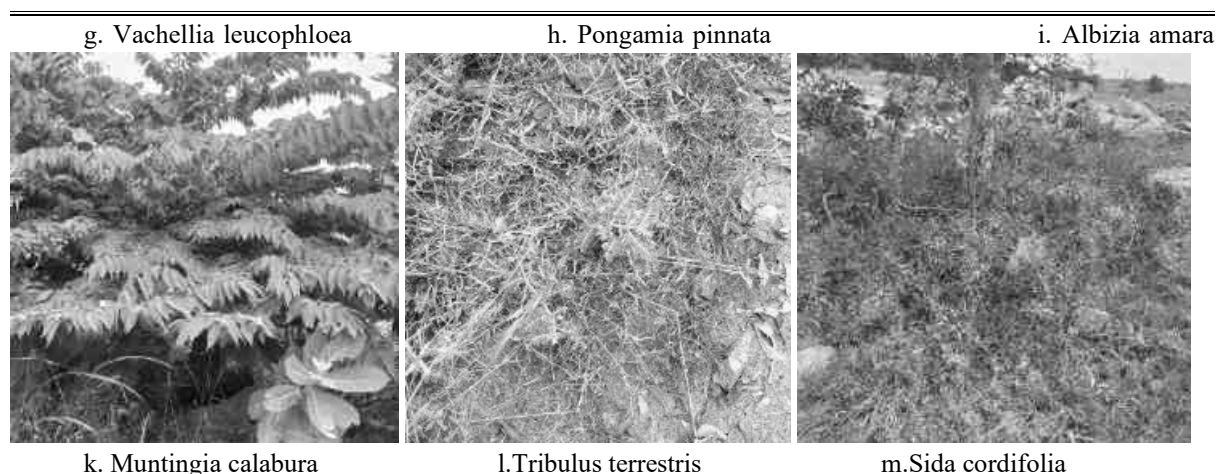


Fig No: 3.33. Flora species observation in the core zone area

Table No: 3.54. Flora in the Buffer zone of study area.

S.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Millettia Pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
2.	White Bark Acacia	Vela maram	<i>Vachellia leucophloea</i>	Fabaceae
3.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
4.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae
5.	Gooseberry	Arai nelli	<i>Phyllanthus acidus</i>	Euphorbiaceae
6.	Neem or Indian lilac	Vembu	<i>Azadirachta indica</i>	Meliaceae
7.	Indian plum	Elanthai maram	<i>Ziziphus mauritiana</i>	Rhamnaceae
8.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
9.	Gum arabic tree	Karuvelam	<i>Acacia nilotica</i>	Mimosaceae
10.	Drumstick tree	Karimurungai	<i>Moringa olefera</i>	Moraginaceae
11.	Banana tree	Vazhaimaram	<i>Musa</i>	Musaceae
12.	Senna siamea	Manjal Konnai	<i>Sennasiamea</i>	Fabaceae
13.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae
14.	Creamy Peacock Flower	Vadanarayani	<i>Delonix elata</i>	Fabaceae
15.	Beauty leaf	Punnai	<i>Calophyllu inophyllum</i>	Calophyllaceae
16.	Umbrella thorn	Kodaivelam	<i>Acacia planifrons</i>	Mimosaceae
17.	Indian fig tree	Athi	<i>Ficus recemosa</i>	Moraceae
18.	Jujube	Ilanthai	<i>Ziziphus jujubha</i>	Rhamnaceae
19.	Oil cake tree	Arappu	<i>Albizia amara</i>	Mimosaceae
20.	Giant thorny bamboo	Perumungil	<i>Bambusa bambos</i>	Poaceae
21.	Woman's tongue	Vagai	<i>Albizia lebbeck</i>	Mimosaceae
22.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes
23.	Rain Tree	Thoongu moonji	<i>Albizia saman</i>	Mimosaceae
24.	Muntingia calabura	Singapore cherry	<i>Muntingiacalabura</i>	Malvaceae
25.	Chinesh cheery	Thenpazham	<i>Muntingia calabura</i>	Tiliaceae
26.	Chebulic myrobalan	Kadukkai	<i>Terminalia chebula</i>	Combretaceae
27.	Indian fir tree	Nettilinkam	<i>Polylathia longifolia</i>	Annonaceae
28.	Indian bael	Vilvam	<i>Aegle marmelos</i>	Rutaceae
29.	Indian Mulberry	Manjanati	<i>Morinda coreia</i>	Rubiaceae
30.	Henna	Marudaani	<i>Lawsonia inermis</i>	Lythraceae
31.	Eucalyptus	Eucalyptus	<i>Eucalyptus globules</i>	Myrtaceae
32.	Manilkara zapota	Sapota	<i>Manilkara zapota</i>	Sapotaceae

33.	Black plum	Navalmaram	<i>Syzygium cumini</i>	Myrtaceae
34.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
35.	Jack fruit	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae
36.	Curry tree	Karivembu	<i>Murraya kenti</i>	Rubiaceae
37.	Robber-thorn tree	Anaimullu	<i>Acacia horrida</i>	Mimosaceae
38.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae
39.	Indian gooseberry	Nelli	<i>Emblica officinalis</i>	Phyllanthaceae
40.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
41.	Madras Thorn	Kuduka puli	<i>Pithecellobium dulce</i>	Mimosaceae
42.	Noni	Nuna maram	<i>Morinda citrifolia</i>	Rubiaceae
43.	Five leaf chastera	Nochi	<i>Vitex negundo</i>	Lamiaceae
44.	Papaya	Pappali maram	<i>Carica papaya L</i>	Caricaceae
45.	Peepal	Arasanmaram	<i>Ficus religiosa</i>	Moraceae
46.	Monoon longifolium	Nettilingam	<i>Polyalthia longifolia</i>	Annonaceae
47.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae
48.	custard apple	Seethapazham	<i>Annona reticulata</i>	Annonaceae
49.	Curry tree	Velipparuthi	<i>Murraya koenigii</i>	Asclepiadaceae
50.	Bamboo	Moonghil	<i>Bambusa bambo</i>	Poaceae
Shrubs				
1.	Shoe flower	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	Malvaceae
2.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
3.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
4.	Coffee senna	Kattuttakarai	<i>Senna occidentalis</i>	Fabaceae
5.	Rosy Periwinkle	Nithyakalyani	<i>Cathranthus roseus</i>	Apocynaceae
6.	Peacock Flower	Mayil Kontai	<i>Caesalpinia pulcherrima</i>	Fabaceae
7.	Chrozophora tinctoria	Puramuttai	<i>Chrozophora rottleri</i>	Euphorbiaceae
8.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
9.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
10.	Yellow elder	Manjarali	<i>Tecoma stans</i>	Bignoniaceae
11.	Tiger nail	Eli verandi	<i>Martynia annua</i>	Martyniaceae
12.	Jackal jujube	Surai Iltantai	<i>Ziziphus oenoplia</i>	Rhamnaceae
13.	Rough cocklebu	Ottarachedi	<i>Xanthium strumarium</i>	Asteraceae
14.	Datura metel	Uumaththai	<i>Datura metel</i>	Solanaceae
15.	Castor oil plant	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae
16.	Plumeria alba	Malaialali	<i>Plumeria alba</i>	Appocynaceae
17.	Senna alata	Seemaigaththi	<i>Cassia alata</i>	Caesalpinaceae
18.	Pinwheelflower	Nandiar vattai	<i>Tabernaemontana coronaria</i>	Apocynaceae
19.	Flame of the Woods	Idlipoo	<i>xoracoc cine</i>	Rubiaceae
20.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
21.	Giant reed	Naanal	<i>Arunudo donax</i>	Poaceae
22.	Malabar nut	Adathodai	<i>Justicia adhatoda</i>	Acanthaceae
23.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
24.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
25.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
26.	Prickly pear	Nagathali	<i>Opuntia</i>	Cactaceae
27.	Solanum pubescens	Malaisundai	<i>Solanum pubescens Willd</i>	Solanaceae
28.	Hygrophila spinosa	Neermulli	<i>Hydrophila auriculata</i>	Acanthaceae
29.	Ipomoea cornea	Neivelikattamanaku	<i>Ipomoea carnea</i>	Convolvulaceae
30.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae

31.	Ceylon Date Palm	Icham	<i>Phoenix pusilla</i>	Arecaceae
Herbs				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
3.	Flannel Weed	Sida mutti	<i>Sida cordifolia</i>	Malvaceae
4.	Aloes	Katrazhai	<i>Aloe</i>	Liliaceae
5.	European black nightshade	Manathakkali	<i>Solanumnigrum</i>	Solanaceae
6.	Sessile joyweed	Ponnanganni	<i>Alternanthera sessilis</i>	Amaranthaceae
7.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
8.	Cat's claw	Thael Kodukku	<i>Martynia annua</i>	Pedaliaceae
9.	Poor land flatsedg	Kunnakora	<i>Cyperus compressus</i>	Cyperaceae
10.	Goatweed	Pumpillu	<i>Ageratum conyzoides</i>	Asteraceae
11.	Mexican prickly poppy	Eli-yotti	<i>Argemone mexicana</i>	Papaveraceae
12.	Gotu kola	Vallarai	<i>Centella asiatica</i>	Apiaceae
13.	Pink Blumea	Suvattru mullangi	<i>Blumea mollis</i>	Asteraceae
14.	Chinese Spinach	Thandukeerai	<i>Amaranthus tricolor</i>	Amaranthaceae
15.	Tridax daisy	Veetukaayapoond	<i>Tridax procumbens</i>	Asteraceae
16.	Creeping chaffweed	Adai otti	<i>Alternanthera pungens</i>	Amaranthaceae
17.	Digeria muricata	Thoiya keera	<i>Digeria muricata</i>	Amaranthaceae
18.	Indian Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae
19.	Cyperus difformis	Kudai koori	<i>Cyperus difformis</i>	Cyperaceae
20.	Mountain knotgrass	Thengaipoo kirai	<i>Aerva lanata</i>	Amaranthaceae
21.	Riceweeds	Seruppada	<i>Coldenia procumbens</i>	Boraginaceae
22.	Goatweed	Kallurukki	<i>Scoparia dulcis</i>	Plantaginaceae
23.	East Indian globe thistle	kottai-k-karantai	<i>Sphaeranthus indicus</i>	Asteraceae
24.	False daisy	Karisilanganni	<i>Eclipta prostrata</i>	Asteraceae
25.	Chocolate weed	Punnakku poond	<i>Melochia corchorifolia</i>	Sterculiaceae
26.	Marsh barbel	Neermulli	<i>Hygrophila auriculata</i>	Acanthaceae
27.	Black Mustard Seed	Kaduku	<i>Brassica juncea</i>	Brassicaceae
28.	Slender amaranth	Sirukeerai	<i>Amaranthus polygonoides</i>	Amaranthaceae
29.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
30.	Cleome viscosa	Nai kadugu	<i>Cleome viscosa</i>	Capparidaceae
31.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
32.	Punarnava	Mukkirattai	<i>Boerhaavia diffusa</i>	Nyctaginaceae
33.	Prickly amaranth	Mullukkeerai	<i>Amaranthus spinosus</i>	Amaranthaceae
34.	Tomato	Thakkali	<i>Solanum lycopersicum</i>	Solanaceae
35.	False daisy	Karisalankanni	<i>Eclipta alba</i>	Asteraceae
36.	Chilli	Milakai	<i>Capsicum annuum</i>	Solanaceae
37.	Red Spiderling	Mukirattai	<i>Boerhaavia diffusa</i>	Nyctaginaceae
38.	Porcupine flower	Kundan	<i>Barleria prionitis</i>	Acanthaceae
39.	Billygoat weed	Pumpillu	<i>Ageratum conyzoides</i>	Asteraceae
Climbers				
1.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae
2.	Balloon vine	Mudakkotan	<i>Cardiospermum helicacabum</i>	Sapindaceae
3.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
4.	Pointed gourd	Kovakkai	<i>Trichosanthes dioica</i>	Cucurbitaceae
5.	Rosary pea	Kuntumani	<i>Abrus precatorius L</i>	Fabaceae
6.	Indian sarsparilla	Nannari	<i>Hemidesmus indicus</i>	Asclepiadaceae

7.	Coral vine	Kodi rose	<i>Antigonon leptopus</i>	Polygonaceae
8.	Butterfly-pea	Sangupoo	<i>Clitoria ternata</i>	Fabaceae
9.	Wild jasmine	Malli	<i>Jasminum augustifolium</i>	Oleaceae
10.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	Cucurbitaceae
11.	Bitter gourd	Pavakkai	<i>Momordica charantia</i>	Cucurbitaceae
Creepers				
1.	Ground Spurge	Sithrapaalavi	<i>Euphorbia prostrata</i>	Euphorbiaceae
2.	<i>Ipomoea reniformis</i> chois	Elikkathilai	<i>Merremia gangetica</i>	Convolvulaceae
3.	Bitter Apple	Thumattikai	<i>Cucumis callosus</i>	Cucurbitaceae
4.	Merremia	Muthiyar koontha	<i>Merremia tridentata</i>	Convolvulaceae
5.	Frog fruit	Poduthalai	<i>Phylla nodifolia</i>	Verbenaceae
Grasses				
1.	Apluda	Kattu kanchippul	<i>Apluda mutica</i>	Poaceae
2.	Nut grass	Korai	<i>Cyperus rotundus</i>	Poaceae
3.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
4.	Jungle rice	Kuthirai vaal Kattu arusi	<i>Echinochloa colona</i>	Poaceae
5.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	Amaranthaceae
6.	Finger grass	Kuruthupillu	<i>Chloris dolichostachya</i>	Poaceae
7.	Umbrella-sedge	Vattakorai	<i>Cyperus difformis</i>	Cyperaceae
8.	Marvel grass	Marvel grass	<i>Dichanthium annulatum</i>	Poaceae

*E- Economical, M- Medicinal, EM- Both Economical and Medicinal, NE- Not evaluated.

Source:

Nair.N.C and A.N. Henry, Flora of Tamil Nadu 1983, Series 1, Botanical Survey of India, Southern Circle.

3.5.6. Flora Composition in the Buffer Zone

The buffer region has a similar type of habitat, but it has a wider variety of vegetation than the core zone area. The proposed lease area has plain terrain. There are 144 different species identified in the buffer zone. Among the identified, floral (144) species were 50 trees, 39 herbs, 31 shrubs, 11 climbers, 5 Creepers, and 8 grasses. According to the findings of the buffer zone flora studies, the dominant species in the study area are Fabaceae, Asteraceae, and Euphorbiaceae, as shown in Table No.3.54. 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. Details of flora with the scientific name were mentioned in Table No.3.54.

A list of floral species has been prepared based on a primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.55 and their % distribution is shown in Figure 3.34.

Table 3.55: Number of floral life forms in the Study Area

S. No	Plant Life Form	Number of Species
1	Trees	50
2	Shrubs	31
3	Herbs	39
4	Climber	11
5	Creepers	5
6	Grasses	8
Total No. of Species		144

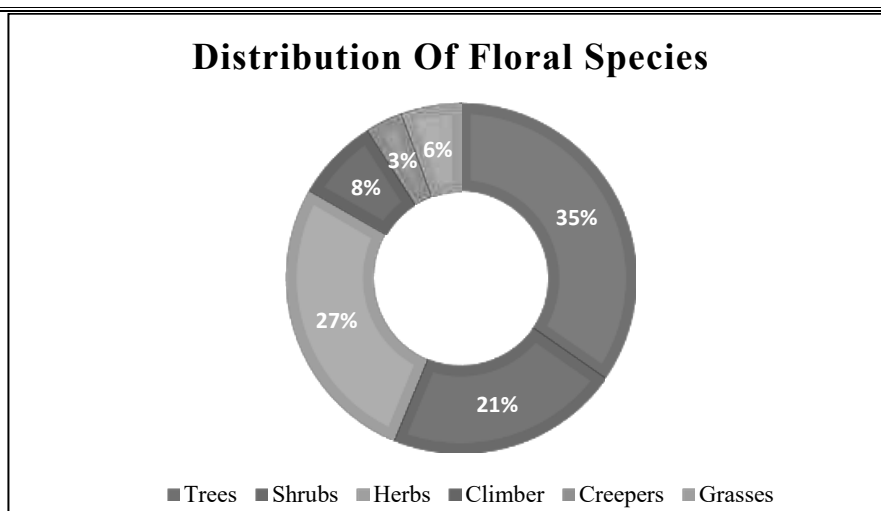


Fig No. 3.34: Graph showing % distribution of floral life forms

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

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

3.6. Fauna

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

3.6.1. Fauna Composition in the Core Zone

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 5, Reptiles 6, Mammals 3, and Avian 8. The core site has avifauna species like the crow, Common myna, Koel, etc. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and nine species are under Schedule IV according to the Indian Wildlife Act 1972. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table No: 3.56. Fauna in the Core zone of Tmt.D.Rani, Multi-Coloured Granite Quarry

Sl. No	Common Name	Scientific Name	Schedule list WLPC 1972
Insects			
1.	Common Tiger	<i>Danaus genutia</i>	Schedule IV
2.	Tawny coster	<i>Danaus chrysippus</i>	Schedule IV
3.	Striped tiger	<i>Danaus plexippus</i>	Schedule IV
4.	House fly	<i>Musca domestica</i>	-
5.	Dragonfly	<i>Agriansp</i>	-
Reptiles			
1.	Oriental garden lizard	<i>Calotes versicolor</i>	NL

2.	Indian forest skink	<i>Sphenomorphus indicus</i>	NL
3.	Common krait	<i>Bungarus caeruleus</i>	LC
4.	Rat snake	<i>Ptyas mucosa</i>	Schedule IV
5.	House lizards	<i>Hemidactylus flaviviridis</i>	Schedule IV
6.	Green vine snake	<i>Ahaetulla nasuta</i>	Schedule IV
Mammals			
1.	Indian Field Mouse	<i>Mus booduga</i>	Schedule IV
2.	Asian Small Mongoose	<i>Herpestes javanicus</i>	Schedule (Part II)
3.	Squirrel	<i>Funambulus palmarum</i>	Schedule IV
Aves			
1.	Rose-ringed parakeet	<i>Psittacula krameri</i>	Schedule IV
2.	Common myna	<i>Acridotheres tristis</i>	Schedule IV
3.	Asian koel	<i>Eudynamis scolopacea</i>	Schedule IV
4.	Koel	<i>Eudynamis</i>	Schedule IV
5.	Black drongo	<i>Dicrurus macrocercus</i>	Schedule IV
6.	House crow	<i>Corvus splendens</i>	Schedule IV
7.	Cattle egret	<i>Bubulcus ibis</i>	Schedule IV
8.	Asian green bee-eater	<i>Merops orientalis</i>	Schedule IV

(Sources: Species observation in the field study)

3.6.2. Fauna Composition in the Buffer Zone

As animals, especially vertebrates move from place to place in search of food, shelter, mate or other biological needs, separate lists for core and buffer areas are not feasible however, a separate list of fauna pertaining to core and buffer zone are listed separately. Though there are no reserved forest 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 Reserve or Elephant Corridor or other protected areas within 10 km radius 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 green bee-eaters, Indian blue robin, Common Myna, Black drongos, Crows, etc.

The list of Mammals (*directly sighted animals & Secondary data) is given in table No.3.57. The list of bird species recorded during the field survey and literature from the study area are given in Table 3.58. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.59. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.60. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.61. 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 73 species were identified from the project site. Based on habitat classification the majority of species were Insects 4, followed by birds 35, Reptiles 9, Mammals 5, Amphibians 5, and Butterflies 15. A total of 35 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 and buffer flies, and five Amphibians were observed during the extensive field visit *Duttaphrynus melanostictus*, *Rana tiger*, *Euphyctis hexadactylus* and, *Hoplobatrachus tigerinus*. There is no schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

**Table 3.57. List of Fauna & Their Conservation Status,
Mammals: (*directly sighted animals & Secondary data)**

Sl. No	Scientific Name	Common Name	Schedule
1.	<i>Funambulus palmarum</i>	Indian palm squirrel	Schedule IV
2.	<i>Mus booduga</i>	Indian Field Mouse	Schedule IV

3.	<i>Herpestes javanicus</i>	Asian Small Mongoose	Schedule (Part II)
4.	<i>Lepus nigricollis</i>	Indian hare	Schedule (Part II)
5.	<i>Rattus norvegicus</i>	Brown rat	Schedule IV

Table 3.58. Listed birds

Sl. No	Scientific Name	Common Name/English Name	Schedule list wildlife Protection act 1972
1.	<i>Turdoides striata</i>	Jungle babbler	Schedule IV
2.	<i>Lonchura Malabarica</i>	Indian Silver Bill	Schedule IV
3.	<i>Saxicoloides fulicatus</i>	Indian robin	Schedule IV
4.	<i>Psittacula krameri</i>	Rose Ringed Parakeet	Schedule IV
5.	<i>Turdoides caudata</i>	Common Babbler	Schedule IV
6.	<i>Eudynamys</i>	Asian Koel	Schedule IV
7.	<i>Hirundo rustica</i>	Barn Swallow	Schedule IV
8.	<i>Bubulcus ibis</i>	Cattle egret	Schedule IV
9.	<i>Columba livia</i>	Blue Rock Pigeon	Schedule IV
10.	<i>Acridotheres tristis</i>	Common myna	Schedule IV
11.	<i>Corvus splendens</i>	House crow	Schedule IV
12.	<i>Ploceus philippinus</i>	Baya Weaver	Schedule IV
13.	<i>Coracina melanoptera</i>	Black Headed Cuckoo Shrike	Schedule IV
14.	<i>Merops orientalis</i>	Small Bee Eater	Schedule IV
15.	<i>Cinnyris asiaticus</i>	Purple sunbird	Schedule IV
16.	<i>Nycticorax nycticorax</i>	Night Heron	Schedule IV
17.	<i>Apus affinis</i>	House Swift	Schedule IV
18.	<i>Cuculus micropterus</i>	Indian Cuckoo	Schedule IV
19.	<i>Passer domesticus</i>	House sparrow	Schedule IV
20.	<i>Psittacula eupatria</i>	Alexandrine Parakeet	Schedule IV
21.	<i>Motacilla maderaspatensis</i>	White Browed Wagtail	Schedule IV
22.	<i>Streptopelia chinesis</i>	Spotted Dove	Schedule IV
23.	<i>Dicaeum erythrorhynchus</i>	Tickell's Flowerpecker	Schedule IV
24.	<i>Pycnonotus cafer</i>	Red- Vented Bulbul	Schedule IV
25.	<i>Cypsiurus balasiensis</i>	Asian Palm Swift	Schedule IV
26.	<i>Halcyon smyrnensis</i>	White Throated Kingfisher	Schedule IV
27.	<i>Ardeola grayii</i>	Indian Pond Heron	Schedule IV
28.	<i>Dicrurus macrocercus</i>	Black drongo	Schedule IV
29.	<i>Turdoides affinis</i>	White Headed Babbler	Schedule IV
30.	<i>Ploceus philippines</i>	Weaver bird	Schedule IV
31.	<i>Dicrurus macrocercus</i>	Two-tailed Sparrow	Schedule IV
32.	<i>Dicrurus leucophaeus</i>	Ashy Drongo	Schedule IV
33.	<i>Merops philippinus</i>	Blue-Tailed Bee Eater	Schedule IV
34.	<i>Coracias benghalensis</i>	Indian Roller	Schedule IV
35.	<i>Nectarinia zeylonica</i>	Purple Rumped Sunbird	NL

Reference: Studies on the Abundance and Distribution of Birds in Three Different Habitats of Karur District, South India

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

Table 3.59. List of Reptiles either spotted or reported from the study area.

(*indicates direct observations & Secondary data)

Sl. No	Scientific Name	Common	Schedule list wildlife

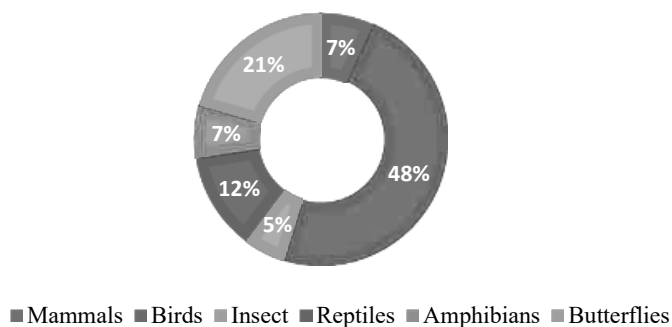
		Name/English Name	Protection act 1972
1.	<i>Calotes versicolor</i>	Oriental garden lizard	NL
2.	<i>Hemidactylus flaviviridis</i>	House lizards	Schedule IV
3.	<i>Naja naja</i>	Indian cobra	Sch II (Part II)
4.	<i>Ahaetulla nasuta</i>	Green vine snake	Schedule IV
5.	<i>Ptyas mucosa</i>	Rat snake	Sch IV (Part II)
6.	<i>Bungarus caeruleus</i>	Common krait	Schedule IV
7.	<i>Mabuya carinatus</i>	Common skink	NL
8.	<i>Vipera russelli</i>	Russell's viper	Sch II (Part II)
9.	<i>Nerodia piscator</i>	Fresh water snake	Sch III (Part II)

Table 3.60. List of Dragonflies and Damselflies spotted or reported from the study area

SI. No	Scientific Name	Common Name	IUCN Conservation Status
1.	<i>Brachythemis contaminata</i>	Ditch jewe	LC
2.	<i>Diplocodes trivialis</i>	Ground skimmer	LC
3.	<i>Trithemis aurora</i>	Crimson marsh glider	LC
4.	<i>Trithemis pallidinervis</i>	Long legged marsh skimmer	-

Table.3.61. List of Butterflies reported from the study area
(*indicates direct observations & Secondary data)

SI. No	Scientific Name	Common Name	Schedule
1.	<i>Danaus chrysippuschrysippus</i>	Plain Tiger	Schedule IV
2.	<i>Danaus genutia</i>	Striped Tiger	Schedule IV
3.	<i>Junoniahierta</i>	Yellow Pansy	Schedule IV
4.	<i>Tirumala limniacae</i>	Blue Tiger	Schedule IV
5.	<i>Papiliodemoleusdemoleus</i>	Lime Butterfly	Schedule IV
6.	<i>Phalanta phalantha</i>	Common leopard	Schedule IV
7.	<i>Papiliopolytespolytes</i>	Common Mormon	Schedule IV
8.	<i>Eurema hecabe</i>	Common grass yellow	Schedule IV
9.	<i>Zizeeria knysna</i>	Dark Crass Blue	Schedule IV
10.	<i>Parantica aglea</i>	Glassy Tiger	Schedule IV
11.	<i>Euploea core</i>	Common Crow	Schedule IV
12.	<i>Junonialemonias</i>	Lemon Pansy	Schedule IV
13.	<i>Hypolimnasmisippus</i>	Danaid Eggfly	Schedule IV
14.	<i>Acraea terpsicore</i>	Tawny Coster	Schedule IV
15.	<i>Euchrysopsnejus</i>	Gram Blue	LC

Distribution Of Faunal Communities**Fig No. 3.36: Diagram showing % distribution of faunal life forms**

The study area is marked with moderate population of flora and fauna. With reference to the Wildlife Protection Act 1972 total number of wildlife tabulated in this study can be characterized as given in the Table 3.62.

Table No: 3.62. Characterization of Fauna in the Study Area (As Per W.P Act, 1972)

S.No	Schedule of Wildlife Protection Act 1972	No. of species	Remark
1.	Schedule I	0	-
2.	Schedule II	4	-
3.	Schedule III	1	-
4.	Schedule IV	54	-
5.	Schedule V	0	-
6.	Schedule VI	0	-

Fig No: 3.37. Schedule of Wildlife Protection Act 1972

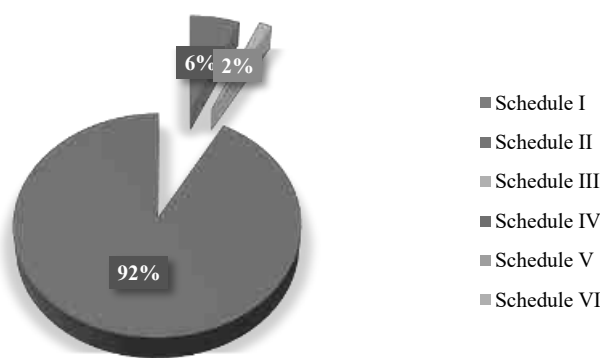


Table 3.63: Description of Flora & Fauna

S.No	Type of Species	Name	Local Name
Flora			
1.	Endangered species	None	None
2.	Threatened species	None	None
3.	Near Threatened species	None	None
4.	Vulnerable species	None	None
Fauna			
5.	Endangered species	None	None
6.	Threatened species	None	None
7.	Near Threatened species	None	None
8.	Vulnerable species	None	None
9.	Migratory Corridors & Flight Paths	No corridors & flight paths	-
10.	Breeding & Spawning grounds	None	-

A comprehensive Central Legislation namely Wild Life (Protection) Act was enforced in 1972 to provide protection to wild animals. Schedule-I of this act contains the list of rare and endangered species, which are completely protected throughout the country. The list of animals and their conservation status as per Wild Life Act (1972) presented in Table 3.63 are the species recorded/reported from the study area, out of which 4 species belongs to schedule-II, 1 species belongs to schedule-III, no species belongs to schedule-V and rest of the species belongs to schedule-IV of Wildlife protection Act, 1972.

3.7. Aquatic Ecology

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Multi-Coloured Granite Quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. Kaveri River is located about 7.5km on the north side. Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. Typha angustata can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, Eichhornia crassipes has taken its roots and covers the entire water surface by its sprawl and invasion.

3.7.1. Objectives of Aquatic Studies

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

3.7.2. Macrophytes

The macrophytes observed within the study area are tabulated in Table 3.64.

Table No.3.64. Description of Macrophytes

S.No	Scientific name	Common Name	IUCN Red List of Threatened Species
1.	<i>Cyperus exaltatus</i>	Tall Flat Sedge	LC
2.	<i>Carex cruciata</i>	Cross Grass	NA
3.	<i>Aponogeton natans</i>	Floating laceplant	NA
4.	<i>Hydrilla verticillata</i>	Waterhymes	LC
5.	<i>Eichornia crassipes</i>	Water hyacinth	NA
6.	<i>Chrysopogon aciculatus</i>	Golden false beard grass	NA
7.	<i>Marsilea quadrifolia</i>	Water clover	LC

3.7.3. Aquatic Faunal Diversity

Amphibian species like the common Indian Burrowing frog, and Indian Pond Frog, Indian Toad, Indian Bull Frog, Common Tree Frog were sighted near the water bodies located in the study area.

Table no. 3.65. Amphibians Observed/Recorded from the Study Area

Sl. No	Scientific Name	Common Name	IUCN Red List data
1.	<i>Duttaphrynus melanostictus</i>	Common Indian Toad	IV
2.	<i>Rana tiger</i>	Common Frog	NA
3.	<i>Euphlyctis hexadactylus</i>	Indian Pond Frog	LC
4.	<i>Hoplobatrachus tigerinus</i>	Indian Bull Frog	IV/LC
5.	<i>Polypedates maculatus</i>	Common Tree Frog	LC

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

3.7.4. Fishes

Fish is commonly found in all types of natural water bodies and very common source of food in Eastern South India. The local fishermen were enquired and also the secondary resources were reviewed to collect information on the fishes found in the study area. Few common species are; Catla (Catla catla), Dwarf panchax (Aplocheilichthys parvus), Tank goby (Glossogobius giuris), Ticto barb (Pethia ticto), Greenstripe barb (Puntius vittatus), Roho (Labeo rohita) and Pool barb (Puntius sophore) etc., Species of fish reported in the study area are given in table 3.66.

Table 3.66. Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

S.No	Scientific name	Common name	Family
1.	<i>Pethia ticto</i>	Ticto barb	Cyprinidae
2.	<i>Glossogobius giuris</i>	Tank goby	Gobiidae
3.	<i>Labeo rohita</i>	Rohu	Cyprinidae
4.	<i>Siluriformes</i>	Catfish	Diplomystidae

5.	<i>Aplocheilus parvus</i>	Dwarf panchax	Aplocheilidae
6.	<i>Puntius vittatus</i>	Greenstripe barb	Cyprininae
7.	<i>Puntius sophore</i>	Pool barb	Cyprinidae
8.	<i>Catla Catla</i>	Catla	Cyprinidae

3.7.5. Findings/Results

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

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

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

Breeding and spawning grounds

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

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

There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise. There is no endangered, endemic and RET Species. There is no Schedule I species in study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] The proposed project is not going to have any direct or indirect adverse impact on the species mentioned above.

3.7. Conclusion

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

3.8 Socio Economic Environment

There is no habitation/ village within the radius of 10km from the project area. 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.

3.8.1 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.

3.8.2 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

3.8.3 Administrative Setup of Karur District

Karur district includes 2 Revenue Divisions, 7 Taluks. There are 203 Revenue Villages, 157 Village panchayats in this district. In 2011, Karur had population of 1,064,493 of which male and female were 528,184 and 536,309 respectively. In 2001 census, Karur had a population of 935,686 of which males were 465,538 and remaining 470,148 were females.

3.8.4 Study area

Veeriyapalayam is a large village located in Krishnarayapuram Taluka of Karur district, Tamil Nadu with total 908 families residing. The Veeriyapalayam village has population of 3530 of which 1764 are males while 1766 are females as per Population Census 2011.

☞ Child Sex Ratio

In Veeriyapalayam village population of children with age 0-6 is 419 which makes up 11.87 % of total population of village. Average Sex Ratio of Veeriyapalayam village is 1001 which is higher than Tamil Nadu state average of 996. Child Sex Ratio for the Veeriyapalayam as per census is 905, lower than Tamil Nadu average of 943.

☞ Literacy rate

Veeriyapalayam village has lower literacy rate compared to Tamil Nadu. In 2011, literacy rate of Veeriyapalayam village was 58.66 % compared to 80.09 % of Tamil Nadu. In Veeriyapalayam Male literacy stands at 70.40 % while female literacy rate was 47.10 %.

☞ Caste Factor

Veeriyapalayam village of Karur has substantial population of Schedule Caste. Schedule Caste (SC) constitutes 28.07 % while Schedule Tribe (ST) were 0.03 % of total population in Veeriyapalayam village.

☞ Work Profile

In Veeriyapalayam village out of total population, 2207 were engaged in work activities. 99.18 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 0.82 % were involved in Marginal activity providing livelihood for less than 6 months. Of 2207 workers engaged in Main Work, 399 were cultivators (owner or co-owner) while 1206 were Agricultural labourer.

Table 3.38: Population Characteristics - Veeriyapalayam Village, Krishnarayapuram Taluk, Karur District

Particulars	Total	Male	Female
Total No. of Houses	908	-	-
Population	3,530	1,764	1,766
Child (0-6)	419	220	199
Schedule Caste	991	492	499
Schedule Tribe	1	1	0
Literacy	58.66 %	70.40 %	47.10 %
Total Workers	2,207	1,135	1,072
Main Worker	2,189	-	-
Marginal Worker	18	13	5

Source: <https://www.census2011.co.in/data/village/635599-veeriyapalayam-tamil-nadu.html>

Table 3.39: Population Characteristics Around 10km Radius

Total No of Villages	No. of Households	Total Population	Population Male	Population female	SC Population Male	SC Population female	Total Literates Male	Total Literates Female	Total Illiterates Male	Total Illiterates Female
18	24517	93881	46905	46976	10079	10435	33766	26033	13139	20943

Table 3.40: Occupational Characteristics Around 10km Radius

Total Worker Population Male	Total Worker Population Female	Main Working Population Male	Main Working Population Female	Main Cultivator Population Male	Main Cultivator Population Female	Main Agricultural Labourers Population Male	Main Agricultural Labourers Population Female	Non-Working Population Male	Non-Working Population Female
28627	20990	27404	19559	5170	2850	13558	13658	18278	25986

Source: census 2011, Karur District

3.8.5 Karur Population 2011 – 2031

The last census of Karur was done in 2011 and next census of 2021 has been postponed or cancelled. But we can do projection of future Karur 2031 Population on the basis likely Population Growth Rate.

Table 3.41: Population projection

Year	Projected Population (Estimation)
2011	10.64 Lakhs
2021	11.89 Lakhs
2022	12.01 Lakhs
2023	12.11 Lakhs
2024	12.20 Lakhs
2025	12.27 Lakhs
2026	12.34 Lakhs
2027	12.39 Lakhs
2028	12.44 Lakhs
2029	12.48 Lakhs
2030	12.51 Lakhs
2031	12.54 Lakhs

Source: <https://www.census2011.co.in/census/district/35-karur.html>

Table 3.42: Population Characteristics Core and Buffer zone around 10km Radius

Sno	Village Name	TRU	No HH	TOT P	TOT M	TOT F	P 06	M 06	F 06	P SC	M SC	F SC	P ST	P LIT	M LIT	F LIT	P ILL	M ILL	F ILL
1	Thirukkampuliyur	Rural	1708	6487	3246	3241	670	349	321	1044	506	538	0	4343	2443	1900	2144	803	1341
2	Sithalavai	Rural	1004	3706	1859	1847	395	202	193	779	397	382	0	2212	1298	914	1494	561	933
3	Kammanallur	Rural	576	2121	1025	1096	183	96	87	846	400	446	0	1539	815	724	582	210	372
4	Mahadhanapuram(North)	Rural	1409	5396	2670	2726	511	255	256	2087	1010	1077	0	3823	2085	1738	1573	585	988
5	Chinthalavadi	Rural	2708	10325	5252	5073	1099	592	507	2032	1014	1018	0	7237	4058	3179	3088	1194	1894
6	Pillapalayam	Rural	1206	4671	2363	2308	473	245	228	2029	987	1042	1	3363	1849	1514	1308	514	794
7	Kallapalli	Rural	1576	6043	3069	2974	637	336	301	870	431	439	10	4394	2462	1932	1649	607	1042
8	Karuppathur	Rural	1558	5968	3038	2930	624	315	309	1059	523	536	0	3595	2117	1478	2373	921	1452
9	Vayalur	Rural	1041	3899	1957	1942	444	222	222	825	416	409	0	2152	1297	855	1747	660	1087
10	Veeriyapalayam	Rural	908	3530	1764	1766	419	220	199	991	492	499	1	1825	1087	738	1705	677	1028
11	Muthurengampatti	Rural	350	1409	700	709	175	92	83	261	136	125	0	721	417	304	688	283	405
12	Panjapatti	Rural	1093	4278	2096	2182	461	233	228	1082	537	545	1	2710	1509	1201	1568	587	981
13	Pothuravuthanpatti	Rural	1233	5263	2592	2671	675	348	327	601	302	299	0	2676	1573	1103	2587	1019	1568
14	Pappakkapatti	Rural	1303	5354	2648	2706	662	361	301	842	406	436	0	2623	1510	1113	2731	1138	1593
15	Krishnarayapuram (TP)	Urban	2946	10792	5326	5466	1045	532	513	2255	1097	1158	15	7429	4058	3371	3363	1268	2095
16	P.J. Cholapuram (TP)	Urban	2016	7484	3731	3753	776	406	370	1539	749	790	2	4708	2683	2025	2776	1048	1728
17	Manathattai	Rural	317	1206	584	622	124	59	65	808	400	408	0	759	403	356	447	181	266
18	Sathiyamangalam	Rural	1565	5949	2985	2964	668	331	337	564	276	288	0	3690	2102	1588	2259	883	1376
	Total		24517	93881	46905	46976	10041	5194	4847	20514	10079	10435	30	59799	33766	26033	34082	13139	20943

Source: census 2011

Table 3.43: Occupational Characteristics Core and Buffer zone around 10km Radius

Sn o	Village Name	TOT_WOR K_P	TOT_WOR K_M	TOT_WOR K_F	MAINWOR K_P	MAINWOR K_M	MAINWOR K_F	MAIN_C L_P	MAIN_A L_P	NON_WOR K_P	NON_WOR K_M	NON_WOR K_F
1	Thirukkampuliyur	3668	2037	1631	3637	2023	1614	396	2363	2819	1209	1610
2	Sithalavai	2015	1180	835	2013	1180	833	595	846	1691	679	1012
3	Kammanallur	1224	671	553	1005	580	425	103	663	897	354	543
4	Mahadhanapuram(North)	2587	1595	992	2096	1323	773	134	1325	2809	1075	1734
5	Chinthalavadi	5197	3110	2087	4776	2903	1873	668	2793	5128	2142	2986
6	Pillapalayam	2248	1401	847	2228	1392	836	118	1698	2423	962	1461
7	Kallapalli	2712	1767	945	2665	1748	917	334	1637	3331	1302	2029
8	Karuppathur	3436	1898	1538	3364	1854	1510	616	2357	2532	1140	1392
9	Vayalur	2331	1243	1088	1951	1042	909	364	1208	1568	714	854
10	Veeriyapalayam	2207	1135	1072	2189	1122	1067	399	1206	1323	629	694
11	Muthurengampatti	855	455	400	844	454	390	442	202	554	245	309
12	Panjabatti	2190	1222	968	2157	1208	949	385	1165	2088	874	1214
13	Pothuravuthanpatti	3166	1612	1554	2865	1518	1347	1019	1187	2097	980	1117
14	Pappakapatti	2767	1620	1147	2736	1608	1128	544	1753	2587	1028	1559
15	Krishnarayapuram (TP)	5035	3157	1878	4878	3135	1743	686	2508	5757	2169	3588
16	P.J. Cholaapuram (TP)	4117	2369	1748	4041	2325	1716	723	2139	3367	1362	2005
17	Manathattai	651	353	298	649	352	297	37	527	555	231	324
18	Sathiyamangalam	3211	1802	1409	2869	1637	1232	457	1639	2738	1183	1555
	Total	49617	28627	20990	46963	27404	19559	8020	27216	44264	18278	25986

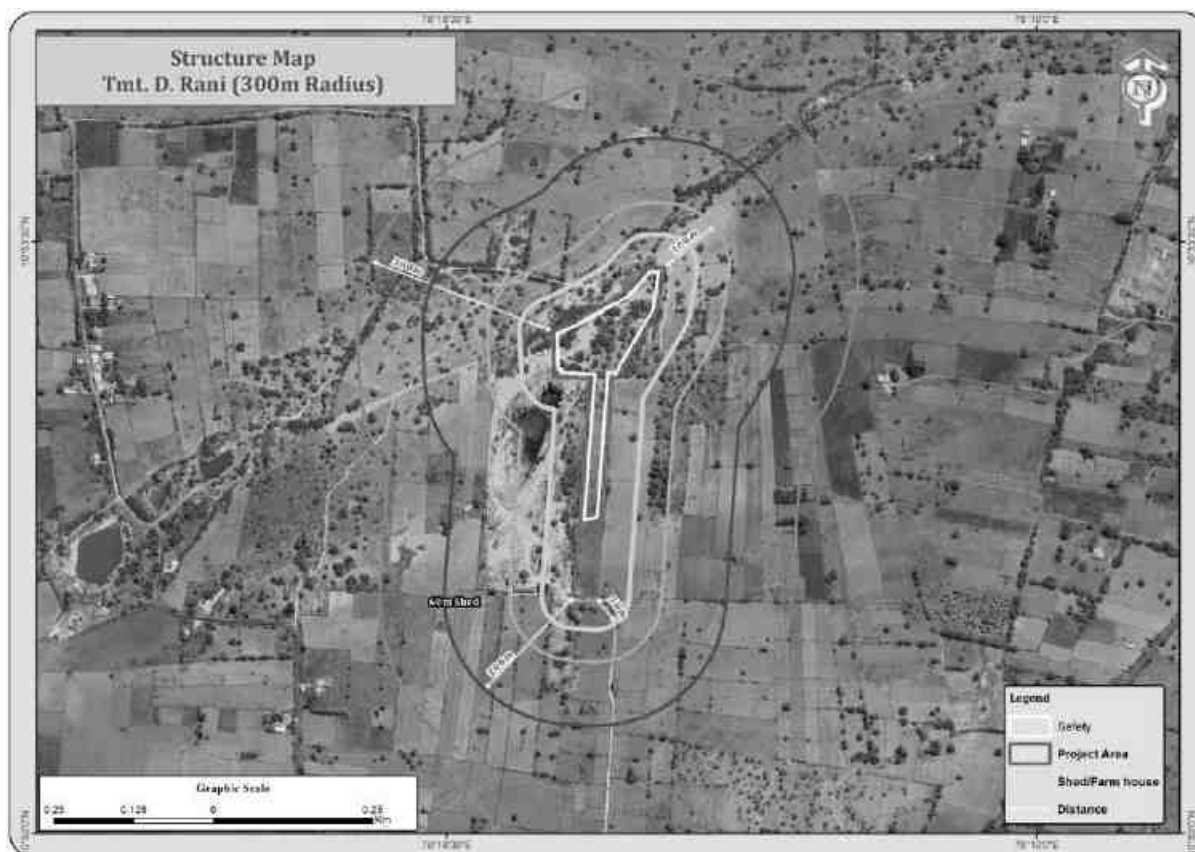
Source: census 2011

3.8.6 Basic Amenities

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

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

All basic amenities Education (higher education, colleges, medical college, transport facilities, railway station, bus station area available in the district headquarters Karur at a distance of 24km –West).



Distance	No of Structures	Structure belongs to owner	Structure not belongs to owner	Type of Structure
0- 100m		No	Yes	60m-Shed-SW
100-200m	Nil	-	-	-
200 – 300m	Nil	-	Yes	-

3.8.7 Interpretation

Based on the data, following inferences could be drawn:

- Total literacy rate in the study area is 64%.
- The study area had average educational facilities. The overall status depicts that the education is limited to primary and middle level.
- Schedule Tribe (ST) were 0.03 % of total population in Veeriyapalayam village and Scheduled Caste forms 22% of the total population of study area.

-
- The Other Population forms 78% of the total population of study area.
 - The study area is well connected by NH/SH/Village Road.
 - The study area not well health facilities of primary level.
 - Considering the above facts, the proposed project will boost the socio-economic development activities in the area and hence will leave positive impact.
 - The study area has mobile connectivity.

3.8.8 Recommendation and Suggestions

The village development plans are made in consultation with the community through Gram Sabha; these appear to address the needs of the community. However, it may be noted that at the implementation stage these plans often are fraught with problem of inadequate funds, lack of proper planning, corruption, vested interests and political agendas. Hence while ascertaining the scope for convergence with the government activities, care must be taken to ascertain realistic possibilities for implementation.

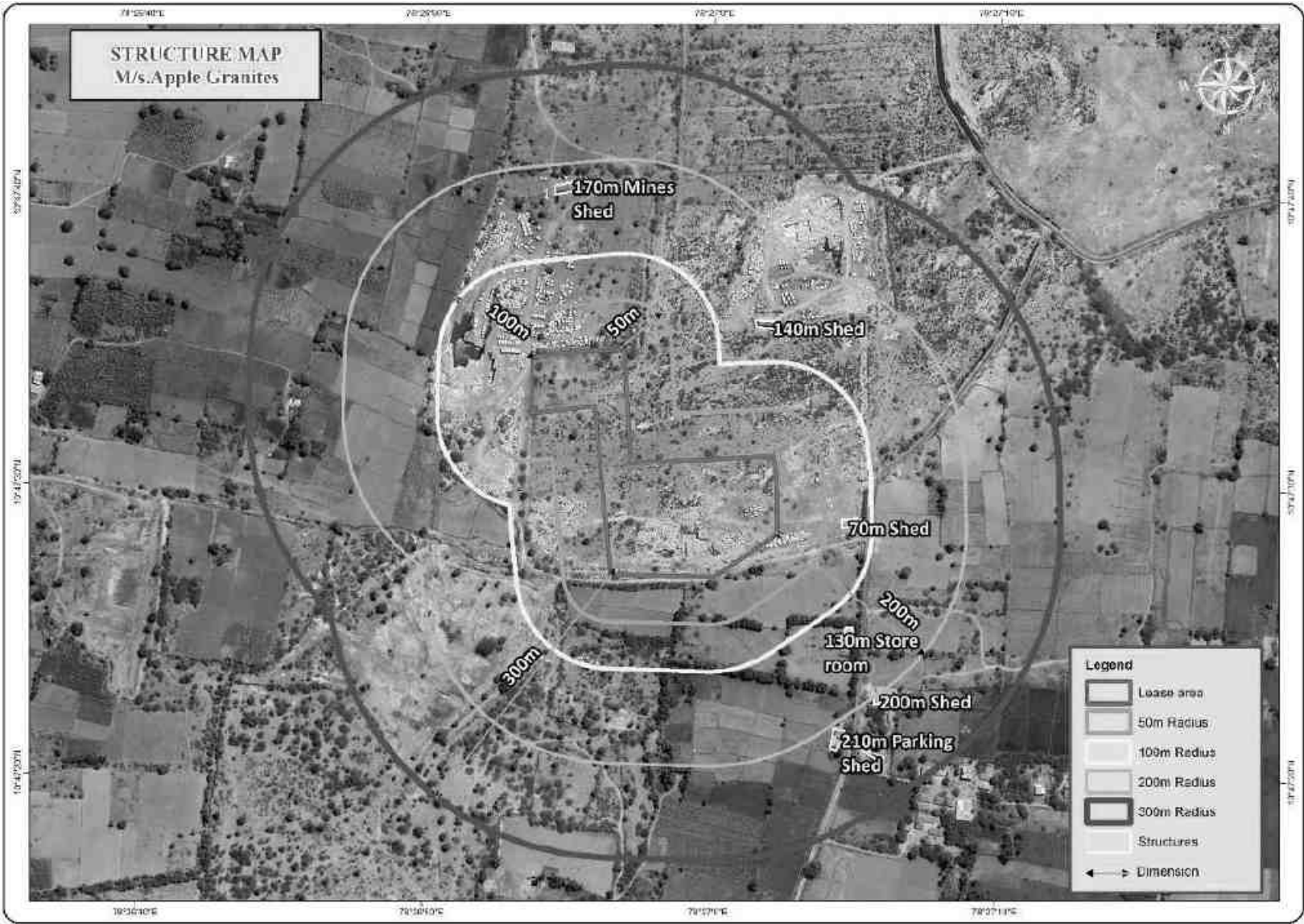
- **Women empowerment**– Home based income generation activities, vocational training programs and common education centre for increasing the literacy rate.
- **Education** – Free uniform, construction of common rooms and library, computer education and physical education, additional schools for girls, furniture and equipment in schools, up-gradation of existing school infrastructure.
- **Agriculture/livestock** – Infrastructure such as agricultural practices, electricity connections, assistance with buying improved tools and equipment, capacity building, supply and/or knowledge of better variety of seeds, pasture land development and trainings on animal husbandry & facility of veterinary doctor.
- **Health** – Improvements in sanitary conditions of villages, assistance with construction of latrines, improvement in drainage system, health camps and awareness campaigns for diseases like Covid-19, malaria, typhoid, tuberculosis, yellow fever and pneumonia. Repairing of PHCs and Anganwadi centers.
- **People with disability** – Establishment of centre for special education, sensitization of the community towards disabled and awareness on Government schemes.
- **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.
- **Connectivity** –Transport connectivity to easiness accessibility to the region.

3.8.9 Conclusion

To evaluate the impacts of proposed granite quarry project on the surrounding area, it is vital to assess the baseline status of the environmental quality in the locality of the site. Hence it can be concluded that the present environment status of the study area will not be affected by the project as Thiru.E.Dhanapal Multi Coloured Granite Quarry will adopt adequate control measures to protect the surrounding environment and will contribute in development of the study areas.

Socio Economic/ demographic status of the study area reveals that area further require improvement in the Economy and Infrastructure Development of the area. Hence it can be concluded that the present baseline environment status of the study area will not be affected by the proposed project. 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.

3.8.10 Structure Studies 0 to 300m



Enumeration of Structures from 0 - 300m Radius						
Structure Numbers	Distance & Direction from the project site	Structure Details and Usage Purpose	Type of Structure Structures (Kutch/ Brick/ Cement/ RCC/ Framed Structures)	No. of Occupants	Structure belongs to owner (Yes/No)	Remarks
1	70m - E	Shed	Sheet Structure	-	Yes	To store Mine machinery parts – No stay
2	130m - SE	Store Room	Sheet Structure	-	No	To store coconuts and agriculture goods – No Stay
3	140m - NE	Shed	Sheet Structure	-	Yes	To store Mine machinery parts – No stay
4	170m - N	Mines Shed	Brick & Sheet structure	-	No	To store Mine machinery parts
5	200m - SE	Shed	Brick & Sheet structure	-	No	To store agriculture goods
6	210 - SE	Parking Shed	Sheet Structure		No	To Park the Vehicle

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.

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

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

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

4.1 Land Environment

4.1.1 Anticipated Impact

The main anticipated impact on the Land Environment due to quarrying operation is change in Landscape, change in Land – use Pattern. Tmt.D.Rani Multi Colour Granite Quarry area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016) including proposed quarry. The proposed project area is proponent own patta land, no forest land involved in this lease applied area. The ultimate depth of the proposed project is quarrying is varying from 30m below the ground level and will not intersect the ground water table. The project is site specific.

4.1.2 Mitigation measures

Due to the quarrying activities in the project the land use pattern will be altered. In order to minimize the adverse effects, the following control measures will be implemented:

- In the Opencast Method of Mining the degradation of land is insignificant, after completion of the quarrying operation the land, the land will be partially backfilled with dumped material and part of the area will be allowed to collect rainwater which will act as temporary reservoir, this Granite waste, overburden not produce any toxic effluents in the form of solid, liquid or gas
- Top Soil will be removed and utilized for greenbelt development in the safety barrier.
- The periphery of the mining lease area will be converted to a greenbelt to prevent Noise and sound propagation to the nearby lands.
- Construction of garland drains all around the quarry pit and construction of check dam at strategic location in lower elevations to prevent soil erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Barbed wire fencing will be re constructed at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.1.2 Soil Environment

4.1.1.3 Impact on Soil Environment

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

4.1.1.4 Mitigation measures for Soil Conservation

- The top soil will be preserved in the safety barrier and kept in moisture condition. The preserved top soil will be utilized for greenbelt development in the safety barrier and utilized for plantation on the top bench.
- Garland drains will be constructed around the project area to arrest any soil from the quarry area being carried away by the rainwater. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches.

4.1.1.5 Waste Dump Management

4.1.1.6 Anticipated Impact

Solid waste is in the form of Granite waste which does not produce any toxic effluent during dumping. Garland drains will be constructed around the waste dump to prevent the rainwater entering into the quarrying pit besides this garland drain will also help in facilitating the rainwater to the natural gradient.

There will be generation of topsoil is about 11,482m³ up to depth for 1m during this Scheme period, the same will be preserved all along the safety barrier and utilized for construction of bund and afforestation purpose. Granite waste forms nearly 60% of ROM and the total quantity of granite waste in the five years will be around 52,580m³ (Granite waste 22,440m³ + Weathered rock 30,140m³) the same will be dumped on the Southern side with dimensions of (L)216m X (W)19m X (H)12.8m.

4.1.1.7 Mitigation measures

- Retaining wall with weep hole, Garland drain will be provided around the dump areas.
- Proper angle of repose to be maintained.
- Grasses to be done over the dump areas for stability.
- Soil erosion may also be accelerated on areas where the overburden from the ore excavation operation will be dumped. As there is neither a toxic effluent nor solid waste from the mine, quality of soil is not expected to be adversely affected.

4.2 Water Environment (Impact & Mitigation Measures)

4.2.1 Anticipated Impact on Surface and ground water

The impact due to mining on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process. For the quarrying activity water will be utilized for wire saw cutting (which will be recycled), water sprinkling on haul roads and greenbelt development encountered at the depth between 85m. The maximum depth proposed project is 38m BGL for the entire period. 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.

4.2.2 Mitigation measures

The following mitigation measures are suggested for water management

The quarrying operation will be carried out well above the water table. There is no intersection of surface water bodies (Streams, Canal, Odai etc.,) in the proposed project area. During rainy season rain water will be collected in the quarry pit and later used for greenbelt development and for the water sprinkling in the haul roads. There is no proposal for discharging of quarry pit water outside the project area.

There is no proposal Granite processing or workshop within the project area thus there is no effluent anticipated in the mine.

Detail of water requirements in KLD as given below:

Table 4.1 Water Requirement for the Project

Purpose	Quantity	Source
Domestic & Drinking purpose	0.5KLD	From Existing, bore wells and drinking water will be sourced from Approved Water vendors.
Dust Suppression	1.0KLD	From Existing bore wells from nearby area
Green Belt	1.0KLD	From Existing bore wells from nearby area
Total	2.5KLD	

Source: Prefeasibility report

- With respect to Turbidity, Total Iron and Silica, Pre-treatment methods like settling or filtration, Water Softening (Ion Exchange) shall be adopted to make it fit for drinking purposes. But it can be used for other domestic purposes
- Rainwater will be collected in sump in the mining pit 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 onwards 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
- Construction of garland drains to divert surface run-off into the quarrying area
- Retaining walls with weep hole will be constructed around the dump to arrest silt wash off
- Periodic analysis of quarry pit water and ground water quality in nearby villages
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits
- Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes
- De-silting will be carried out before and immediately after the monsoon season
- Regular monitoring and analysing the quality of water in open well, bore wells and surface water

4.3 Air Environment (Impact & Mitigation Measures)

The air borne particulate matter is the main air pollutant in this opencast mining. The mining operation will be carried out by Diamond wire saw cutting, jackhammer drilling (35mm dia) and Hydraulic Excavators will be utilized for handling of Granite waste.

4.3.1. Anticipated Impact

The air borne particulate matter generated by quarrying operation, 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 Granite and overburden, 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 proposed production (ROM) on air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

4.3.2 AERMOD Frame work of Computation & 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, meet the regulatory standards and to apply mitigation measures to reduce impact caused by quarrying activities. PM₁₀ was 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.

4.3.2.1 Emission Rate

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 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 4-2.

Table 4.2: Estimated Emission Rate for Quarry

Emission Estimation for quarry P1				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.030172910	g/s
	Blasting	Point Source	0.000006049	g/s
	Mineral Loading	Point Source	0.029446751	g/s
	Haul Road	Line Source	0.002482416	g/s/m
	Overall Mine	Area Source	0.058852105	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	1.9045E-05	g/s
Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000001208	g/s

Source: Emission calculator

4.3.2.2 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. PM₁₀ was the major pollutant occurred during quarrying activities. The prediction included the impact of Excavation, Drilling, Blasting, 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.

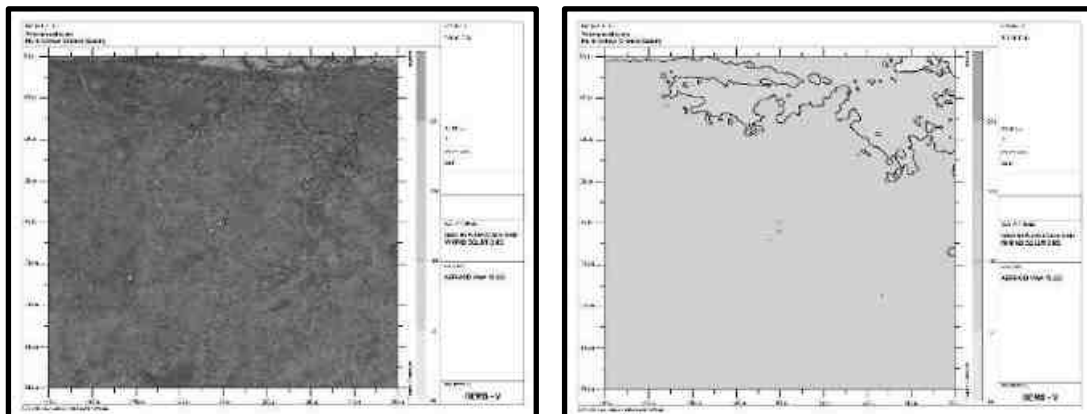
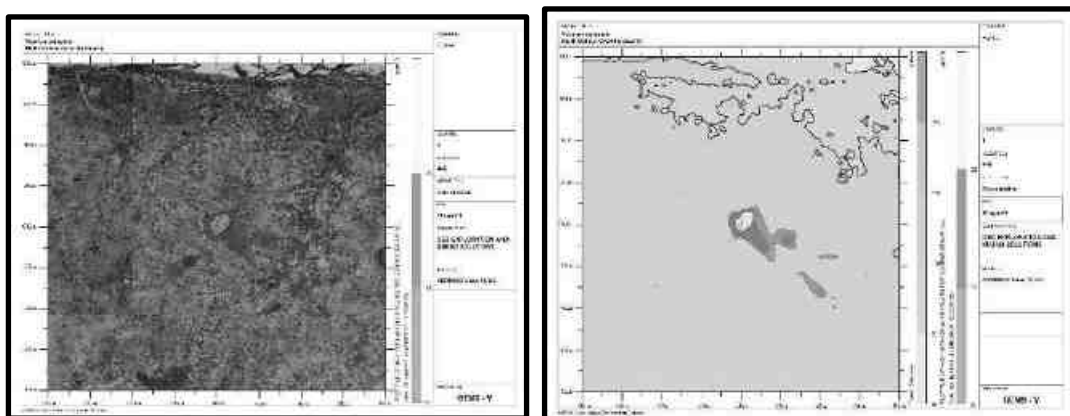
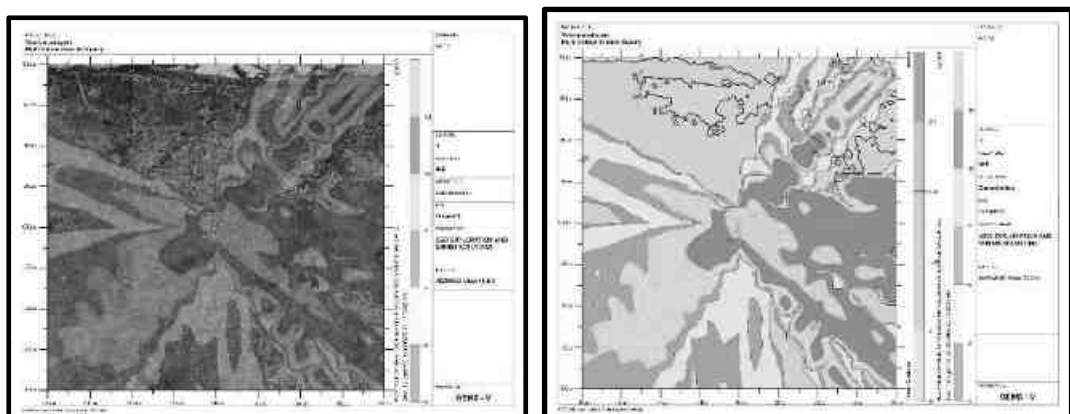
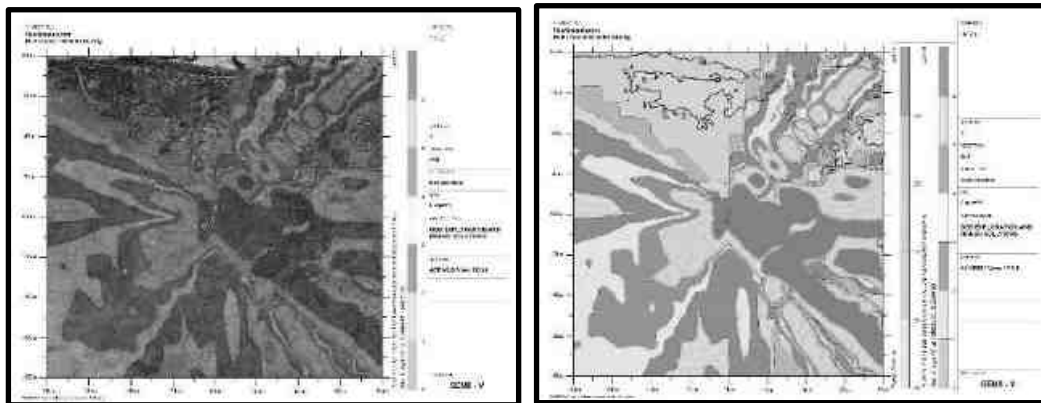
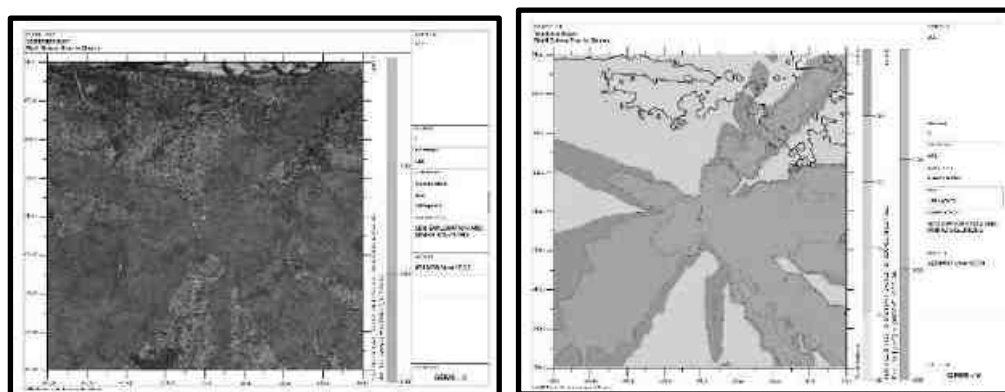
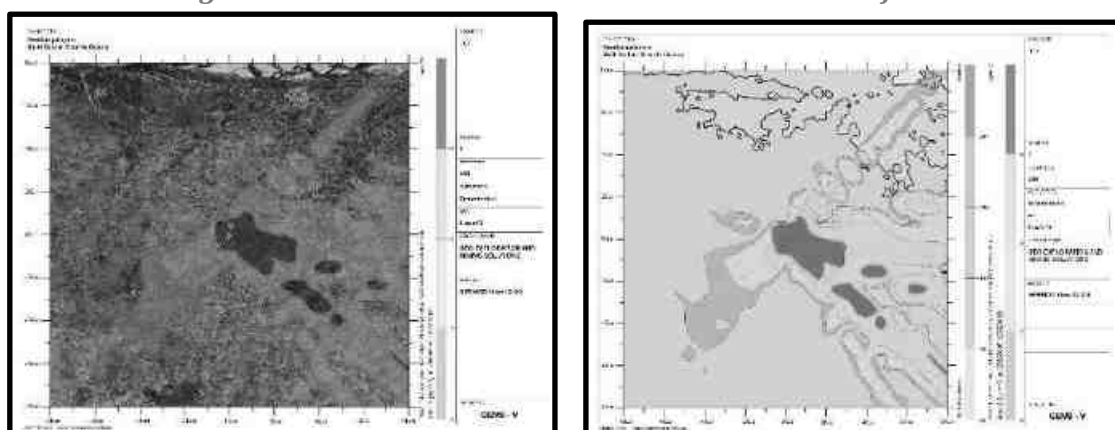
Figure 4.1: AERMOD Terrain Ma*Figure 4.2: Predicted Incremental Concentration of Fugitive Dust**Figure 4.3: Predicted Incremental Concentration of PM₁₀*

Figure No 4.4: Predicted Incremental Concentration Of PM_{2.5}*Figure No 4.5: Predicted Incremental Concentration Of SO₂**Figure No 4.6: Predicted Incremental Concentration of NO_x*

4.3.2.4 Model Results

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

Table 4.3: Incremental & Resultant GLC of Fugitive Dust

Table 4.4: 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) (5+6)
AAQ1	10°53'12.01"N 78°18'36.71"E	-62	-415	43.5	13.83	57.33
AAQ2	10°53'28.44"N 78°18'40.71"E	56	91	43.8	13.65	57.45
AAQ3	10°52'59.75"N 78°18'22.59"E	-497	-800	43.9	12.30	56.2
AAQ4	10°51'23.38"N 78°20'25.82"E	4723	-3465	43.7	13.21	56.91
AAQ5	10°55'11.79"N 78°17'7.82"E	-2953	1540	43.3	6.00	49.3
AAQ6	10°54'14.48"N 78°20'44.50"E	3852	1521	43.9	0	43.9
AAQ7	10°51'48.10"N 78°16'19.43"E	-4273	-3020	43.9	9.13	53.03

Table 4.5: 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) (5+6)
AAQ1	10°53'12.01"N 78°18'36.71"E	-62	-415	22.5	6.91	29.41
AAQ2	10°53'28.44"N 78°18'40.71"E	56	91	22.5	6.74	29.24
AAQ3	10°52'59.75"N 78°18'22.59"E	-497	-800	22.7	6.19	28.89
AAQ4	10°51'23.38"N 78°20'25.82"E	4723	-3465	22.4	6.42	28.82
AAQ5	10°55'11.79"N 78°17'7.82"E	-2953	1540	22.0	3.80	25.8
AAQ6	10°54'14.48"N 78°20'44.50"E	3852	1521	23.0	0	23
AAQ7	10°51'48.10"N 78°16'19.43"E	-4273	-3020	22.4	4.50	26.9

Table 4.6: Incremental & Resultant GLC OF SO₂

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO ₂ (µg/m ³)	Incremental value of SO ₂ due to mining (µg/m ³)	Total SO ₂ (µg/m ³) (5+6)
AAQ1	10°53'12.01"N 78°18'36.71"E	-62	-415	5.3	1.69	6.99
AAQ2	10°53'28.44"N 78°18'40.71"E	56	91	5.5	1.66	7.16
AAQ3	10°52'59.75"N 78°18'22.59"E	-497	-800	5.5	1.60	7.1
AAQ4	10°51'23.38"N 78°20'25.82"E	4723	-3465	5.7	1.63	7.33
AAQ5	10°55'11.79"N 78°17'7.82"E	-2953	1540	5.4	1.00	6.4
AAQ6	10°54'14.48"N 78°20'44.50"E	3852	1521	5.4	0	5.4
AAQ7	10°51'48.10"N 78°16'19.43"E	-4273	-3020	5.8	1.36	7.16

Table 4.7: Incremental & Resultant GLC OF NO_x

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NO _x (µg/m ³)	Incremental value of NO _x due to mining (µg/m ³)	Total NO _x (µg/m ³) (5+6)
AAQ1	10°53'12.01"N 78°18'36.71"E	-62	-415	20.7	8.62	29.32
AAQ2	10°53'28.44"N 78°18'40.71"E	56	91	21.1	8.23	29.33
AAQ3	10°52'59.75"N 78°18'22.59"E	-497	-800	21.2	6.50	27.7
AAQ4	10°51'23.38"N 78°20'25.82"E	4723	-3465	21.4	7.29	28.69
AAQ5	10°55'11.79"N 78°17'7.82"E	-2953	1540	20.7	0	20.7

AAQ6	10°54'14.48"N 78°20'44.50"E	3852	1521	21.4	0	21.4
AAQ7	10°51'48.10"N 78°16'19.43"E	-4273	-3020	21.0	0	21

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, 60, 80 & 80 $\mu\text{g}/\text{m}^3$ for PM_{10} , $\text{PM}_{2.5}$, SO_2 & NO_x respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.3. Mitigation Measures

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

Advantages of Wet Drilling:

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

Blasting

- Blasting will be carried out only to remove the overburden and weathered portion
- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- 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

Haul Road & Transportation –

- Water will be sprinkled on haul roads, Loading Points 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.
- 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 road 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 area

Occupational Health –

- Dust mask will be provided to the workers and their use will be strictly monitored
- Annual medical check-ups, 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 (Occasionally) 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 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.

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1,2}$$

Where:

L_{p1} & L_{p2} 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.

$$L_{p \text{ total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

4.4.1 Anticipated Impact

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

- Source data
- Receptor data
- Attenuation factor

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

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 4.8: Predicted Noise Incremental Values

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	57.9	55.5	55.5	54.47	54.3	54.7	55.3
Incremental Value dB(A)	54.08	51.16	31.16	25.45	26.66	30.56	25.29
Total Predicted Noise level dB(A)	59.41	56.86	55.52	54.48	54.31	54.72	55.30
NAAQ Standards	Industrial Day Time- 75 dB (A) & Night Time- 70 dB (A) Residential Day Time- 55 dB (A) & Night Time- 45 dB (A)						

The incremental noise level is found within the range of 54.08 dB (A) in Core Zone and 24.54- 51.16dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance 33.3 involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations are within permissible limits of Industrial area (core zone) & Residential area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

4.4.2 Mitigation measures for Control of Noise

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 are utilized for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will reduce noise;
- 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 will be developed around the project areas 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 mining activities in the project area 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 proposed mine is moving of Heavy Earth Moving Machineries vibration due to blasting is very minimal since the blasting will not carried out frequently in this type of Granite quarry operation. 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 project area is located 550m South West. The ground vibrations due to the blasting in proposed mine are calculated using the empirical equation.

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

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

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

R = distance from charge (m)

TABLE 4.9: PREDICTED PPV VALUES DUE TO BLASTING

Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
3	670	0.036

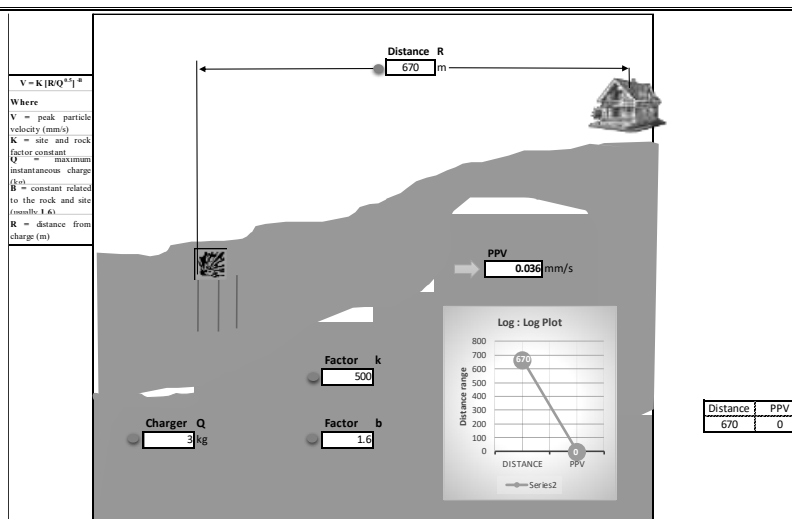


Figure No 4.7: Ground Vibration Prediction

From the above graph, the charge per blast of 3kg 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. It should be ensured that the explosives used for blasting at one blast should not exceed more than 100kg at any point of time. 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 Mitigation measures for Control of Vibration

- The blasting operations in the mine are proposed to be carried out by jackhammer drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system should be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting should 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 shall 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.

4.5 Biological Environment

Mining activities generally result in deforestation, land degradation, and water, air, and noise pollution which directly or indirectly affect the faunal and floral status of the mine area. However, the occurrence and magnitude of these impacts are entirely dependent upon the project location, mode of operation, and technology involved. Existing roads will be used; new roads will not be constructed to reduce the impact on flora. Wildlife is not commonly found in the lease area and its immediate environments because of the lack of vegetal cover and surface water.

4.5.1. Anticipated Impact on Flora

- None of the plants will be cut during the operational phase of the mine.
- There shall be negligible air emissions or effluents from the project site. During the loading of the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.
- Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence, there will be no effect on the flora of the region.

4.5.1.1. Mitigation Measures

The project site should have land to develop a greenbelt in and around the limits of the mine, along roads, and another vacant area. The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. Although the project will not lead to any tree cutting, it is proposed to improve the greenery of the locality through plantation services. To avoid dust emissions, the mined materials will be covered with tarpaulin during transportation.

4.5.1.2. Selection of Plant Species for Green Belt Development

The selection of plant species for the green belt development depends on various factors such as climate, elevation, and soil. The plants should exhibit the following desirable characteristics in order to be selected for plantation.

- Native plant species will be preferred.
- The species should be wind-firm and deep-rooted.
- The species should form a dense canopy.
- Fast-growing plants will be planted
- Species tolerance to air pollution like SO₂ and NO₂ should be preferred.
- Plants having large leaf area index will be considered
- Soil improving plants (Nitrogen fixing rapidly decomposable leaf litter).
- Attractive appearance with good flowering and fruit-bearing.
- Birds and insects attract tree species.
- Roadsides will be planted with local vegetation.

Table No 4.1. List of plant species proposed for Greenbelt development

S. No	Scientific name	Tamil Name
1	<i>Aegle marmelos</i>	Vilva Maram
2	<i>Albizia lebbeck</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
7	<i>Toona ciliata</i>	Santhana Vembu
8	<i>Ficus amplissima</i>	KallItchi
9	<i>Borassus flabellifer</i>	Panai-maram
Species suitable for abatement of noise and dust pollution		
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

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

4.5.2. Anticipated Impact on Fauna

- No rare, endemic & endangered species are reported in the buffer zone. However, during the course of mining, the management will practice the scientific method of mining with a proper Environmental Management Plan including pollution control measures especially for air and noise, to avoid any adverse impact on the surrounding wildlife.
- Fencing around the mine lease area to restrict the entry of stray animals.
- Green belt development will be carried out which will help in minimizing adverse impact on the flora found in the area.

4.5.2.1. Mitigation Measures

- A suitable plan for the conservation of Schedule-I Species have been prepared and the necessary fund for implementation for the same will be made.
- All the preventive measures will be taken for the growth & development of fauna.
- Creating and developing awareness for nature and wildlife in the adjoining villages.
- The workers shall be trained to not harm any wildlife, should it come near the project site. No work shall be carried out after 6.00 pm.
- Topsoil has a large number of seeds of native plant species in the mining area.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment for the flora and fauna in consultation with Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.

4.5.3. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Multi-Colour Granite 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 Chapter 3, clause No 3.7. Aquatic biodiversity is observed in the study area.

4.5.4. Impacts on Bird Fauna:

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

4.5.5. Impacts on wildlife

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

4.5.6. Impact Assessment on Biological Environment

This chapter highlights the various impacts on ecology and biodiversity due to mining activity. The major adverse impacts due to pre-mining and mining phases are loss of habitat, biodiversity, rare flora and fauna, fisheries and other aquatic life, migration of wildlife, and overall disruption of the ecology of the area. During the post-mining phase after land restoration, ecology may effectively improve. A detail of impact and assessments was mentioned in Table No.4.2.

4.5.6.1. Anticipated Environmental Impacts and Mitigation Measures of Veeriyampalayam Village, Multi-Colour Granite Quarry, Karur District, Tamil Nadu.

Details of anticipated issues for the next operation period were summarized with possible impacts and mitigation measures to meet the problem (Table No.4.2.).

Table No: 4.2. Anticipated impact of Ecology and Biodiversity in Veeriyampalayam Village Multi-Colour Granite Quarry

S. 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)	The site possesses Common floral (not tree) species. Clearance of these species will not result in loss of flora.	Less severe	No immediate action is required. However, a Greenbelt /plantation will be developed on the project site and on the periphery of the project boundary,
		Site specific loss of associated faunal diversity (Partial impact)	The site supports only common species, which use a wide variety of habitats of the buffer zone reserve		

			forest area. So, there is no threat of Faunal diversity		which will improve the floral and faunal diversity of the project area.
		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 the generation of dust (Particulate matter) due to haul roads and emission of Sulphur Dioxide, Nitrogen Dioxide, Carbon monoxide, etc.	Impact on Surrounding agriculture and associated fauna due to deposition of dust and emission of CO. (Indirect impact)	Impact is less as the agricultural land is far from the core area.	Less severe	All vehicles will be certified for appropriate Emission levels. More plantations have been suggested Upgrade the vehicles with alternative fuels such biodiesel, methanol, and biofuel around the mining area.

Table 4.13: Greenbelt development plan

Plantation Details	1 st Year
No. of plants	1500
Yearly %	100 %

Within the safety barrier can plant 1000 Nos of trees in two rows with 3m spacing interval
 Remaining 500 Nos of trees proposed to plant on the Village roads.

Table 4.14: Preparation of green belt details

Source: Approved Scheme of Mining Plan

ACTIVITY	YEAR					RATE	AMOUNT (Rs.)
	I	II	III	IV	V		
Plantation (In Nos.)	1500	-	-	-	-	@200 Rs Per sapling	Rs.3,00,000/-
Plantation (Safety zone) cost	3,00,000	-	-	-	-		
Fencing (In Mtrs) 1250 Mtrs	3,75,000					@300 Rs Per Meter	Rs.3,75,000/-

Garland drain (In Mtrs) 950Mtrs	2,85,000	-	-	-	-	@300 Rs Per Meter	Rs.2,85,000/-
TOTAL							Rs.9,60,000/-

4.5.2.2.1. Species Recommendation for Plantation granted in the district

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

- Natural growth of existing species and survival rate of various species.
- Suitability of a particular plant species for a particular type of area.
- Creating of biodiversity.
- Fast growing, thick canopy copy, perennial and evergreen large leaf area.
- Efficient in absorbing pollutants without major effects of natural growth.
- The following species may be considering primary for plantation best suited for the prevailing climate condition in the area.

Table 4.15: Recommended Species to Plant in the Greenbelt

Sl.No	Name of the plant (Botanical)	Family Name	Common Name	Habit
1	<i>Azadirachta indica</i>	Meliaceae	Neem, Vembu	Tree
2	<i>Albiziafalcatoria</i>	Fabaceae	Tamarind, Puliymaram	Tree
3	<i>Polyalthialongifolia</i>	Annonaceae	Kattumaram	Tree
4	<i>Borassus Flabellifer</i>	Arecaceae	Palmyra Palm	Tree

4.6 Socio Economic

The socio-economic impacts of mining are many. Impacts of a mine project may be positive or Negative. The adverse impacts attribute to physical displacement due to land acquisition, which is followed by loss of livelihood, mental agony, changes in social structure, and risk to food security etc., People are also directly affected due to pollution. Social Impact Assessment (SIA) is a process of analysis, monitoring and managing the social consequences of a project. Study on Socio-economic status has already been carried out using primary socio-economic survey for generating the baseline data of Socio-economic status.

4.6.1 Anticipated Impact

From the primary Socio-economic survey & through secondary data available from established literature and census data 2011, it is found that there would be positive impact on Socio-economic condition of the nearby area. There is no habitation within 300 m of the proposed mining lease area. Therefore, no major impact is anticipated on the nearby habitation during the entire life of the mine.

4.6.2 Mitigation Measures

- Good maintenance practices will be adopted for plant 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 will 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

- 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)
- 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
- 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, Spirometric tests
- Periodic medical examination – yearly, Lung function/ Silicosis 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.

4.7.5 Plastic Waste Management

As per the Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated 25.06.2018 following kind of plastics will not be used in the mines area.

- Use and throw away plastics such as carry bags, plastic bags, plastic sheets used for food wrapping, spreading, plastic plates, plastic coated tea cups and plastic tumblers will not be used in the mines

Action Plan:

Action Plan	Responsibility
All the employees will be checked for plastics before entering the quarry.	Watchman
Every week or month a meeting of workers under the chairmanship of the mine manager will be held to explain the disadvantages of plastic use.	Mine Foreman & Mining Mate

They will be advised not to bring plastic materials into the mines and those who are involved in such activities will not be allowed to work on the day of the snow.	Mines Manager
The miners will be provided with areca nut plates and mugs to help reduce the use of plastics.	Mines owner

4.8 Mine Closure

Mine closure plan is the most important environmental requirement in mineral 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.

Objective of Mine closure

- 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.

4.8.1 Mine Closure criteria

The criteria involved in mine closure are discussed below:

4.8.1.1 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.,

4.8.1.2 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 discharge 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.

4.8.1.3 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 (Annexure I)

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.1 Introduction

Consideration of alternatives to a project proposal is a requirement of EIA process. During the scoping process, alternatives to a proposal can be considered or refined, either directly or by reference to the key issues identified. 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.

The quarrying operation like drilling, blasting, excavation, loading & transportation are being carried out. The site has been selected based on geological investigation and exploration as below:

- Transportation facility for materials & manpower
- Overall impact on environment and mitigation feasibility
- Socio – economic background.

Enough infrastructures exists and lesser resources are required to be deployed. Since, any further construction for infrastructure is not required and hence does not affect the environment considerably. The mineral deposits are site specific in nature; hence question of seeking alternate site does not arise for this project.

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 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 Mine Management.

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

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. 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).

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

S.No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediate
2	Soil Quality Control Measures	Before commissioning of the project	Immediate
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediate and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediate and as project progress
5	Noise Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediate and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediate 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: Monitoring Schedule for the Project Area

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, PM2.5, PM10, SO2 and NOx.
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

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

6.4 Budgetary Provision for EMP

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

The proposed capital cost for Environmental Monitoring Programme for Tmt.D.Rani Multi Colour Granite Quarry is Rs.76,000 for conducting Air Quality, Meteorology, Water Quality, Hydrology, Soil Quality, Noise Quality Vibration Study, Greenbelt.

Table 6.3: Environmental Monitoring Budget

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

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 level 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 will submit the periodical reports to

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

CHAPTER – 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 are incorporated after Public Hearing.

- Public Consultation
- Risk Assessment
- Disaster Management Plan

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. 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 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

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; ▪ Entry of unauthorized persons will be prohibited; ▪ Firefighting 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 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 guidelines.

2	OB / Waste Dump	Sliding of benches Height and slope of the benches Drainage facilities	▪ Dumps benches are maintained with proper 3 m height and 37° slope to prevent slope failure and terraced. ▪ Dumping in the waste dump in layers and dozing daily. ▪ Vegetation of the top and slopes of the dump to prevent erosion and providing water drainage channels ▪ Providing proper drainage facilities in mine and dump area. ▪ Construction of retaining wall around dump area to stop sliding of material. ▪ Garland drain to be made around OB dump area
3	Drilling& Wire Saw Cutting	Due to 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, ▪ Drill& Wire saw operator shall examine the drilling and wire saw equipment and satisfy himself ▪ Drilling & cutting operations 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 and wire saw equipment as per operator manual. ▪ All drills and wire saw unit shall be provided with wet drilling and cutting arrangement and it 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	▪ The maximum charge per delay and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blast 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 is and 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	▪ 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.

		Operator of truck leaving his cabin when it is loaded.	▪ 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 ▪ Garland drains will be provided at the toe of dump ▪ 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.

7.3 Disaster Management Plan

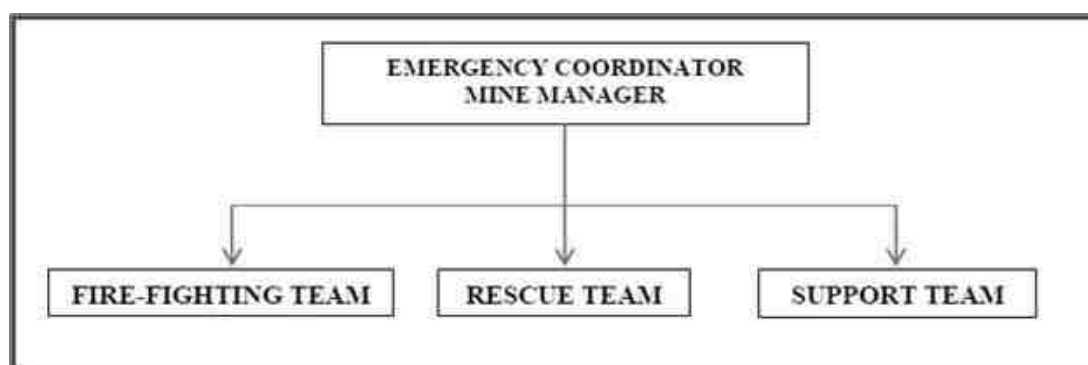
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

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:

- Effect the 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

It is to optimize operational efficiency to rescue rehabilitation and render medical help and to restore normalcy. To tackle the consequences of a major emergency inside the mines or immediate vicinity of the mines, a Disaster Management Plan must be formulated, and this planned emergency document is called “Disaster Management Plan”.

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 below –



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	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
Rescue Team	
Team Leader	Mines Manager
Team Member	Environment Officer
Team Member	Mining Foreman
Support Team	
Team Leader	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team	Mines Foreman

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

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

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

(b) Incident controller (IC)

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

(c) Communication and advisory team

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

(d) Roll call coordinator

The Mine Foreman shall be Rollcall 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 Type of Fire Extinguishers

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
Location	Type of Fire Extinguishers

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.
- Firefighting 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.
- Checking of blasting area for any un-blasted hole or material.
- 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

There are Proposed applied and nearby proposed quarries within a radius of 500 meters from the proposed project area. The list of quarries is as below –

Table 7.4: List of Quarries within 500 Meter Radius from this Proposal

PROPOSED QUARRY				
CODE	Name of the Owner	S.F. Nos	Extent	Status
P-1	Tmt.D.Rani W/o. E. Dhanapal, Old. No. D/364, New No. D/11, Ukkira Kaliyamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State - 620 017.	75/1B, 75/3A, 76/1, 78/1 & 78/2	2.93.0Ha	File no.12692 TOR Identification No.TO25B0108TN51 49282N Dated:07.11.2025.
		Total	2.93.0Ha	
EXISTING QUARRIES				
E-1	Thiru. E. Dhanapal, Old No. D-364, New No D/11, Ukkara Kaliyamman Street, Thennur, Trichy District, Tamil Nadu – 620 117	74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D & 74/2	4.89.0Ha	21.02.2014 to 20.02.2034
E-2	Tvl.Vinayaga Enterprises, No.20/615, Vethasalapuram, Thogamalai, Kulithalai taluk, Karur District.	72/2A,72/3, 72/4A, 72/4B	3.90.5	24.02.2023 to 23.02.2043
		Total	8.79.5 Ha	
TOTAL CLUSTER EXTENT			11.72.5Ha	

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

Table 7.5: Salient Features of Proposed Projects “P1”

Name of the Quarry	Tmt.D.Rani Multi Colour Granite quarry
SF.no	75/1B, 75/3A, 76/1, 78/1 & 78/2
Extent	2.93.0Ha
Village & Taluk	Veeriampalayam Village, Krishnarayapuram Taluk
Lease period	20 years
Mining Plan Period	20 years
Year wise Production prepared for	1 st five years
Life of the Mine	25 years
Land use classification	It is a Patta land classified as punjai
Previous lease particulars	It is Patta land, registered in the name of Thiru. Thiru.E.Dhanapal, S/o. Erachi Reddiar vide patta nos.3391,2086,3414,1910 and 3525. The applicant has obtained consent from the Pattadhar for the period of twenty five years.
Proposed Depth for five years plan period	28m (1m Topsoil + 2m Weathered rock + 25m Multi Colour Granite)
Ultimate depth of Mining	38m (1m Topsoil + 2m Weathered rock + 35m Multi Colour Granite)
Ultimate Pit Dimension	189m(L) x 96m (W) x 38m (D)
Toposheet No	58-J/05
Latitude between	10°53'11.85785''N to 10°53'28.61999''N
Longitude between	78°18'35.34535''E to 78°18'40.69562''E

Topography	The area is situated in undulated terrain. The gradient is gentle towards East side and altitude of the area is 130m to 131m above from MSL. The Multi-Colour granite is covered with 1m thickness of soil and 2m weathered rock.	
Ground water	The water table in the area is found 85 below ground level it is revealed from the Geophysical Resistivity study	
Machinery proposed	Jackhammer	6
	Compressor	2
	Crawler crane	1
	Excavator	2
	Tipper	2
	Diesel Generator	1
	Diamond wire saw	2
Proposed manpower deployment	41	
Project cost	Rs.2,95,80,000/-	
CER cost	Rs. 3,00,000/-	
Nearby Water Bodies	There is no water bodies such as odai, canal river adjacent to the project site Water bodies located in the study area is given below Pungar Stream - 3.0 Km – SE Panjapatty Lake - 6.5 Km – SW Canal - 4.5 Km – NW Cauvery River - 7.3 Km – North	
Nearest Habitation	670 m – South	
Nearest Reserve Forest	Lalapettai RF – 6.7km – North	
Nearest Wild Life Sanctuary	Kadavur Slender Loris Sanctuary – 29.0km – South West	

Table 7.6: Salient Features of Existing Quarry “E1”

Name of the Quarry	Thiru. E. Dhanapal Multicoloured Granite quarry
SF.no	74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D & 74/2
Extent	4.89.0Ha
Village & Taluk	Veeriyapalayam Village, Krishnarayapuram Taluk
Lease period	20 years
1 st Scheme of Mining Plan Period	5 Years
Life of the Mine	10 years
Existing Depth	17m
Previous History and CCR	Previous Mining plan period – 2014 -15 to 2018 – 19 EC.No: Lr. No. SEIAA-TN/F.No.2108/EC/1(a)/998/2013, Dated: 10.02.2014 CCR Letter No: E.P/12.1/202-21/SEIAA/30/TN/434 date 22.04.2021
TNPCB Clearance details	No.F.0367KAR/RS/DEE/TNPCB/KAR/A/2017 Dated: 26.05.2017 No.F.0367KAR/RS/DEE/TNPCB/KAR/W/2017 Dated: 26.05.2017
Land use classification	It is a Patta land, Classified as Punjai and the entire land is covered by Granite boulders and sheet rock.
Previous lease particulars	It is a Patta land, the land registered name of Thiru. E. Dhanapal vide patta no 2094, 2095,2202, The patta no. 1944,1981,2179 registered in the name of Thiru.Narayanan and vide patta no 2087, 1837, 1980 registered in the name of Thiru.Narayanan, Thiru. Balaji and Thiru. Prabakaran
Proposed Depth for five years plan period	28m (1m Topsoil + 2m Weathered rock + 25m Multi - Coloured granite)
Ultimate depth of Mining	43m (1m Topsoil + 2m Weathered rock + 40m Multi - Coloured granite)
Existing Pit Dimension	171m (L) X 58m (W) X 17m (D)
Ultimate Pit Dimension	215m(L) x 114m (W) x 43m (D)
Toposheet No	58 J/05
Latitude between	10°53'11.92"N to 10°53'25.40"N
Longitude between	78°18'30.96"E to 78°18'36.72"E
Topography	The area is Exhibits Plain terrain. The gradient is gentle towards South Eastern side and altitude of the area is 131m above from MSL. The Multi-coloured granite is covered with 1.0m thickness of soil and 2m weathered rock.

Ground water level		The water level is found to occur at a depth of 55m in summer and 50m in rainy season below from the ground level.
Machinery proposed	Jackhammer	6
	Compressor	2
	Hydraulic drilling machine	1
	Hydraulic/Crawler crane	1
	Excavator	2
	Tipper	2
	Diesel Generator	1
	Diamond wire saw	2
Proposed manpower deployment		40
Project cost		Rs.3,96,92,000/-
EMP Cost		Rs. 3,80,000/-
Total Project Cost		Rs. 4,00,72,000/-
CER cost		Rs. 5,00,000/-
Nearby Water Bodies		• Pungar Stream -2.5km-SE • Canal -4.5km-NW • Panjappatty Lake – 6.5km-S • Cauvery River -7.3km-N
Nearest Habitation		600m-SW
Nearest Reserve Forest		Lalapettai R.F 7km-NE
Nearest Wild Life Sanctuary		Kadavur Slender Loris Sanctuary -30km-SW

Table 7.6: Salient Features of Existing Quarry "E2"

Name of the Quarry		M/s.Vinayaga Enterprises Multi-coloured Granite			
EC Granted details		Lr.No. SEIAA-TN/F.No.7675/1 (a)/EC.No 5035/2020 Dated: 26.04.2022			
Extent		3.90.5 Ha			
SF No		72/2A, 72/3, 72/4A and 72/4B			
Lease period		20 years			
Mining Plan Period		5 Years			
Life of the Mine		20 years			
Existing Depth		NIL			
Landuse details		The lease area is a patta lands, the lease applied area is registered in the name of Thiru.M.Gandhi, Partner of M/s. Vinayaga Enterprises vide patta no.1943 & 1876			
Status of applicant		Company is Partnership firm			
Geological Resources	ROM	Granite Waste 60%	Recoverable Reserves 40%		
	19,60,400 m ³	11,76,240m ³	7,84,160m ³		
Mineable Reserves	ROM	Granite Waste 60%	Recoverable Reserves 40%	Weatherd Rock	Topsoil
	4,77,696m ³	2,86,618m ³	1,91,078m ³	45,500m ³	45,500m ³
Production (Quantity in m ³) for the period of 5 years as per EC.		1,06,122 m ³	63,673 m ³	42,449 m ³	23,532 m ³
Proposed Depth period		16m Bgl			
Toposheet No		58-J/05.			
Latitude between		10°53'12.17"N to 10°53'22.03"N			
Longitude between		78°18'21.87"E to 78°18'27.41"E			
Ultimate pit dimensions		175m(L) x 130m (W) x 48m (D)			
Topography		The area is situated in flat terrain. The gradient is gentle towards North side and the altitude of the area is 129m above from MSL.			
Water table		85m			
Machinery proposed	Jackhammer	6			
	Compressor	2			

	Hydraulic drilling machine	2
	Hydraulic/Crawler crane	1
	Mobile crane	1
	Excavator	2
	Tipper	2
	Diesel Generator	2
	Diamond wire saw	4
	Jet burner	1
Water Requirementd		3.5KLD
Proposed manpower deployment		43
Fixed Asset cost		Rs.4,99,000/-
Operational Cost		Rs.44,00,000/-
EMP Cost		Rs. 2,45,000/-
Total Project cost (Excluding EMP cost) as per EC		Rs.51,44,000/-
CER cost		Rs. 5,00,000/-
Nearest habitation		300m- NW

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 Movement of HEMM and operating of machineries in the cluster.

Air Environment –

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

Table 7.7: Cumulative Production Load of Granite

Quarry	Mineable Reserves ROM In m ³	Mineable Reserves of Granite	Proposed production ROM for five-year period	Production of ROM Per Day	Proposed production Granite for five-year period	Production of Granite Per day in m ³	Weathered rock in Production m ³	Weathered rock per day in m ³	Topsoil in Production m ³	Topsoil per day in m ³	Number of Lorry loads per day (ROM)
P1	185730	74292	37400	25	14960	10	30,140	20	11,482	8	2
Total	1,85,730	74,292	37,400	25	14,960	10	30,140	20	11,482	8	2
E1	1,43,881	57,552	70,375	96	28,150	19	9,698	11	5,122	6	16
E2	4,77,696	1,91,078	1,06,122	318	42,449	28	23,532	26	23,532	26	53
Total	6,21,577	2,48,630	1,76,497	414	70,599	47	33,230	37	28,654	32	69
Grand Total	8,07,307	3,22,922	2,13,897	439	85,559	57	63,370	57	40,136	40	71

Source: Approved mining Plan, Scheme of Approved Mining plan of Respective mines and PFR Report ,form1.

On a cumulative basis considering all the 1 Proposed quarry and 2 Existing quarries it can be seen that the overall production of Granite ROM per day is 439m³ and overall production of Granite is 57m³ per day No of Lorry loads per day is 71

Based on the above production quantities the emissions due to various activities in all the 3 quarries 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 7.9.

Table 7.9: Emission Estimation from Quarries within 500 Meter Radius

Emission Estimation for quarry- P1				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.059233650	g/s
	Blasting	Point Source	0.000176383	g/s
	Mineral Loading	Point Source	0.037338655	g/s
	Haul Road	Line Source	0.002484914	g/s/m
	Overall Mine	Area Source	0.072546031	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	0.000208691	g/s

Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000020861	g/s
Emission Estimation for quarry-E1				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.066728150	g/s
	Blasting	Point Source	0.000320007	g/s
	Mineral Loading	Point Source	0.039547821	g/s
	Haul Road	Line Source	0.002487054	g/s/m
	Overall Mine	Area Source	0.066818610	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	0.00035013	g/s
Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000028730	g/s
Emission Estimation for quarry- E2				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.059233650	g/s
	Blasting	Point Source	0.000176383	g/s
	Mineral Loading	Point Source	0.037338655	g/s
	Haul Road	Line Source	0.002484914	g/s/m
	Overall Mine	Area Source	0.072546031	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	0.000208691	g/s
Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000020861	g/s

Source: Emission Calculations.

Table 7.10: Incremental & Resultant GLC within Cluster

PM ₁₀ in µg/m ³	
Location	CORE
Background	42.0
Highest Incremental	18.82
Resultant	60.8
NAAQ standard	100 µg/m ³
PM _{2.5} in µg/m ³	
Location	CORE
Background	20.9
Highest Incremental	9.83
Resultant	30.7
NAAQ standard	60 µg/m ³
SO ₂ in µg/m ³	
Location	CORE
Background	5.5
Highest Incremental	1.49
Resultant	6.9
NAAQ standard	80 µg/m ³
NO _x in µg/m ³	
Location	CORE
Background	20.8
Incremental	13.58
Resultant	34.4
NAAQ standard	80 µg/m ³

Noise Environment –

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

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

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

Where:

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

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

$$Lp_{total} = 10 \log \{10^{(Lp_1/10)} + 10^{(Lp_2/10)} + 10^{(Lp_3/10)} + \dots\}$$

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 considering of all the machinery and activities used in the mining process.

Table 7.11: Predicted Noise Incremental Values from Cluster

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	57.9	55.5	55.5	54.47	54.3	54.7	55.3
Incremental Value dB(A)	54.08	51.16	31.16	25.45	26.66	30.56	25.29
Total Predicted Noise level dB(A)	59.41	56.86	55.52	54.48	54.31	54.72	55.30
NAAQ Standards	Industrial Day Time- 75 dB (A) & Night Time- 70 dB (A) Residential Day Time- 55 dB (A) & Night Time- 45 dB (A)						

The incremental noise level is found within the range of 51.16-54.08 dB (A) in Core Zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123E, dated 14.2.2000 and subsequently amended vide S.O. 1046E, dated 22.11.2000, S.O. 1088E, dated 11.10.2002, S.O. 1569E, dated 19.09.2006 and S.O. 50E dated 11.01.2010 under the Environment (Protection) Act, 1986.).

Socio Economic Environment –

The 3 mines shall create employment to **128** people and revenue will be created to government

Table 7.12: Socio Economic Benefits from Quarries

Location code	Employment	Project Cost	CER
P1	41	Rs.2,95,80,000/-	3,00,000/-
E1	38	Rs.2,26,90,000	5,00,000
E2	43	Rs.51,44,000/-	5,00,000
Total	122	Rs. 5,74,14,000/-	13,00,000/-

A total of 124 people getting and will get employment from these cluster quarries. Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018 by all the mines.

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is $\leq$ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC and the total CER amount from the 3 Quarries is Rs 13,00,000/-

7.5 Cluster Management Committee

The cluster management committee is proposed to form including of 1 Proposed quarry and 2 existing quarries total extent of the cluster is 11.72.5Ha

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 QUARRY				
CODE	Name of the Owner	S.F. Nos	Extent	Status
P-1	Tmt.D.Rani W/o. E. Dhanapal, Old. No. D/364, New No. D/11, Ukkira Kalamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State - 620 017.	75/1B, 75/3A, 76/1, 78/1 & 78/2	2.93.0Ha	File no.12692 TOR Identification No.TO25B0108TN5149 282N Dated:07.11.2025.
		Total	2.93.0Ha	
EXISTING QUARRIES				
E-1	Thiru. E. Dhanapal, Old No. D-364, New No D/11, Ukkara Kalamman Street, Thennur, Trichy District, Tamil Nadu – 620 117	74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D & 74/2	4.89.0Ha	21.02.2014 to 20.02.2034
E-2	Tvl.Vinayaga Enterprises, No.20/615, Vethasalapuram, Thogamalai, Kulithalai taluk, Karur District.	72/2A,72/3, 72/4A, 72/4B	3.90.5	24.02.2023 to 23.02.2043
		Total	8.79.5 Ha	
TOTAL CLUSTER EXTENT			11.72.5Ha	

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

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

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

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

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

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

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

6. Cluster Management Committee Policy

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

-
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
 - Co-ordination of the environment related activities within the project as well as with outside agencies
 - Collection of health statistics of the workers and population of the surrounding villages
 - Green belt development
 - Monitoring the progress of implementation of the environmental monitoring programme

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

CHAPTER – 8: PROJECT BENEFITS

8.0 General

There is one applied proposed project for M/s.D.Rani Multi Colour Granite Quarry village aims to Proposed production 37,400m³ (ROM for five year period) 1,85,730m³ for Life of Mine of 25 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
- To meet out the demand supply gap of Granite and enhance the foreign exports

8.1 Employment Potential

It is proposed to provide employment to about 41 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 than negative on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

8.3 Improvement in Physical Infrastructure

The proposed mine is located in Veerampalayam Village, Krishnarayapuram Taluk and Karur District of Tamil Nadu and the area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to proposed mine.

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

8.4 Improvement in Social Infrastructure

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

8.5 Other Tangible Benefits

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

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation, for supply of goods and services to the mine and other community services.
- Additional housing demand for rental accommodation will increase
- Cultural, recreation and aesthetic facilities will also improve
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity

- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

8.5.1 Corporate Social Responsibility

Individual Project Proponents 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 proponent 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

8.5.2 CSR Cost Estimation

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

8.5.3 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.

As per para 6 (II) of the office memorandum, being a green field project & Capital Investment is ≤ 100 crores, **M/s. D.Rani Multi Colour Granite Quarry** shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

Table 8.1: CER – Action Plan

CER
Rs 3,00,000/-

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

CHAPTER – 9: ENVIRONMENTAL COST BENEFIT ANALYSIS

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

CHAPTER - 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 committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent will – **M/s.D.Rani Multi Colour Granite Quarry**

- Allocate necessary resources to ensure the implementation of the environmental 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
- 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

10.1.1 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 the proposed existing quarry.

The said team will be responsible for:

- Analysis of the water and air samples collected through external laboratory.
- Monitoring of the water/ waste water quality, air quality and solid waste generated.
- 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
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Refueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
No external dumping i.e., outside the project area	Mine Foreman
Greenbelt on dumps and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
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
Thick plantation using native flora species will be carried out on the backfilled area.	Mines Manager
There will be formation of a small surface water body in the mined-out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

10.3 Soil Management

10.3.1 Top Soil Management –

It is anticipated to remove 11,482m³ of topsoil and preserve it to facilitate greenbelt development on the backfilled area during mine closure.

10.3.2 Overburden / Waste and Side Burden Management –

- It is anticipating to remove 22,440m³ of waste (Granite waste@ 60%) which will temporarily store at predetermined places as per mining plan and will be backfilled during mine closure.

Table 10.2: Proposed Controls for Soil Management

Control	Responsibility
backfilling process during mine closure as per mining plan	Mines Manager
The dump slopes will be planted with deep rooting shrubs, grasses and creepers for stabilizing them	Environment Officer
Garland drains are to be paved around the dump area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface dumps via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
The backfilled area shall be covered with the soil for green belt development	Environment Officer
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
The overall slope of the dump is maintained at angle of repose not exceeding 37° from horizontal	Mines Manager
The retaining wall has to be made to arrest the waste dump spills	Mines Manager
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer
Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

10.4 Water Management

Water is a key component in mining projects as it is required for, and affected by, mining activities. Effective water management is important for a variety of reasons including: uninterrupted operation of the mine, compliance with operational permissions and applicable legislation, and minimization of effects on the receiving environment.

This section focuses on actions for avoidance, mitigation, and control, as well as a water management monitoring program –

- To protect water-related resources, and avoid harmful impacts;
- To supply and retain water for mine operations;
- to Define water-related environmental control structures; and
- To manage water to ensure that any discharges are following the applicable water quality levels and guidelines.

Table 10.3: Proposed Controls for Water Environment

Control	Responsibility
To maximize the reuse of pit water for water supply	Mines Manager
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	Environment Officer
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations Safety distance of 50m will be always maintained from the odai and oorani	Mines Manager
Mine pit water is used for dust suppression and greenbelt development utilization of mine pit water is optimal and effective ways	Environment Officer
Ensure there is no process effluent generation or discharge from the project area into water bodies	Environment Officer
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Manager
Fast growing grasses, small plants and bushes will be grown on the overburden dumps to control soil erosion and siltation	Mines Manager
Retention walls and garland drains will be constructed around toe of waste dumps to arrest silt wash off from dumps during monsoon	Environment Officer
Rainwater harvesting measures will be adopted in the project area and in nearby villages to maintain and enhance the ground water table of the area	Environment Officer
Regularly assess and modify Water Management Plan to adapt to changing work plans and site conditions	Environment Officer
Familiarize all site personnel with the purpose and content of the Water Management Plan, and their responsibilities in its implementation	Environment Officer
Water management and sediment control structures and facilities will be regularly inspected and maintained according to the monitoring schedules	Environment Officer
Monthly or after rainfall, inspection for performance of water management structures and systems	Environment Officer
Conduct ground water and surface water monitoring for parameters specified by State Pollution Control Board (SPCB)	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.5 Air Quality Management

The proposed mining 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 water sprinkling on working face	Mines Manager
Develop thick Greenbelt with tall growing trees and thick foliage cover all along the boundary of the project (7.5 Meter Buffer Zone) to arrest dust spreading outside the project area and to be maintained. This plantation cover will also act as an acoustic barrier	Environment Officer
Daily maintenance of haul roads and daily water sprinkling to minimize the generation of fugitive dust due to movement of heavy earth moving machineries on it	Mines Manager
Handle the waste from the mine pit to respective dumps and backfilling during closure process, fugitive dust is anticipated. this fugitive emission can be controlled by well-maintained machineries, well maintained haul roads water sprinkling on haul roads twice a day. Besides it is also advised not to handle the waste during high windy periods	Mines Manager & Environment Officer
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself to be implemented	Environment Officer
Plantation will be carried out on surface dumps, backfilled area and top benches of the mined out area	Environment Officer
Water reservoir will be developed in the left over mined out pit, which will serve as additional surface water resources for the nearby villages	Environment Officer
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution and noise generation	Mines Manager
Over loading of trucks should be avoided	Mines Manager
All the mining equipment and trucks has been controlled with emission norms	Environment Officer
The village roads used for mineral transport will be maintained weekly and monthly basis to avoid fugitive dust emissions	Mines Manager
Dust mask are provided to the workers working in high dust generating areas and continue to provide the same	Mines Manager
Weekly and Monthly maintenance of deployed machineries, to reduce gaseous emission	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	Environment Officer
Monitor meteorological conditions (temperature, wind, rainfall)	Environment Office

Source: Proposed by FAE's & EIA Coordinator

10.6 Noise Management

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

Table 10.5: Proposed Controls for Noise Environment

Control	Responsibility
A thick greenbelt to be developed all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Plantation activities to be carried out on surface dumps and infrastructure facilities, these plantations will help in attenuating the noise levels	Environment Officer
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Manager
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Environment Officer
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Environment Officer
Provision of effective silencers for mining machinery and transport vehicles	Environment Officer
Provision of sound proof AC operator cabins to HEMM	Environment Officer
Sharp drill bits are used to minimize noise from drilling	Environment Officer
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring to be 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	Environment Officer
Undertake noise or vibration monitoring in response to a complaint (from any sensitive receptor).	Mines Manager
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination during initial stage of operation	Mines Manager
If a noise or vibration complaint is received, follow the complaints and inquiries	Environment Officer
Undertake noise or vibration monitoring half yearly	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.7 Ground Vibration and Fly Rock Control

Table 10.6: Proposed Controls for Ground vibration & Fly rocks

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 during initial stage 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
Prior to blasting within 500 meters of the lease boundary, establish a fly rock exclusion zone within adjacent properties and check with landholders that the area is not occupied by humans, blast clearance zones are applied for all blasts.	Environment Officer
Undertake vibration monitoring	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.8 Biological Environment Management

The mine management 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 mined out area, backfilled area, etc., the water reservoir will be developed in lower benches of the mined-out area at conceptual stage will be used for the maintenance of green belt after the closure of mine.

Following control measures are proposed for its management and will be the responsibility of the environment officer.

- Greenbelt development all along the safety barrier of the project area
- 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 constructing a sprinkler near the newly planted area.
- Year wise plantation should 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.

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.

10.8.1 Species Recommended for Plantation

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

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

Table 10.7: Recommended Species to Plant in the Greenbelt

<i>Sl.No</i>	<i>Name of the plant (Botanical)</i>	<i>Family Name</i>	<i>Common Name</i>	<i>Habit</i>
1	<i>Azadirachta indica</i>	Meliaceae	Neem, Vembu	Tree
2	<i>Albiziafalcataria</i>	Fabaceae	Tamarind, Puliyamaram	Tree
3	<i>Polyalthialongifolia</i>	Annonaceae	Kattumaram	Tree
4	<i>Borassus Flabellifer</i>	Arecaceae	Palmyra Palm	Tree

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 in mines are fugitive dust and noise. Safety of employees during mining 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 detail's 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 above tests keep upgrading the database of medical history of the employees.

10.9.2 Proposed Occupational Health and Safety Measures –

- Providing a clean working environment that is conducive to safety & health annually
- Employee involvement and commitment in the implementation of health and safety guidelines
- Implementing safety and health management system and assessing the effectiveness through periodic audits
- Setting of safety and health objectives based on comprehensive strategic plans and measure performance against these plans
- Provision of necessary standard personal protective equipment's (PPE)
- Ensuring that all employees at all levels receive appropriate training and are competent to carry out their duties and responsibilities.
- Provision of rest shelters for mine workers with amenities like drinking water, fans, toilets urinals, canteen etc.,
- Rotation of workers exposed to noisy areas.
- Daily dust suppression on haul roads to prevent fugitive dust emission into the air.
- First-aid facility at the mine office.

10.9.3 Health and Safety Training Programme

The company shall 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 an Environmental Consultants to provide periodical training to all the employ to carry out the mining operation in and eco-friendly manner.

Table 10.8: List of Periodical Trainings Proposed for employees

Course	Personnel	Frequency	Duration	Instruction
New-hire Training	All new hires 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

Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 5.2 and 5.3 give overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures (including reclamation).

Table 10.9: Capital and Recurring Cost of EMP

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring per annum
Air Environment	Haul road maintenance & Water sprinkling	Lump sum fund allocation for daily maintenance of haul roads and thrice a day water sprinkling by fixed sprinklers or water tankers	0	50000
	Muffle blasting – To control fly rocks during blasting	Lump sum fund allocation Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure	Lump sum fund allocation for ensuring wet drilling by covering drill holes with wet gunny bags and spraying water while drilling	0	10000
	No overloading of trucks/tippers/tractors	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Enforcing speed limits of 20 km/hr within ML area	Lump sum fund allocation Manual Monitoring through Security guard	0	5000

	Regular monitoring of exhaust fumes as per RTO norms	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	5000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0

	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff managent	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 plan 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 check up for workers will be provisioned	IME & PME Health check up for all the employees will be covered batch wise.	0	50000
	First aid facility will be provided	Lumpsum fund allocation	0	5000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill 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
Start Rating	Monitoring of Granite Quarrying Operation by Anna University	Star Rating @ Rs. 1,00,000/- per Year will be deposited in the First Year	500000	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			10,60,000	3,02,000

In order to implement the environmental protection measures, an amount of Rs. 10.60 lakhs as capital cost and recurring cost as Rs. 3.02 lakhs as recurring cost is proposed considering present market price considering present market scenario.

Year Wise Break Up	
Year	Amount
I	₹ 13,62,000
II	₹ 3,17,100
III	₹ 3,32,955
IV	₹ 3,49,603
V	₹ 3,67,083
VI	₹ 3,85,437
VII	₹ 4,04,709
VIII	₹ 4,24,944
IX	₹ 4,46,192
X	₹ 4,68,501
XI	₹ 4,91,926
XII	₹ 5,16,522
XIII	₹ 5,42,349
XIV	₹ 5,69,466
XV	₹ 5,97,939
XVI	₹ 6,27,836
XVII	₹ 6,59,228
XVIII	₹ 6,92,190
XIX	₹ 7,26,799
XX	₹ 7,63,139
Total	₹ 110.46 Lakhs

CHAPTER – 11: SUMMARY AND CONCLUSIONS

M/s. D.Rani Multi Colour Granite Quarry 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.

A detailed Draft EIA/ EMP Report is prepared for public and other stakeholders' suggestions and a Final EIA/ EMP Report will be prepared based on the outcome of Public Consultation.

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 Oct 2025 to Dec 2025(Post Monsoon) 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 Grey Granite Quarry as per market demand.

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 41 people directly in the cluster and indirectly around 80 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 M/s. D.Rani Multi Colour Granite Quarry (Extent 2.93.0 Ha)

12. DISCLOSURE OF CONSULTANTS

Tmt.D.Rani Multi Colour Granite 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.

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	Mr.S.Nagamani	In-house	1	B	GEO	B
2	Mr. J. R. Vikram Krishna	Empanelled	1 38	A B	SHW RH NV	A A A
3	Mr. N. Senthilkumar	Empanelled	31 38	A B	AQ WP RH	A A B
4	Mr. N.Sathishkumar	In-house	-	-	AP	B
5	Mr. P. Govindasamy	In-house	-	-	WP	B
6	Mr. E.Vadivel	In-house	-	-	HG	B
7	Mr. A. Allimuthu	In-house	-	-	SE	B
8	Mr.P.Panneer Selvam	In-house	-	-	EB	B
9	Mr. S.Ilavarasan	In-house	-	-	LU	B
10	Mr.M. Shaik Nawas	In-house	-	-	SC	B

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

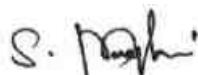
Declaration by experts contributing to the Draft EIA/EMP for Tmt.Rani Multi Colour Granite Quarry (Extent 2.93.0Ha) in Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

Name: **Mr.S. Nagamani**

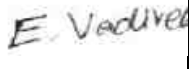
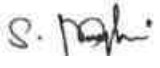
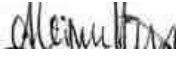
Designation: **EIA Coordinator**

Date & Signature:



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

FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

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

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

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 Draft EIA/EMP for Tmt.D.Rani Multi Colour Granite Quarry (Extent 2.93.0Ha) in Veeriampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature & Date:



Name:

Dr. M. Ifthikhar Ahmed

Designation:

Managing Partner

Name of the EIA Consultant Organization:

M/s. Geo Exploration and Mining Solutions

NABET Certificate No & Issue Date:

NABET/EIA/25-28/RA0424 Dated: 25-08.2025

Validity:

Valid till 06.08.2028

ANNEXURE

TMT. D. RANI MULTI COLOUR GRANITE QUARRY

S.F. No: 75/1B, 75/3A, 76/1, 78/1 & 78/2

Extent: 2.93.0ha

**Veeriampalayam Village,
Krishnarayapuram Taluk, Karur District,
Tamil Nadu State.**

EXTENT OF CLUSTER – 11.72.5 Ha

Project Proponent

Tmt.D.Rani,

W/o. E. Dhanapal,

Old. No. D/364, New No. D/11,

Ukkira Kaliamman Koil Street,

Anna Nagar, Thennur, Trichy District,

Tamil Nadu State - 620 017.

LIST OF ANNEXURES

CODE	DESCRIPTION	PAGE NO.
P1-D. RANI	COPY OF TERMS OF REFERENCE	1A-23A
	APPROVAL LETTER	24A-28A
	COPY OF 500m RADIUS LETTER	29A-31A
	COPY OF APPROVED MINING PLAN AND PLATES	32A-133A
	COPY OF HYDROGEOLOGY REPORT	134A-151A
	COPY OF EXPLOSIVE CERTIFICATE	152A-157A
	COPY OF 300m RADIUS LETTER	158A
E1	COPY OF EC	159A-202A
	COPY OF BASE LINE MONITORING DATA	203A-304A
	COPY OF NABET CERTIFICATE	305A



File No: 12692
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated: 07/11/2025



To,

Tmt. D. RANI
No. 364, New No. D/11, Ukkira Kaliamman Koil Street, Anna Nagar, Thennur, Trichy District -
620017. TAMIL NADU.
raniedtry@gmail.com

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

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Proposed Multicolour Granite Quarry over an extent of 2.93.0Ha in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2, Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu by Tmt. D. Rani - under project category – “B1” and Schedule S.No. 1(a) – “Mining of Minerals”– **ToR issued along with Public Hearing-** preparation of EIA report – Regarding.

Ref: 1. Online proposal No. SIA/TN/MIN/549329/2025, Dated 08/09/2025.

2. Minutes of the 629th meeting of SEAC held on 10.10.2025.

3. Minutes of the 910th meeting of SEIAA held on 03.11.2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108TN5149282N
(ii) File No.	12692
(iii) Clearance Type	Fresh ToR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	VEERIAMPALAYAM VILLAGE, Multi Colour Granite Quarry Project Belongs to Tmt. D. Rani
(viii) Name of Company/Organization	D RANI
(ix) Location of Project (District, State)	KARUR, 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 inter alia 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 03.11.2025. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Tmt. D. Rani** under the provisions of EIA Notification, 2006 and as amended thereof.
5. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6. The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/Regulations or Statutes, as applicable, to the project.
7. This issues with the approval of the Competent Authority.
8. The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
5. The Chairperson, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
6. The District Collector, Karur District
7. The Commissioner of Geology and Mines, Guindy, Chennai-32
8. The Assistant Director, Department of Geology & Mining, Karur District
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Integrated Regional office of MoEF&CC, Sastri Bhawan, Nungambakkam, Chennai
11. File Copy

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. The PP shall furnish the consent lease agreement from the landowner, registered with the competent authority during EIA appraisal. 2. 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,

S. No	Terms of Reference
	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. 3. The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report. 4. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report. 5. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. 6. 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. 7. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 8. 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. 9. 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. 10. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall. 11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate 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

S. No	Terms of Reference
	the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 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.

S. No	Terms of Reference
	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

S. No	Terms of Reference
	the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

3. Seiaa Specific Conditions :

S. No	Terms of Reference
3.1	After detailed discussions, the Authority accepts the recommendation of SEAC-II and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 37,400m³ of ROM which includes 14,960m³ of Granite Recovery @ 40% and 22,440m³ of Granite waste @ 60% for a depth of mining up to 28m BGL and annual peak production shall not exceed 3208 m³ of Granite recovery, 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 in addition to the following SEIAA Specific conditions: 1. The PP should furnish the details of the water table in the proposed quarry site, duly certified by the competent/qualified authority along with the EIA Report.

4. Seiaa Standard Conditions :

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

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-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

S. No	Terms of Reference
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for

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

S. No	Terms of Reference
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions

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

STANDARD TERMS OF REFERENCE

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

- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly

authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on

ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and

modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community

- proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
 - 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
 - 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
 - 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
 - 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
 - 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
 - 44) Besides the above, the below mentioned general points are also to be followed:-
 - a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

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

10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.

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

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

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

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



Signature Not Verified

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

Date: 07/11/2025

DIRECTORATE OF GEOLOGY AND MINING

From
Thiru.D.Mohan, I.A.S.,
Department of Geology and Mining.
T.V.K.Industrial Estate,
Guindy, Chennai - 600 032.

✓ To
Tmt.D.Rani,
W/o. E.Dhanapal,
Old No.D/364, New No.D/11,
Ukkira Kaliamman Koil Street,
Anna Nagar, Thennur,
Trichy District - 620 017.

Rc.No. 5564/MM2/2020, dated 06.08.2025

Madam,

Sub: Mines and Mineral – Minor Mineral – Granite - Karur District – Krishnarayapuram Taluk - Veerampalayam Village – Patta land – S.F.Nos. 75/1B(0.38.0 hect), 75/3A(0.02.0 hect), 76/1(1.16.0 hect), 78/1(0.16.0 hect) and 78/2(1.21.0 hect) of over an extent of 2.93.0 hectares – Granite quarry lease application preferred by Tmt D.Rani – Precise area communicated by the Government – revised mining plan submitted by the applicant for approval - Mining Plan forwarded by the Deputy Director, Karur – Mining plan is approved -reg.

- Ref:
1. Granite Quarry lease application of Tmt D.Rani 08.08.2022.
 2. District Collector, Karur Rc.no.850/Mines/2018 dated 29.08.2022.
 3. Commissioner Of Geology Mining Rc.no.5564/MM2/2022 dated 11.01.2023 forwarded to Government under single system.
 4. Government Letter No.711/MMB.2/2023-1,Dated 28.10.2024.
 5. Draft Mining Plan Submitted by the applicant Dated 08.11.2024.
 6. The Assistant Director of Geology and Mining, Karur in Rc.No.850/Mines/2021, dated.10.03.2025 .
 7. This office even number letter dated 03.05.2025.
 8. Revised mining plan submitted by the applicant on 15.05.2025.
 9. The Deputy Director of Geology and Mining, Karur in Rc.No.850/Mines/2021 dated 27.06.2025.

Kind attention is invited to the references cited above.

2) In the reference 4th cited, the Government have communicated the precise area to the applicant Tmt.D.Rani, W/o E.Dhanapal and instructed to furnish approved mining plan within a period of three

months as per sub-rule (13) of Rule 19-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 and to produce environmental clearance obtained from the competent authority in respect of the granite quarry lease application preferred by the applicant, over an extent of 2.93.0 hectares of Patta S.F.Nos. 75/1B(0.38.0 hect), 75/3A(0.02.0 hect), 76/1(1.16.0 hect), 78/1(0.16.0 hect) and 78/2(1.21.0 hect) in Veerampalayam Village, Krishnarayapuram Taluk, Karur District.

3) In this connection, the revised mining plan submitted by the applicant has been forwarded by the Deputy Director, Geology and Mining, Karur vide reference 9th cited for approval of the Commissioner of Geology and Mining and reported that the draft mining plan submitted by the applicant has been verified with the reference to field conditions and found correct. The geological resources, mineable reserves and year wise production and development programme have been incorporated in the draft mining plan and the special conditions imposed in the precise area communication have also incorporated. Finally, the Deputy Director, Karur has recommended for approval of the Mining plan by the Commissioner of Geology and Mining.

4) On perusal of the draft Mining Plan, it is revealed that the Run of Mine for the total geological and mineable reserves are about 16,26,835 Metric Tonne (MT) and 4,92,187 MT respectively. Further, the proposed Run of Mine for the recoverable reserves for the first five years is about 99,110 MT and recovery @ 40% is 39,645 MT at a depth of 38 Mts. The draft mining plan submitted by the applicant is in accordance with the precise area communicated for grant of lease. Based on the recommendation of the Deputy Director (G&M), Karur, the draft mining plan submitted by Tmt.D.Rani W/o E.Dhanapal is, hereby, approved subject to the following conditions in addition to the conditions stipulated in the precise area communication issued by the Government:

- i. This 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. The 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 and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iii. This mining plan including Progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- iv. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.
- v. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957 and Granite conservation and Development Rules, 1999, shall be complied with.
- vi. A safety distance of 7.5 meters should be left out for the adjacent patta lands respectively.
- vii. A safety distance of 50 meters should be provided to the LTL line passing through the applied area in S.F.No.76/1.
- viii. Applicant should submit the registered consent obtain from the pattadhar for the applied area before granting of G.O
- ix. The quarrying operation should be restricted only in the area granted on lease.

- x. Granite waste materials should be dumped within in the quarry lease area and should not be dumped in the outside lands.
 - xi. The applicant firm should not disturb the adjoining patta lands and agricultural activities.
 - xii. No encroachment shall be allowed in the adjacent poromboke lands during quarrying operation.
 - xiii. Environmental Clearance should be obtained from the competent authority in respect of the subject area as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the notification of the Ministry of Environment and Forest and also obtain any other clearances, if any, required as per the notifications.
 - xiv. The applicant firm shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
 - xv. Quarrying activity should be carried out from 06.00 AM to 06.00 PM only.
 - xvi. No hindrance should be caused to the adjacent pattadars and public while quarrying and transportation of minerals from the subject area.
 - xvii. Relaxation to be obtained under Rule 106(2)(a) &(b) of Metalliferous Mines Regulations, 1961 from the Director of Mines Safety, if necessary.
 - xviii. A Green belt should be constructed to prevent sound and air pollution due to the proposed quarrying activity by planting at least 300 seedlings of Neem and Pungan all around the area.
 - xix. Child labour should not be engaged.
- Approved Mining Plan is sent herewith for further necessary action.

Encl: Approved Mining Plan.

Sd/-D.Mohan,
Director of Geology and Mining

/Forwarded by order/

[Signature]
Joint Director
06/08/25

Copy Submitted to:

The Additional Chief Secretary
to Government(FAC),
Natural Resources Department,
Secretariat, Chennai-9.

[Signature]
06/08/25

Copy to

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

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

To
Tmt.D.Rani, W/o. E.Dhanapal
Old No.D/364, New No.D11,
Ukkira Kalamman Koil Street,
Anna Nagar,
Thennur,
Trichy District.

Sir,

Rc.No.850 /Mines/2018, Dated: 21.08.2025

- Sub: Mines and Minerals - Minor Mineral - Granite -Karur District - Krishnarayapura Taluk - Veeriyapalayam Village - S.F.No.75/1B(0.38.0 hect), 75/3A(0.02.0 hect), 76/1(1.16.0 hect), 78/1(0.16.0 hect) and 78/2(1.21.0 hect) over an extent of 2.93.00 hectares - Quarry lease application preferred by Tmt.D.Rani for quarrying Multicoloured Granite - Precise area communicated by the Government - revised mining plan submitted by the applicant for approval - Revised Mining Plan approved - requested for the details of Existing/ Proposed/Expired and Abandoned quarries situated within 500 mts radial distance - furnished - Regarding.
- Ref: 1. Granite Quarry lease application prepared by Tmt.D.Rani, S/o.E.Dhanapal, Old No.D/364, New No.D11, Ukkira Kalamman Koil Street, Anna Nagar, Thennur, Trichy District, date: 08.08.2022
2. Government letter No. 711/MMB.2/2023-1 Dated:28.10.2024
3. Revised draft mining plan submitted by the applicant dated:15.05.2025
4. Director, Geology and Mining, Chennai, Mining Plan approved letter Rc.No.5564/MM2/2020, Dated:06.08.2025.
5. Tmt.D.Rani, letter Dated: 21.08.2025
-

In the reference 1st cited Tmt.D.Rani, has preferred an application for the grant of a multicoloured Granite quarry lease over an extent of 2.93.0 hectares of patta lands in S.F.No.75/1B(0.38.0 hect), 75/3A(0.02.0 hect), 76/1(1.16.0 hect), 78/1(0.16.0 hect) and 78/2(1.21.0 hect) of Veeriyapalayam village, Krishnarayapuram Taluk in Karur District for the grant of quarry lease for a period of 20 years under the provisions of rule 19-A of Tamilnadu Minor Mineral Concession Rules 1959 and the same had been recommended and forwarded to the

government through the Director of Geology and Mining, Chennai. Precise area was communicated by the Government for the proposed lease area vide reference 2nd cited.

Accordingly, the applicant Tmt.D.Rani has submitted the 5 copies of revised Mining Plan and the same was approved by the Director, Geology and Mining, Chennai vide reference 4th cited.

In the reference 5th cited, the applicant has requested to the Deputy Director of Geology and Mining, Karur to provide the details of existing, proposed, expired and abandoned quarries situated within 500 meter radial distance from the subject area and the same has been furnished as detailed below:-

I. Existing Quarries: -

Sl No.	Name of the lessee/firm it holder	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	Thiru E.Dhanapal S/o Errachi Rddiyar Old NO D/364 New No.D/11 Ukkara Kaliyaman Street Anna Nagar, Thennur, Trichy District.	Krishnarayapuram Taluk Veeriyapalayam Village	74/2, 74/3A1A, 74/3A1B, 74/3A2 74/3B, 75/2A1 75/1A, 75/2A2 75/2B, 75/3B 75/3D	4.89.0	21.02.2014 to 20.02.2034
2.	Tvl.Vinayaka Enterprises, No.20/615 Vethasalapuram, Thogamalai, Kulithalai Taluk, Karur District	Krishnarayapuram Taluk Veeriyapalayam Village	72/2A 72/3 72/4A 72/4B	3.90.5	24.02.2023 to 23.02.2043

II. Proposed Quarries: -

Sl No.	Name of the lessee/firm it holder	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1	Tmt.D.Rani, W/o. E.Dhanapal Old No.D/364, New No.D11, Ukkira Kaliyaman Koil Street, Anna Nagar, Thennur,	Krishnarayapuram Taluk Veeriyapalayam Village	75/1B 75/3A 76/1 78/1 78/2	2.93.0	-

III. Lease Expired Quarries : -

Sl No.	Name of the lessee/firm it holder	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	Nil				

IV. Abandoned Quarries : -

Sl No.	Name of the lessee/firm it holder	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	Nil				

W. S. S. S.
21/08/25
Deputy Director,
Geology and Mining,
Karur.

21/08/25

**MINING PLAN ALONG WITH
PROGRESSIVE QUARRY CLOSURE PLAN FOR
VEERIAMPALAYAM MULTI COLOUR GRANITE QUARRY**

(Under Rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959 and
Rule 12, 13 & 16 of Granite Conservation and Development Rules, 1999)

Patta Land/ Lease Period: 20 Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT : 2.93.0 HECTARES
S.F.Nos. : 75/1B, 75/3A, 76/1, 78/1 and 78/2
VILLAGE : VEERIAMPALAYAM
TALUK : KRISHNARAYAPURAM
DISTRICT : KARUR
STATE : TAMIL NADU

FOR

APPLICANT/LESSEE

TMT. D. RANI,

W/o. E. Dhanapal,
Old No. D/364, New No. D/11,
Ukkira Kaliyamman Koil Street,
Anna Nagar, Thennur,
Trichy District,
Tamil Nadu – 620 017.

PREPARED BY

B. VENGADAGIRI, M.Sc.,

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

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



ABBREVIATIONS

• EIA	-	Environmental Impact Assessment
• EMP	-	Environment Management Plan
• ToR	-	Terms of Reference
• SEIAA	-	State Level Environment Impact Assessment Authority
• MoEF&CC	-	Ministry of Environment, Forest and Climate changes
• MSL	-	Mean Sea Level
• CPCB	-	Central Pollution Control Board
• TNPCB	-	Tamil Nadu Pollution Control Board
• FMB	-	Field Measurement Book
• S.F.No.	-	Survey Field Number
• GSI	-	Geological Survey of India
• DMS	-	Director of Mines Safety
• DGMS	-	Director General of Mines Safety
• MMR	-	Metalliferous Mines Regulations
• MCR	-	Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules
• TNMMCR	-	Tamil Nadu Minor Mineral Concession Rules
• EMP	-	Environment Management Plan
• NGT	-	National Green Tribunal
• NONEL	-	Non Electric
• CRZ	-	Coastal Regulatory Zone
• HACA	-	Hill Area Conservation Authority
• QP	-	Qualified Person
• KLD	-	Kilo liters per day
• MT	-	Metric Tonne



D. RANI,
W/o. E. Dhanapal,
Old No. D/364, New No. D/11,
Ukkira Kaliamman Koil Street,
Anna Nagar, Thennur,
Trichy District,
Tamil Nadu – 620 017.

CONSENT LETTER FROM APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in respect of Veerampalayam Multi Colour Granite over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State has been prepared by

B. VENGADAGIRI, M.Sc.,
Qualified Person

I have entrusted the works to prepared the Mining Plan based upon the production requirements to meet as per the Mines Acts, Rules, Regulations and Amendments as on date. We request to the Commissioner, Department of Geology and Mining, Chennai to make further correspondence regarding the corrections of the mining Plan with the said Qualified Person at his following address.

B. VENGADAGIRI, M.Sc.,
No.105, 5th Cross,
Alagapuram
Salem District
Tamil Nadu – 636 010.
Mobile No. +91 86953 32233.

I hereby undertake that all the responsibilities of contents in the mining plan and if any corrections made in the mining plan by the Qualified Person may be deemed to have been made with our knowledge and consent and shall be acceptable to me and binding on me in all respects. If there is any substantial change during operation, we will carry out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the applicant

D. Rani
(D. Rani)

Place: Trichy

Date: 29.10.2024

D. RANI,
W/o. E. Dhanapal,
Old No. D/364, New No. D/11,
Ukkira Kaliyamman Koil Street,
Anna Nagar, Thennur,
Trichy District,
Tamil Nadu – 620 017.



DECLARATION OF APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in respect of Veerampalayam Multi Colour Granite over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State has been prepared in full consultation with me by

B. VENGADAGIRI, M.Sc.,
Qualified Person

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time.

Signature of the applicant

D. Rani
(D. Rani)

Place: Trichy

Date: 10.05.2025

CERTIFICATE FROM THE QUALIFIED PERSON

Certified that I, **B. VENGADAGIRI, M.Sc.**, residing at No.105, 5th Cross, Alagapuram, Salem District, Tamil Nadu - 636 010 holding a Post Graduate Degree in Geology (M.Sc., Applied Geology) from Annamalai University, Chidambaram and I worked in the field of Mining in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic, 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 along with Progressive Quarry Closure Plan in respect of Veerampalayam Multi Colour Granite quarry over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State for **Tmt. D. Rani**, W/o. E. Dhanapal, residing at Old No. D/364, New No. D/11, Ukkira Kalliamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State - 620 017. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person


(B. VENGADAGIRI, M.Sc.,)

Place : Salem

Date : 10.05.2025



B. VENGADAGIRI, M.Sc.,
No.105, 5th Cross,
Alagapuram
Salem District
Tamil Nadu – 636 010.
Mobile No. +91 86953 32233.



CERTIFICATE FROM THE QUALIFIED PERSON

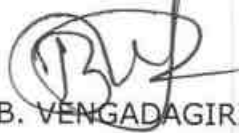
This is to certify that the Provisions of Granite Conservation and Development Rules, 1999 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Veerampalayam Multi Colour Granite over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State has been prepared for

TMT. D. RANI,
W/o. E. Dhanapal,
Old No. D/364, New No. D/11,
Ukkira Kalliamman Koil Street,
Anna Nagar, Thennur,
Trichy District,
Tamil Nadu – 620 017.

Whenever specific permissions/exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of Commissioner of Geology and Mining, Government of Tamil Nadu, Guindy, Chennai- 600 032 for such permissions/ exemptions/ relaxations and approvals.

It is also certified that information furnished in the above Mining plan are true and correct to the best of my knowledge.

Signature of the Qualified Person


(B. VENGADAGIRI, M.Sc.,)

Place: Salem
Date: 10.05.2025

B. VENGADAGIRI, M.Sc.,
No.105, 5th Cross,
Alagapuram
Salem District
Tamil Nadu – 636 010.
Mobile No. +91 86953 32233.



CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Veerampalayam Multi Colour Granite over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State has been prepared for

TMT. D. RANI,
W/o. E. Dhanapal,
Old No. D/364, New No. D/11,
Ukkira Kaliyammann Koil Street,
Anna Nagar, Thennur,
Trichy District,
Tamil Nadu – 620 017.

Whenever specific permissions/exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of the Director General of Mines Safety (DGMS), No. 5, IInd Street, Block – AA, Anna Nagar, Chennai, Tamil Nadu for such permissions/ exemptions /relaxations and approvals.

It is also certified that information furnished in the mining plan are true and correct to the best of my knowledge.

Signature of the Qualified Person


(B. VENGADAGIRI, M.Sc.,)

Place: Salem
Date: 10.05.2025



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LIST OF PLATES

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY

CLOSURE PLAN FOR VEERIAMPALAYAM MULTI

COLOUR GRANITE QUARRY

(Under Rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959 and 12, 13 and 16 of Granite Conservation and Development Rules, 1999)

INTRODUCTION AND EXECUTIVE SUMMARY:

The applicant **Tmt. D. Rani**, W/o. E.Dhanapal, residing at Old No. D/364, New No. D/11, Ukkira Kaliyamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State – 620 017 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 quarry lease for quarrying Multi Colour Granite for over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veeriampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State for a period of twenty years under Rule 19-A of Tamil Nadu Minor Mineral Concession Rules, 1959. The followings are the statutory requirements with respect to Multi Colour Granite quarry (Refer Annexure No. I).

1. Tmt. D. Rani, W/o. E.Dhanapal quarry lease application dated: 08.08.2022.
2. From the District Collector, Karur, Letter Rc.No.850/Mines/2018, dated: 29.08.2022.
3. From the Commissioner of Geology and Mining, Chennai, Note File Rc.No.5564/MM2/2022, dated: 11.01.2023.

The application was examined, Scrutinized, Inspected and processed by the state Government and issued a Precise Area Communication letter vide **letter No. 711/MMB.2/2023-1, Dated: 28.10.2024** under Rule 19-A of Tamil Nadu Minor Mineral Concession Rules, 1959 for submission of approved Mining plan within 90 days and obtain Environmental Clearance from the State Level Environment Impact Assessment Authority, Tamil Nadu under rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 with the following conditions to provide (Refer Annexure No. I):-

1. A safety distance of 7.5 meters should be provided to the adjacent patta lands and should not cause any hindrance to them while quarrying.
2. A safety distance of 50 meters should be provided to the LPT line passing through the applied area.
3. Applicant should submit the registered consent by the pattadhar for the applied area before granting of G.O.
4. Granite waste materials should be dumped within the quarry lease area and should not be dumped in the outside lands.
5. Environmental Clearance should be obtained from the Competent Authority in respect of the subject area as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the notification of the Ministry of Environment and Forest and any other clearances if any.



6. The four boundaries of the applied area are fixed and the quarrying activity should be restricted within the area granted on lease.
7. The applicant should fence the lease granted area with Barbed wire before the execution of the lease deed as follows:
 - ❖ The applicant shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
 - ❖ The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
 - ❖ The applicant shall incorporate all the Geo Coordinates taken by the DGPS survey by the agency authorized by Commissioner of Geology and Mining for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.
 - ❖ A soft copy of the digitalized map with the Geo Coordinates of the boundary pillar and shape file of the lease boundary should be submitted in the CD form to the Assistant/Deputy Director (G&M), Karur and the Commissioner of Geology and Mining.
8. Barbed wire fencing or Compound wall should be erected all along the boundary of the lease granted area.
9. The applicant should use mild explosives during quarrying.
10. Child labourers should not be engaged in the quarry works.
11. The applicant should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
12. The conditions mentioned in G.O. (Ms) No.79, Industries Department, dated 06.04.2015 should be complied with.
13. The applicant should comply with the conditions stipulated in the Government of India, Ministry of Mines order No. 11/02/2020, dated 14.01.2020 issued as per the order of Hon'ble Supreme Court of India dated 08.01.2020 that "the Mining lease holders shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to this mining activities and restore the land to a condition which is fit for growth of fodder, flora and fauna, etc."
14. A Green belt should be constructed to prevent sound and air pollution due to the proposed quarrying activity by planting at least 500 seedlings of Neem and Pungan all around the area.
15. The applicant shall strictly adhere to the statutory and safety requirements.
16. Quarrying shall be done as per the approved Mining Plan and that the mining plan is



approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

17. The applicant shall submit scheme of mining; mine closure plan and other requirements within the time stipulated for submission of the above, as per Rules.
18. Quarrying activity should be carried out from 7.00 A.M. to 5.00 P.M. only.
19. If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.

This Mining Plan along with Progressive quarry closure Plan is prepared in full consent with **Tmt. D. Rani**, W/o. E.Dhanapal, residing at Old No. D/364, New No. D/11, Ukkira Kalliamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu - 620 017, in respect of Veeriampalayam Multi Colour Granite quarry over **an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veeriampalayam Village, Krishnarayapuram Taluk, Karur District**. This mining plan is prepared under Rules 19-A and 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and Rules 12, 13 and 16 of Granite Conservation and Development Rules, 1999 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.

This 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 mining plan is prepared by considering as amended Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

The applicant ensures to comply all the condition stipulated by the Government before the execution of lease deed and during the course of quarrying operations.

In order to ensure compliance of the order of the Honorable 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.

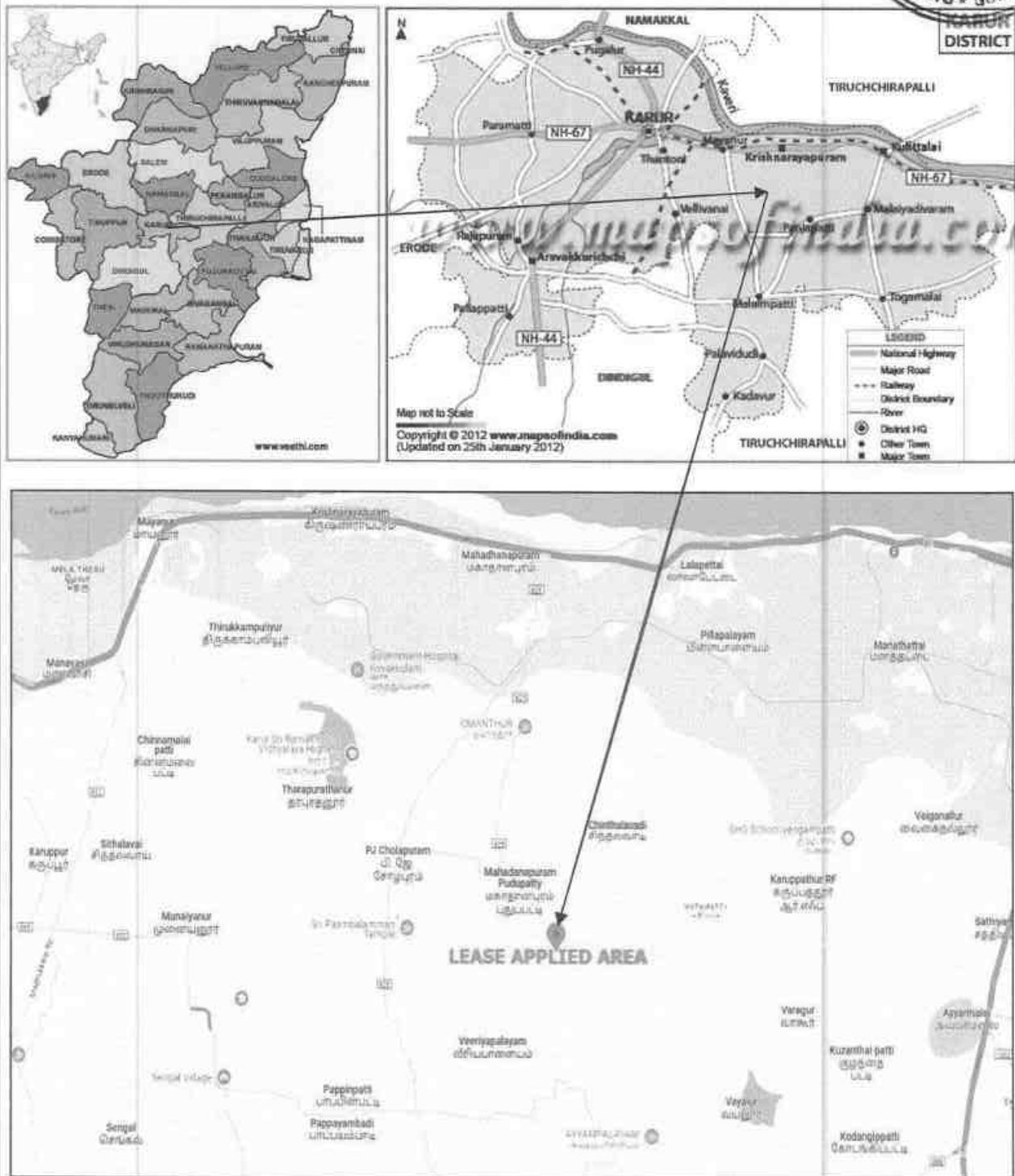
The field investigation was carried out by the Qualified Person and his Team as on 29.10.2024.

1.0 GENERAL:		
1.1	Name and address of the applicant:	Tmt. D. Rani, W/o. E.Dhanapal Old No. D/364, New No. D/11 Ukkira Kaliamman Koil Street Anna Nagar, Thennur Trichy District Tamil Nadu – 620 017 Contact No. : +91 94431 26726 E-mail ID : omsakthitile@gmail.com Aadhaar No. : 6410 3247 4153 (Refer annexure No. VIII)
1.2	Status of the applicant:	Individual
1.3	Mineral which the applicant intends to mine:	Multi Colour Granite
1.4	Period for which the mining area is required:	Twenty years as mentioned in Precise area Communication letter.
1.5	Name and address of the Qualified Person who prepared the mining plan:	B. VENGADAGIRI, M.Sc., Qualified Person (As per Rule 15(I)(a) and (b) of MCR 2016) Address : No.105, 5 th Cross Alagapuram Salem District Tamil Nadu – 636 010 Mobile No. : +91 86953 32233 E-mail ID : vengatb6@gmail.com (Refer Annexure No. X and X-A).
1.6	Name and address of the prospecting agency:	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 of the commercial granite deposits of Tamil Nadu. Besides, the Qualified Person and his team members made a detailed geological study of the area and demarcated clearly the Multi Colour granite deposit with a mine surveyor. The granite formation is clearly visible right from the outcrops. No detailed prospecting carried out. <u>Address of the prospecting Agency:</u> STATE GEOLOGICAL DEPARTMENT O/o The Commissioner of Geology and Mining Thiru Ve Ka industrial Estate, Guindy, Chennai – 32.
1.7	Reference no. Date of grant/ Precise Area Communication received from the State Government:	The Precise area Communication letter has been issued from the State Government, Tamil Nadu vide letter No. 711/MMB.2/2023-1, Dated: 28.10.2024, (Refer Annexure No. I).



2.0 LOCATION AND ACCESSIBILITY:

The lease applied area is located about 26km Southeastern side of Karur town, 8km Southeastern side of Krishnarayapuram town and 2.8km Northeastern side of Veeriampalayam Village (Please refer plate No- I, IA and IB).

Location Map of the Lease Applied area



2.1	Details of the area:	a) Extent (Ha.)	2.93.0			
		b) Survey Numbers	S.F. No.	Extent (Ha.)	Patta No.	
			75/1B	0.38.0	3391	
			75/3A	0.02.0	2086	
			76/1	1.16.0	3525	
			78/1	0.16.0	3414	
			78/2	1.21.0	1910	
			Total	2.93.0	-	
Source: As per the FMB, Patta and 'A' register record furnished by the applicant.						
c) Village	Veeriampalayam					
d) Taluk	Krishnarayapuram					
e) District	Karur					
2.2	Whether the area recorded to be in Forest Department:	The area does not falls under forest land of any category. It is patta lands. Classified as punjai in the village records.				
2.3	Ownership / Occupancy and Classification of the area:	It is patta lands, registered in the name of Thiru. E. Dhanapal, S/o. Erachi Reddiar vide patta Nos. 3391, 2086, 3414, 1910 and 3525 (Please refer Annexure No. IV to VI). The applicant has obtained consent from the pattadhar for the period of Twenty five years from 18.10.2021 to 17.10.2046 (Please refer Annexure No. VII)				
2.4	Existence of public road / Railway line, if any nearby and approximate distance:	The approach road is available on the Southern side, which is connects to Lakshmanampatti - Vayalur village road located at 500m on the Southern side of the area. There is no other patta lands are encountered for the haulage of Multi Colour Granite (Please refer Plate No.I to IC). Road access is available from the quarry to state highways and National Highway, the traffic density is not much more due to the transportation of quarried out material. The Nearest Railway line is Trichy - Karur which is located about 6.8km on the Northern side of the area as per the GSI Toposheet and Google Map.				
2.5	Toposheet No. with Latitude and Longitude:	The area is marked in the Survey of India, Topo Sheet No. 58 J/05. The area lies between the Latitudes of 10°53'11.85785"N to 10°53'28.61999"N and Longitudes of 78°18'35.34535"E to 78°18'40.69562"E on WGS datum-1984. (Plate No. I & II) (Please refer Plate Nos. I to II as per the GSI Toposheet).				

**PART - A****3.0 GEOLOGY AND EXPLORATION:**

3.1	Topography:	The area is situated in undulated terrain. The gradient is gentle towards East and altitude of the area is about 130m - 131m above from MSL. The Multi Colour granite is clearly visible right from the outcrops exposed upto 2m height with physical weathering and the area is mostly covered by reddish gravelly soil having an average thickness of 1m.
3.2	Regional Geology & Geological Succession:	The Multi Colour Granite is medium to coarse grained in size. Plagioclase feldspar, Orthoclase feldspar and quartz are the major constituents and Pyroxene, Mica and other mafic minerals plays a secondary fiddle. The petrological settings of the area are simple and not a complicated phenomena. There are no major minerals observed in the vicinity of the proposed quarry. A brief description of the regional Geology is discussed below. The peninsular gneissic complex is the most wide spread group of rocks in many parts of Tamil Nadu. The southern domain of Tamil Nadu is characterized by the khondalite group of rocks (with subordinate amounts of Charnockite) and marked by the absence of BMQ and dolerite dyke systems. The most common varieties of granite are pink, grey and Multi Coloured ones. In the granites feldspar forms about 50%, quartz a little less and the rest accounted for by amphiboles and pyroxenes. This type occurs in the form of large massive bodies (Batholiths, laccoliths) spreading over hundreds of square kilometers exhibiting variation in colour and texture. Other types occur as lenses and bands within the gneisses and other metamorphic rocks. In these cases, the molten magma of granite has been emplaced into the earlier rocks as narrow, small bodies and partly interacting. Anorthosites, syenites, porphyries and like that generally considered along with the Multi Colour granites. In these rocks quartz is nearly absent when hornblende or biotite abundant, the rock may be dark green or almost black.



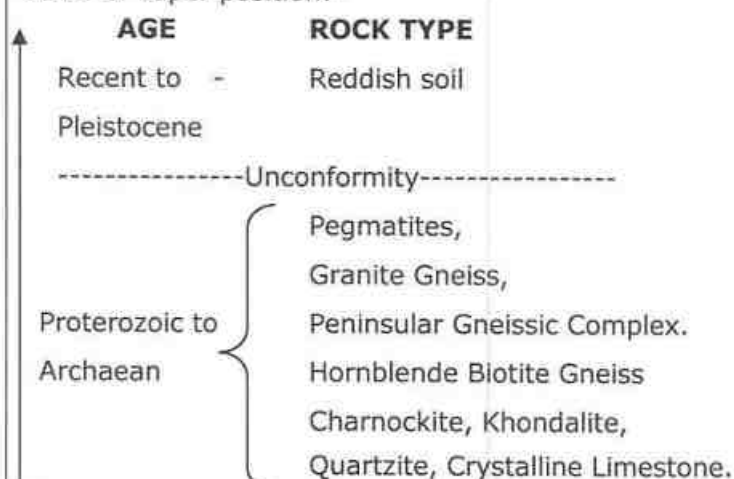
Granites were formed from molten rock referred to as "Magma" formed at great depths within the crust of the earth. Such rocks that were formed at great depths during the Archaean age were exposed at the surface of the earth as a result of the combined actions of wind, air, sun and water and weathering and denudation over the past several million years.

The Karur district is underlain by hard Crystalline rocks of Archaean age comprising of various rock types such as Gneiss, Charnockite, Granite Gneiss, etc.,.

STRUCTURAL SETTINGS OF KARUR:

The general geological sequence of the rock types in the area is:-

Order of super position:-



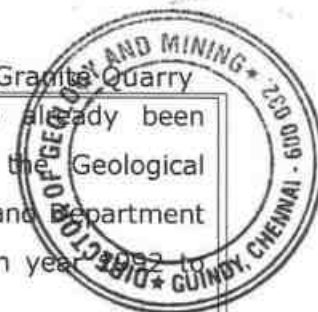
3.2.1 Geology of the lease applied area:

The rock formation is popularly known as "**Granite gneiss**" essentially made up of a supra crustal assemblages of Plagioclase feldspar, Orthoclase feldspar and quartz as major constituents and Hornblende, Biotite and other mafic minerals are accessories and closely inter banded with Hornblende Biotite Gneiss.

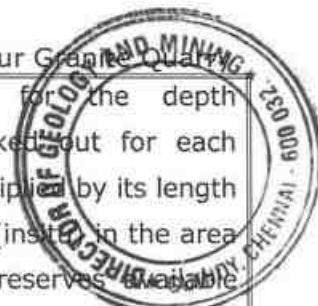
The "**Multi Colour Granite**" (**Granite Gneiss**) intruded between the batholithic formation of pre-existing country rock of Biotite Gneiss concordantly with trending of **N60°E – S60°W** with almost vertical dipping with an **average width of 100m** which stretches about entire area. The Multi Colour granite is clearly visible right from the outcrops exposed upto 2m height with physical weathering. The



		fresh Multi Colour granite is concealed under reddish gravelly soil having an average thickness of 1m and 2m. Weathered granite gneiss, totally overburden having an average thickness of 3m (1m topsoil + 2m weathered rock) below from the ground level. The Multi Colour granite is leucocratic, euhedral, medium to coarse grained, equigranular and the flow pattern of the rock mass in N60°E – S60°W. The Multi Colour Granite is observed on the surface level is pale pink in colour due to alkali feldspar domination and deep seated condition it may pale grey in colour. It is inferred that the minor strike and dip joints are present on the surface layers which may not have a good recovery, these and strike and dip joints may reduce in deep seated conditions. Some slender pegmatite veins are intruded in a crisscross fashion which is likely to be reduced at deep seated conditions. Taking in to consideration of the above geological factors, over burden and inter burden wastage during quarrying, other flaw and patches etc., the average recovery percentage without exploration has been assumed and estimated as 40% from the ROM upto a depth of 38m (1m Topsoil + 2m weathered rock + 35m Multi Colour Granite). The Physical attitude of the Multi Colour Granite deposit of this area is given below:- <table><tr><td>Strike Direction</td><td>- N60°E – S60°W</td></tr><tr><td>Dip amount and direction</td><td>- Almost vertical</td></tr><tr><td>Multi Colour Granite Strike Length</td><td>- 212m</td></tr><tr><td>Width</td><td>- 100m.</td></tr><tr><td>Proposed Depth (Including OB - 3m)-</td><td>38m</td></tr></table>	Strike Direction	- N60°E – S60°W	Dip amount and direction	- Almost vertical	Multi Colour Granite Strike Length	- 212m	Width	- 100m.	Proposed Depth (Including OB - 3m)-	38m
Strike Direction	- N60°E – S60°W											
Dip amount and direction	- Almost vertical											
Multi Colour Granite Strike Length	- 212m											
Width	- 100m.											
Proposed Depth (Including OB - 3m)-	38m											
3.3	DETAILS OF EXPLORATION:											
	3.3.1. Already Carried Out:	As far as Multi Colour Granite deposits are concerned, the only practical method is the systematic geological mapping and delineation of commercial Multi Colour Granite bodies within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects, etc.,										



		Such an exploration study has already been conducted regionally in this area by the Geological Survey of India (GSI) in the year 1966 and Department of Geology and Mining of Tamil Nadu in year 1993. Based on the valuable geological information and by the field investigation carried out by the QP and his team, the estimation of geological resources, mineable reserve is arrived and assumed based upon the anticipated waste saleable granite blocks and present market scenario.
	3.3.2 Proposed study to be carried out:	Even though the depth persistence of the Multi Colour Granite stone may be beyond 38m from the Petrogenetic character of the rock, only 38m (1m Topsoil + 2m Weathered rock + 35m Multi Colour granite) depth persistent has been taken as economically viable (at present scenario considering for the entire lease Period and not for the entire life of the mine) to calculate categories of proved, probable and possible reserves. The recovery of saleable Multi Colour Granite stones has been taken as 40% and if the recovery percentage is good or bad, it may enhance or decrease respectively. This estimation is based upon the machenaries available in the market at present scenario and the market demand for this type of granite. No definite programs for future exploration have been proposed. The quarrying activities for the next five years with deep cut as envisaged in the mining plan may render additional data as may be required for future planning. The attributes of the geological formation with respect to the saleable granite and waste ratio will be discussed in the ensuing scheme period.
3.4	Method of Estimation of Reserves:	The Geological plan demarcating the commercially marketable granite body has been prepared in 1:1000 Scale, totally four sections have been drawn, one along the strike direction as (X-Y) length wise and other three cross sections are drawn Perpendicular to strike as (A-B, C-D and E-F) width wise, Which is suitably chosen to cover the maximum area in the scale of 1:1000 (Please refer Plate No. IV).



The cross sectional area for the depth persistence of 38m has been worked out for each section. The cross sectional area multiplied by its length x breadth x Depth gives the volume (insitu) in the area wise. The sum total of the insitu reserves available within the block gives the geological resources of the quarry lease applied area.

From the Total Geological insitu resources, the quantity of saleable granite stones, quantity of rejects and waste generation are estimated by applying recovery factor as 40% by its volume. High efficient technology machineries, quarry masters, Market demand significantly determine the recovery percentage of granite quarries. The estimated recovery is based on today market scenario and available technology. This estimated recovery has been considered as only normative recovery. When the market demands, the applicant may take necessary steps to deploy a quarry masters with latest innovative machineries technology. So the recovery enhancement may raise to the peak production resulting more than 40%. During the operation the method of quarry, deployment of men and machineries will not have any significant impact on the Environment. It is worth mentioning the recovery anticipate the normative production has been scientifically converted into commercial production resulting in the decrease dump of waste inside the quarry. Due to the micro fractures, flaws, patches, xenoliths, required dimension, dressing, etc., the recovery in the granite may not be 100% of the R.O.M.

As the sale of Multi Colour Granite stone are in terms of Metric Tonne as in the case of major industrial mineral, the geological resources, Mineable reserves and quantum of waste generated etc are given in terms of Metric Tonne.

The details of estimation of geological resources and mineable reserves with reference to the geological plan & cross sections and conceptual plan and sections as shown in Plate No. IV, IX respectively has been furnished.

**3.5 ESTIMATION OF GEOLOGICAL RESOURCES AND GRADE:**

Maximum Length : 212m

Maximum Width : 112m (Granite + Side Burden)

Maximum Depth : 38m + 2m outcrop

Table - 1

Section	Bench	Length (m)	Width (m)	Depth (m)	Volume (m³)	Bulk Density	ROM (MT)	Recovery @ 40% (MT)	Waste @ 60% (MT)	Weathered Rock (MT)	Topsoil (MT)	Side Burden (MT)
XY-AB	Outcrop	420m²		3	1260	2	-	-	-	2520	-	-
	i	105	100	1	10500	2	-	-	-	-	21000	-
	ii	105	112	2	23520	2	-	-	-	47040	-	-
	iii	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	iv	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	v	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	vi	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	vii	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	viii	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	ix	105	100	5	52500	2.65	139125	55650	83475	-	-	-
		105	12	5	6300	2.65	-	-	-	-	-	16695
	Total							973875	389550	584325	49560	21000
XY-CD	Outcrop	216m²		2	432	2	-	-	-	864	-	-
	i	31	67	1	2077	2	-	-	-	-	4154	-
	ii	31	80	2	4960	2	-	-	-	9920	-	-
	iii	31	80	5	12400	2.65	32860	13144	19716	-	-	-
	iv	31	80	5	12400	2.65	32860	13144	19716	-	-	-
	v	31	80	5	12400	2.65	32860	13144	19716	-	-	-
	vi	31	80	5	12400	2.65	32860	13144	19716	-	-	-
	vii	31	80	5	12400	2.65	32860	13144	19716	-	-	-
	viii	31	80	5	12400	2.65	32860	13144	19716	-	-	-
	ix	31	80	5	12400	2.65	32860	13144	19716	-	-	-
Total							230020	92008	138012	10784	4154	-
XY-EF	Outcrop	1141m²		3	3423	2	-	-	-	6846	-	-
	i	76	40	1	3040	2	-	-	-	-	6080	-
	ii	76	60	2	9120	2	-	-	-	18240	-	-
	iii	76	60	5	22800	2.65	60420	24168	36252	-	-	-
	iv	76	60	5	22800	2.65	60420	24168	36252	-	-	-
	v	76	60	5	22800	2.65	60420	24168	36252	-	-	-
	vi	76	60	5	22800	2.65	60420	24168	36252	-	-	-
	vii	76	60	5	22800	2.65	60420	24168	36252	-	-	-
	viii	76	60	5	22800	2.65	60420	24168	36252	-	-	-
	ix	76	60	5	22800	2.65	60420	24168	36252	-	-	-
Total							422940	169176	253764	25086	6080	-
Grand Total							1626835	650734	976101	85430	31234	116865



Total Geological Resources in ROM	=	16,26,835 MT
Total Recoverable Resources @ 40%	=	6,50,734 MT
Granite waste @ 60%	=	9,76,101 MT
Weathered Rock (WR)	=	85,430 MT
Side Burden (SB)	=	1,16,865 MT
Total Waste (Granite waste + WR + SB)	=	11,78,396 MT
Topsoil	=	31,234 MT
Granite : waste ratio	=	1:1.8

The Geological resources are estimated based on the geological cross sections up to the economically workable depth of 38m below from the existing ground profile at the rate of 40% recovery yields 6,50,734 MT and 16,26,835 MT of ROM. The total geological resources are estimated as 38m depth for economically viable at present market scenario. At the end of the final year the applicant is advised to approach the competent authorities for Quarrying the granite below the proposed depth for which the provision is available for the preparation of modified mining plan as per the rule 16 (3) of GCDR, 1999.

3.6 TENTATIVE MINEABLE RESERVES AND GRADE:

Maximum Length : 189m

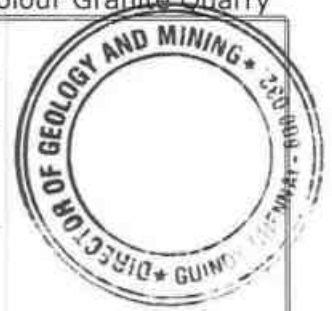
Maximum Width : 96m

Maximum Depth : 38m + 2m outcrop

Table - 2

Section	Bench	Length (m)	Width (m)	Depth (m)	Volume (m ³)	Bulk Density	ROM (MT)	Recovery @ 40% (MT)	Waste @ 60% (MT)	Weathered Rock (MT)	Topsoil (MT)
XY-AB	Outcrop	341m ²		3	1023	2	-	-	-	2046	-
	i	95	84	1	7980	2	-	-	-	-	15960
	ii	93	94	2	17484	2	-	-	-	34968	-
	iii	90	87	5	39150	2.65	103748	41499	62249	-	-
	iv	83	76	5	31540	2.65	83581	33432	50149	-	-
	v	77	65	5	25025	2.65	66316	26526	39790	-	-
	vi	70	53	5	18550	2.65	49158	19663	29495	-	-
	vii	63	40	5	12600	2.65	33390	13356	20034	-	-
	viii	57	30	5	8550	2.65	22658	9063	13595	-	-
	ix	45	19	5	4275	2.65	11329	4532	6797	-	-
Total							370180	148071	222109	37014	15960
XY-CD	Outcrop	130m ²		2	260	2	-	-	-	520	-
	i	31	52	1	1612	2	-	-	-	-	3224
	ii	31	63	2	3906	2	-	-	-	7812	-
	iii	31	55	5	8525	2.65	22591	9036	13555	-	-
	iv	31	45	5	6975	2.65	18484	7394	11090	-	-
	v	31	35	5	5425	2.65	14376	5750	8626	-	-
	vi	31	24	5	3720	2.65	9858	3943	5915	-	-
	vii	31	14	5	2170	2.65	5751	2300	3451	-	-
Total							71060	28423	42637	8332	3224
XY-EF	Outcrop	769m ²		3	2307	2	-	-	-	4614	-
	i	63	30	1	1890	2	-	-	-	-	3780
	ii	60	43	2	5160	2	-	-	-	10320	-
	iii	56	35	5	9800	2.65	25970	10388	15582	-	-
	iv	47	25	5	5875	2.65	15569	6228	9341	-	-
	v	38	15	5	2850	2.65	7553	3021	4532	-	-
	vi	28	5	5	700	2.65	1855	742	1113	-	-
Total							50947	20379	30568	14934	3780
Grand Total							492187	196873	295314	60280	22964

Total Mineable Reserves ROM	=	4,92,187 MT
Total Recoverable Reserves @ 40%	=	1,96,873 MT
Granite waste @ 60%	=	2,95,314 MT
Weathered Rock	=	60,280 MT
Total Waste (Granite waste + Weathered)	=	3,55,594 MT
Topsoil	=	22,964 MT
Granite : waste ratio	=	1:1.8



The mineable reserves are estimated by deducting the mineral locked up area under safety distance and bench loss. Hence the remaining area is taken for estimation of mineable reserves upto 38m depth.

The Multi Colour Granite body occurring in this area exhibits more or less uniform colour and texture. If any variation occurs during quarrying, such as cracks, joints, patches, colour variations etc, the defective area will be removed by chiseling. The formation is almost uniform and no gradational change is noticed except some shears Joints and cracks.

4.0 MINING:

4.1	Method of mining (opencast / underground)	Opencast method.
4.2	4.2.1. Mode of working (mechanized, manual)	It is a conventional mechanized quarrying operation. The mining of granite dimensional stones are concerned, observance of the provisions of Regulation 106(2) (a) and (b) is available with Director General of Mines Safety. If the applicant intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (a) and (b) of Metalliferous Mines Regulations, 1961. If any relaxation is required the applicant may apply to the Director of Mines Safety for which the provisions of relaxation of working on benches is possible as per the Regulation of Mines and Minerals (Development and Regulation) Act, 1957. This relaxation will be applied and obtained after the execution of lease/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 competent authority for necessary relaxation, clearance and permission.



The production of Multi Colour Granite dimension stone in this quarry involves the following method which is typical for granite stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock formation by carefully avoiding visibly seen defects such as patches veins, etc., is done by adopting the method of "diamond wire saw cutting" along the horizontal as well as two vertical sides on the front face of the formation.

This liberation of huge volume of granite body from the parent sheet rock is called "primary cutting". This huge portion is further split in to several blocks of desirable dimensions. The blocks thus splitted are removed from the pit to the dressing yard by using Crawler crane for further dressing.

Removing the defective portions and dressing them in to the dimension blocks are done manually using feather and wedges and chiseling respectively by the experienced skilled labours or by innovative machineries.

The defect free, dimensional stone of different sizes as approved in the market are thus produced by the method as described above, and the process is continuously monitored by applicant's experienced quality control Statutory personnel.

The waste material generated during quarrying activity includes rock fragments of different sizes, and also during dressing of the blocks. As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places earmarked for the purpose (Plate. No. VI).

The quarried out topsoil will be preserved all along the safety zone and utilized for formation of bund and green belt purpose (green belt).

4.2.2 Extent of Mechanization:

The following machineries are proposed for the development and production work at this quarry.

Table - 3

I. DRILLING AND CUTTING MACHINE

S.No.	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer	6	32	1.2m to 6m	Atlas Copco	Compressed air
2	compressor	2	-	400psi	Atlas Copco	Diesel drive
3	Diamond Wire saw	2	-	20m ³ /day	Optima	Diesel Generator
4	Diesel Generator	1	-	250kva	Kirloskar	Diesel

Table - 4

II. LOADING EQUIPMENT

S.No.	Type	Nos	Capacity	Make	Motive Power
1	Crawler Crane	1	1055	TATA P&H	Diesel Drive
2	Excavator	2	350	TATA Hitachi	Diesel Drive

III. HAULAGE WITHIN THE QUARRY & TRANSPORT EQUIPMENT

Table - 5

S.No.	Type	Nos	Capacity	Make	Motive Power
1	Tipper	2	20 Tons	TATA	Diesel Drive
2	Water Sprinkling Tanker	1	10,000 Liters	TATA	Diesel Drive

IV. TRANSPORT FROM THE QUARRY HEAD TO DESTINATION

Transportation from quarry head to customer destination is done by truck or by trailers.

V. MISCELLANEOUS:

Apart from the above the following tools and tackles are required for quarry operation.

For operation

The operation of granite quarry requires the following loose tools material and have to be kept sufficiently in stock for non - interruption of the quarry work.

Drill rods - 0.3m, 0.5m, 0.75m, 1.65m, 2.25m, 3m, 3.6m, 5m upto 9m.

2. Steel Alloy chains of sufficient length of 10m, 12m, 16m, 18m etc., sizes.

3.'D' shackles to link the chain lengths.

4. Rubber hose of required length.

5. Hose clamps to link the compressor delivery hoses.

6. Feather and wedges of 6" and 12" dia sizes utilize for splitting the block from the mother rock. This is an important tool in the operation of a quarry.

7. Crow bars.

8. Spades.

9. Sludge Hammer.

10. Iron Pans.

11. Pitcher Hammer.

12. Chisels.

13. Consumables, such as diesel, Hydraulic oil, grease, abrasive wheels, welding machines etc.,

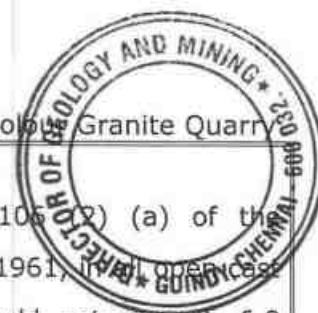
14. Stock of essential spare parts of machinery.

15. Explosive as per the licensed quantity.

16. Diamond Wire required length.

16. Besides diamond wire saw equipment and new innovative machine specifically for granite with accessories are required to liberate the rock from to parent body to minimize damage and to obtain good recovery.

Splitting the sheet rock by Diamond wire sawing which increases substantial recovery potential. Hence it is proposed to adopt "Diamond wire saw cutting" for best recovery. The above machineries are adequate to meet out the development and production schedule drawn out during this mining plan period.



4.3	Proposed bench height & width	5m Height and Width. Under the regulation 106 (2) (a) of the Metalliferous Mines Regulation 1961, in all open cast mining, the bench height should not exceed, 6.0 meter and bench width should not be less than bench height of the vertically cut face. In accordance with the Regulation 106 (2) (b) of the Metalliferous Mines Regulations 1961, in all open cast working where the ore body forms hard rock, the working faces and sides should be adequately benched and sloped; a bench height not exceeding 6m and a bench width not less than the bench height has to be maintained. The slope angle of such benches and sides should not exceed 60° from horizontal. However, observance of these statutory provisions in granite dimensional stone quarrying is difficult to maintain the 60° slope due to the field difficulties and technical reasons as below: 1. Recovery of the granite mineral is to be as undamaged rectangular dimensional blocks. In the attempt to form the benches and sides with the above statutory parameters haphazard blasting may be involved. In which case the commercial granite body may get spoiled inevitably due to generation of blasting cracks. 2. In the exercise of forming the benches with 60° slope within the granite deposit, the portion confined within the 60° as well as its complimentary part in the extricated block will become as mineral waste while shaping them into rectangular blocks. 3. The granite industry need blocks as huge as a few cubic meter volumes with measurements up to 3m x 2m x 2m. Production of such huge blocks in turn increases the recovery and



		reduces the mineral waste during dressing. Blocks of smaller size of certain varieties of granite are now marketable and have a good commercial value. 4. Formation of too many benches with more height and the width equal to the height may lead to mineral lock up. Hence, in order to avoid granite waste and to facilitate economical mining operations, it is proposed to obtain relaxation to the provisions of Regulation 106 (2) (b) upto a bench parameter of 5m height & 5m width with vertical faces. Such a provision of relaxation of the Regulation has been provided within the regulation 106 (2) (b). The entire terrain is made up of hard rock, compact sheet and possess high stability on slope even at higher vertical angles. The same will be inspected by the Director of Mines Safety and permission to be obtained under Regulation 106(2)(b) of the Metalliferous Mines Regulation, 1961. The factor of safety is anticipated as 1.2 to 1.5 which has a high stability even if it attains the ultimate pit limit. The overall pit slope angle as proposed will always be maintained from 40° to 50° in order to have a safe movement of men and machinaries working in the quarry. Hence, the slope stability of the quarry is well within the prescribed standards. Gradient of the ramps is proposed in such a way that it is not steeper than 1 in 10 and its length shall be more than 50m at one stretch.
4.4	Indicate proposed rate of production when the mine is fully developed, and the expected life of the mine and the year from which effected (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):	

**YEAR WISE DEVELOPMENT AND PRODUCTION FOR THE FIRST FIVE YEARS:**

Total Length = 189m

Maximum Width = 96m

Maximum Depth = 28m + 2m outcrop

Table - 6

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Volume (m³)	Bulk Density	ROM (MT)	Recovery @ 40% (MT)	Waste @ 60% (MT)	Weathered Rock (MT)	Topsoil (MT)
I	XY-AB	Outcrop	341m²		3	1023	2	-	-	-	2046	-
		i	69	84	1	5796	2	-	-	-	-	11592
		ii	65	94	2	12220	2	-	-	-	24440	-
		iii	26	56	5	7280	2.65	19292	7717	11575	-	-
	Total							19292	7717	11575	26486	11592
II	XY-AB	i	26	84	1	2184	2	-	-	-	-	4368
		ii	28	94	2	5264	2	-	-	-	10528	-
		iii	26	56	5	7280	2.65	19292	7717	11575	-	-
	XY-CD	Outcrop	130m²		2	260	2	-	-	-	520	-
		i	31	52	1	1612	2	-	-	-	-	3224
		ii	31	63	2	3906	2	-	-	-	7812	-
	Total							19292	7717	11575	18860	7592
III	XY-AB	iii	4	56	5	1120	2.65	2968	1187	1781	-	-
		iv	30	46	5	6900	2.65	18285	7314	10971	-	-
	XY-EF	Outcrop	769m²		3	2307	2	-	-	-	4614	-
		i	63	30	1	1890	2	-	-	-	-	3780
		ii	60	43	2	5160	2	-	-	-	10320	-
	Total							21253	8501	12752	14934	3780
IV	XY-AB	iv	16	46	5	3680	2.65	9752	3901	5851	-	-
		v	21	36	5	3780	2.65	10017	4007	6010	-	-
	Total							19769	7908	11861	-	-
V	XY-AB	v	15	36	5	2700	2.65	7155	2862	4293	-	-
		vi	26	26	5	3380	2.65	8957	3583	5374	-	-
		vii	16	16	5	1280	2.65	3392	1357	2035	-	-
	Total							19504	7802	11702	-	-
Grand Total								99110	39645	59465	60280	22964

Total Proposed Reserves in ROM	=	99,110 MT
Total Recoverable Reserves @ 40%	=	39,645 MT
Granite waste @ 60%	=	59,465 MT
Weathered Rock	=	60,280 MT
Total Waste (Granite waste + Weathered)	=	1,19,745 MT
Topsoil	=	22,964 MT
Granite : waste ratio	=	1:3.0

**Estimated Life of Quarry**

Mineable Reserves in ROM	=	4,92,187 MT
Mineable Reserves @ 40%	=	1,96,873 MT
Average production per year @ 40%	=	39,645/5 years = 7,929 MT
Estimated Life of the Quarry	=	1,96,873/ 7,929 MT
	=	25 years.

The average annual production per year would be 7,929 MT at the rate of 40% recovery. The **Annual peak production capacity in the quarry is estimated as 8,501 MT @ 40% recovery in 21,253 MT of ROM.** The proposed production schedule is arrived as per requirement by the applicant and the EIA and EMP will be prepared for an annual peak production.

Based on the above, and taking into consideration of the available Mineable reserves, **the life of quarry will be about 25 years** (considering all the safety factors) at 40% recovery, if the quarry is being worked out continuously with an average annual production of 7,929 MT. This calculation is based on the plan approved by Director of Mines Safety leaving Benches and Safety barriers. If the annual production increases considerably and consistently a modified mining plan will be prepared under Granite Conservation and Development Rules 1999 the same will be submitted to the relevant authorities for subsequent clearance and approval.

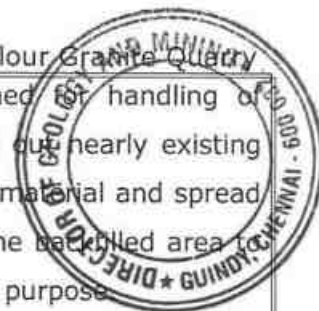
The proposed year wise quantum of excavation and the details of estimation of production quantity and generation of wastes are furnished with reference to the year wise development and production plan. More details of the year wise production parameters are explained with bench length, width and height in Plate No. V.

4.5	Attach a note furnishing a 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; lay outs, selection of permanent ultimate pit limit, depth of quarrying and ultimate pit, selection of sites for construction of infrastructure, etc., The ultimate pit size is designed based on certain practical parameters such as economical depth of quarrying, safety zones, permissible area, etc., The ultimate pit dimension of the quarry is given below. ULTIMATE PIT DIMENSIONS <u>Table - 7</u> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3">Maximum Dimensions in meters</th></tr> <tr> <th>Length</th><th>Width</th><th>Depth</th></tr> </thead> <tbody> <tr> <td>189</td><td>96</td><td>38 BGL (R.L. 131m - 93m)</td></tr> </tbody> </table>	Maximum Dimensions in meters			Length	Width	Depth	189	96	38 BGL (R.L. 131m - 93m)
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Length	Width	Depth									
189	96	38 BGL (R.L. 131m - 93m)									

However, during extraction of blocks each bench will be of 5m height with vertical slope for proper dimension cutting. The quantum excavation is estimated to be 5,431 MT (ROM 4,92,187 MT + Topsoil 22,964 MT + Weathered rock 60,280 MT) to a depth of 38m. The generation of total waste is estimated about 3,55,594 MT (Granite Waste 2,95,314 MT + Weathered rock 60,280 MT) and marketable Multi Colour Granite as 1,96,873 MT.

The excavated waste (1,19,745 MT) will be proposed to dump on the Southern side with dimension of (L)216m x (W)19m x (H)12.8m during the first five years, which will be act as temporary waste dump. When the quarry reaches its ultimate pit limit of 38m, if the mineral reserves available and Market persist, the applicant may apply a renewal of quarry lease as to develop and conserve mineral reserves. If the applicant attains the permission form the competent authorities to dump the waste in the non mining zone the attributes of the waste dump will be disussed in the ensuing scheme period. The Conceptual Mining is based upon the entire ROM proposed for the life of the Mine.

As per G.O.(Ms)No.04, Natural Resources (MMC.1) Department, Dated: 22.08.2023, if permission is granted for removal of waste from competent authorities, the waste material will be supplied to the needy crusher to making the M-Sand, building and road construction material after paying the seniorage fee and obtained necessary clearance and approval from concerned department for handling the waste. When the entire mineral reserves will be completely exhausted the remaining unsold overburden will be utilized for backfilling in the part of the pit and remaining pit will be allowed to collect seepage and rain water which will act as a temporary reservoir. This activituy will be carried out only after obtaining permission from the competent authorities and local community. If the mined out pit is been allowed to behave as a reservoir the same will be done after due procedure for the protection of reservoir.



		If permission not obtained for handling of waste, backfilling will be carried out nearly existing ground profile with entire waste material and spread out the preserved topsoil over the backfilled area to facilitate green belt development purpose. The quarry area will be fenced with barbed wire fencing also safety bund formed around the quarry to prevent inadvertent entry of public and cattle. (Please refer plate No. IX).

5.0 BLASTING:

5.1	Broad blasting parameters like charge per hole, blasting pattern, charge per delay, maximum number of holes blasted in a round, manner and sequence of firing, etc.	In general for granite quarrying does not involved deep hole drilling and heavy blasting, only secondary blasting is proposed with Jackhammer drilling by 35mm dia hole for removal of overburden and secondary fragmentation for handling the wastes. The granite industry needs blocks for about 3m x 2m x 2m for International buyers hence small blocks blasting pattern is not followed. The blasting pattern depends upon the texture of the rocks in the case of granite quarrying which in-turn depends upon the bedding plane, presence of fractures, fissures and cracks hence it is difficult to decide the definite particular pattern of holes in each blast. Now-a-days Diamond wire saws are used for splitting the blocks from parent sheet mass. It is a new innovative Eco-friendly splitting technique without involving blasting. This is increase the recovery percentage of granite blocks and reduces from induce fissures due to blasting. Besides those are noise free Eco friendly machineries. Hence, it is difficult to pronounce a definite pattern of holes with regard to spacing, burden and depth for secondary fragmentation. Hence, only blasting is proposed for secondary fragmentation for handling the wastes and not for production of granite blocks.

5.2	Type of explosives used / to be used.	In granite quarries, only diamond wiresaw machines are deployed for liberating the granite blocks from parent sheet mass. The waste thus generated after diamond wiresaw cutting will be fragmented by using low intensity explosives. This explosives are used only for size reduction to handle the waste from pit mouth to waste dumps. The aim is to recovery as large block as possible. During future development of quarrying, removal of over burden will be done by blasting with explosives that will be used are NONEL and 25mm Slurry explosives are proposed in 35mm dia holes drilled by Jackhammer.
5.3	Powder factor in ore and overburden/waste / development heading / stope.	Hence only low intense explosives like NONEL and Gelatin Sticks are used. Nonel initiation provides reasonably good solution to fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, flyrocks generated due to blasting operations. The overall cost of blasting in NONEL is very less and ecofriendly compared to electrical blasting and hence it optimizes the usage of explosives.
5.4	Whether secondary blasting is needed, if so describe it briefly	Blasting is proposed for secondary fragmentation for handling the large size waste blocks and removal of waste as development work not for production.
5.5	Storage of explosives (like capacity and type of explosive magazine).	Authorized explosive dealers supply the explosive at site as per the day's requirement. However, portable magazine 'M' type has been proposed to install in the ear marked places, and the applicant is advised to get necessary license from Controller of Explosives (Petroleum and Explosives safety Organization) for storing explosives in the above area after the grant of quarry lease. Splitting within the sheet rock is affected by diamond wire sawing which increases substantial recovery potential. Hence it is proposed to follow diamond wire saw cutting for better recovery and conservation of granite dimensional stone. The blasting and quarrying operation is advised to handle by competent qualified statutory personnels approved by the DGMS and competent authorities. The Competent Qualified Statutory personnel appointed by the applicant will maintain the records of Explosives as per the Indian Explosives Act, Mines Act and EP Act.

**6.0 MINE DRAINAGE:**

6.1	Likely depth of water table based on observations from nearby wells and water bodies.	Water level is found at a depth of 6m - 64m, which is observed with water level indicators from the nearby bore wells.
6.2	Workings expected to be _____ m. above / reach below water table by the year _____.	The quarry operations are confined to well above the water table. The quarry operation is proposed to a depth of 38m only below from the ground level.
6.3	Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged	The multi-colour granite consisting of no chemical effluent and toxic elements, hence there will be effluent discharge from Granite quarry is non-toxic. Hence the quality of water would not be affected by mining activities. Anyhow, Garland drain will be constructed all along the boundary to prevent surface run-off water entering into the quarry pit. If seepage water may encounter during rainy season, the same will be pumped out from the pit to settling tank through the garland drain by 5 HP motor pumps. After settling of particles from the drained water, the same will be utilized for Greenbelt development and water sprinkling on dust prone areas through the water sprinkler.

7.0 STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE:

7.1	Indicate briefly the nature and quantity of top soil, overburden / waste and mineral rejects likely to be generated during the next five years:	<table><tr><th colspan="4">Table - 8</th></tr><tr><th>Year</th><th>Top soil (MT)</th><th>Overburden/ Weathered rock (MT)</th><th>Mineral Reject (MT)</th></tr><tr><td>I</td><td>11,592</td><td>26,486</td><td>11,575</td></tr><tr><td>II</td><td>7,592</td><td>18,860</td><td>11,575</td></tr><tr><td>III</td><td>3,780</td><td>14,934</td><td>12,752</td></tr><tr><td>IV</td><td>-</td><td>-</td><td>11,861</td></tr><tr><td>V</td><td>-</td><td>-</td><td>11,702</td></tr><tr><td>Total</td><td>22,964</td><td>60,280</td><td>59,465</td></tr></table>	Table - 8				Year	Top soil (MT)	Overburden/ Weathered rock (MT)	Mineral Reject (MT)	I	11,592	26,486	11,575	II	7,592	18,860	11,575	III	3,780	14,934	12,752	IV	-	-	11,861	V	-	-	11,702	Total	22,964	60,280	59,465
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Total	22,964	60,280	59,465																															
7.2	Land Chosen for Disposal of Waste with proposed justification.	The excavated topsoil will be spread out all along the boundary barrier and utilized for construction of bund and afforestation purpose. The total waste to be produced during the first five years is around 1,19,745 MT (Granite waste 59,465 MT + Weathered rock 60,280 MT) the same will be proposed to dump on the Southern side. The dimension of waste dump is given table below (Refer Plate No. V). <table><tr><th colspan="3">Table - 9</th></tr><tr><th>Length(m)</th><th>Width(m)</th><th>Height(m)</th></tr><tr><td>216</td><td>19</td><td>12.8</td></tr></table>	Table - 9			Length(m)	Width(m)	Height(m)	216	19	12.8																							
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7.3	Attach a note indicating the manner of disposal and configuration, sequence of build up of dumps along with the proposals for the stacking of sub-grade ore, to be indicated year wise.	There is no subgrade mineral. As and when there is accumulation of mineral reject, the same is loaded into the tipper by loading machines and dumped in the respective places earmarked for the purpose. The waste management plan with reference to the quantum of waste generated is shown in quarry layout and Afforestation plan (Plate No.VI). There is no slurry anticipated in the quarry operation. Besides the granite waste does not produce any toxic effluent in the form of solid, liquid or gas

8.0 USE OF THE MINERAL:

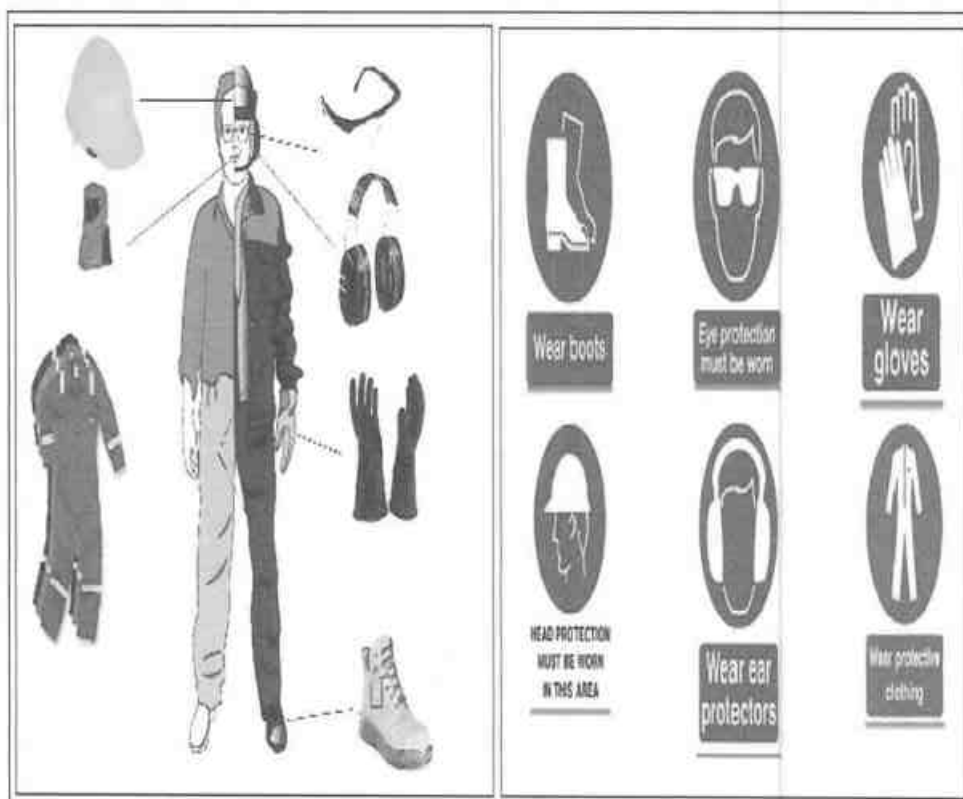
8.1	Describe briefly the end-use of the mineral (sale to intermediary parties, captive consumption, export, industrial use).	No captive use, the quarried out Multi Colour Granite blocks will be sold to the needy customers through out the contry in the form of required dimentional blocks. No processing is proposed in the applied area. The quarried out Multi Colour Granite blocks are either exported as rough blocks or processed in designated factories as value added products such as slabs, tiles, fancy items and, precision surface plates for construction and engineering application.
8.2	Indicate physical and chemical specifications stipulated by buyers.	No chemical parameters specified by the buyers, but the buyers are preferred Gang saw size blocks of dimensional stone such as having measurements of 3m x 2m x 2m.
8.3	Give details in case blending of different grades of ores is being practiced or is to be practiced at the mine to meet specifications stipulated by buyers.	Not Applicable.

**9.0 OTHERS:****Describe briefly the following:**

9.1	Site Services.	The simple methods and the limited scale of activities involved in granite dimensional stone quarrying does not require High Tension Electric Power supply or huge workshop facilities. The quarry office, storeroom, first aid room, Rest room, Hygienic modern Sanitary etc. are proposed to be constructed in semi-permanent structures within the lease applied area (Please refer Plate No. VI). The quarrying operation is restricted to one general shift during day time only. Major Machinery repair works are attended at Krishnarayapuram town (8km-NW) and minor repairs are carried out by the applicant's personnel at the quarry site itself.
	9.1.1 Welfare measures: a) Drinking water: Packaged Drinking water will be brought from the water venders in the Krishnarayapuram town which is located at 8km on the Northwestern side of the area. b) 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 will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. c) Labors Health: Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant's own cost as per the directions of DGMS.	

**d) Precautionary safety measures to the Workers:**

All Personal Protective Device with Safety Helmets, Mine Goggles, Ear Plugs, Ear Muffs, Nose Mask, Reflector Jackets and Safety Shoes will be provided to the workers as per the specification of Director of Mine Safety. Besides also conducting pre medical checkup for all workers for any health related problems proper training and induction will be given to quarrying personal to create awareness of conventional Eco friendly quarrying operations. Also the applicant ensure to registered in ongoing Labour Welfare Board insurance scheme to all the workers working under its control.



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

Table - 10

S.No.	Description- Nearest	Particulars	Aerial Distance & Direction															
1	National Highway	Trichy – Coimbatore (NH – 81)	6.7km															
2	State Highways	Manapparai – Kulithalai (SH – 71)	8.7km – East															
3	Railway station	Lalapettai	7.4km – NE															
4	Airport	Trichy	45.6km – SE															
5	Habitation	670m – West																
6	Town	Krishnarayapuram	8km – NW															
7	Government School	Punavasippatti Govt. Hr. Sec. School	3.0km – NE															
8	Government Hospital	Kovakkulam	6km – NW															
9	Reserved Forest	Lalapettai R.F. – 6.8km – North (Refer Plate No. IA).																
10	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.																
11	Nearby Water Bodies	Kuttai – 550m – SE																
12	Interstate Boundary	Around 132 km – SW (Kerala State Boundary)																
13	Critically Polluted areas identified by the CPCB	Around 145.2 km – West (Coimbatore, Kurichi – SIDCO)																
14	Protected areas Notified under wildlife (Protection) Act, 1972.	Kadavur Slender Ioris Sanctuary – 29.1 km – SW																
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)	EB-LPT line – Applied area (S.F.No.76/1) - 50m safety distance provided. There is no EB-HT line or Housing area situated within 50m radius.																
18	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North – S.F.No. 78/3 and Magadhanapuram Village. East – S.F.Nos. 78/4 and 76/2. South – S.F.No. 87 West – S.F.No. 75/1A, 75/2B, 75/3B, 75/3C and 75/3D.																
19	Adjacent Patta lands / Govt. Land	<table><tr><th>Direction</th><th>Classification</th><th>Safety Distance</th></tr><tr><td>North</td><td>Patta land</td><td>7.5m</td></tr><tr><td>East</td><td>Patta land</td><td>7.5m</td></tr><tr><td>South</td><td>Patta land</td><td>50m to the LPT line</td></tr><tr><td>West</td><td>Patta land</td><td>7.5m</td></tr></table> (Refer Plate No. II):	Direction	Classification	Safety Distance	North	Patta land	7.5m	East	Patta land	7.5m	South	Patta land	50m to the LPT line	West	Patta land	7.5m	
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East	Patta land	7.5m																
South	Patta land	50m to the LPT line																
West	Patta land	7.5m																

**STRUCTURE WITHIN 100m**

Number of Structures - 1 No.

Table - 11

Number of Structure	Type of Structure	Usage Purpose	Commercial / industry/ residential/ farm house/ Govt. building	Occupants of Building/ Structure	Remarks
1	Shed	Labour's rest shed- Adjacent quarry lease	Industrial purpose	No resident	Nil

STRUCTURE WITHIN 100 -200m

Number of Structures - Nil.

Number of Structure	Type of Structure	Usage Purpose	Commercial / industry/ residential/ farm house/ Govt. building	Occupants of Building/ Structure	Remarks
Nil	-	-	-	-	-

STRUCTURE WITHIN 200 -300m

Number of Structures - Nil.

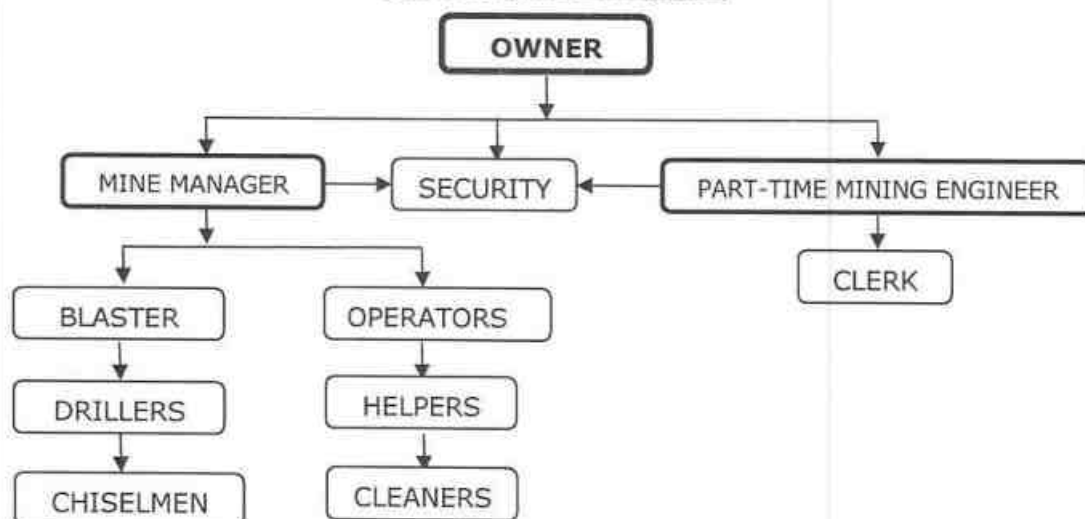
Number of Structure	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building/ Structure	Remarks
Nil	-	-	-	-	-

9.2**Employment Potential:**

The following manpower for machinaries as well as for operational activities are proposed to carry out the day-to-day quarrying activities at the peak production capacity and also to comply with the statutory provisions of the metalliferous mines regulations, 1961.

Table - 12

Designation	Present Employment position	Employees Requirement	Total
a) Supervisory category			
Mine Manager	-	1	1
Geologist	-	1	1
b) Skilled labour			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator - Operator	-	2	2
Crane Operator	-	1	1
Wire Saw Operator	-	2	2
Tipper Driver	-	2	2
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	18	18
c) Unskilled			
Security	-	1	1
Helper	-	2	2
Co-operator and Cleaner	-	8	8
Total	-	41	41

ORGANIZATION CHART

The above manpower is adequate to meet out the peak production schedule and the machinery strength envisaged in the mining plan and also to comply with the statutory provisions of the Mines Safety Regulations.

The proposed output per man shift:

Table - 13

Annual Peak Production @ 40%		8,501 MT
No. of days likely to be worked		300 days
Average production per day		28.3 MT
OMS =	Daily Production/Daily employment	$28.3/41 = 0.691$ MT

**10.0 MINERAL PROCESSING:**

10.1	If processing / beneficiation of the ore or minerals mined is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of the processing / beneficiation.	No mineral processing/beneficiation involved. The exploited blocks are carefully examined for any natural defects such as joints, cracks, xenoliths, secondary Pegmatitic growth, etc, and such defects is removed manually using feather and wedges and the blocks are then shaped into perfect rectangular dimensional stone blocks by manual chiseling.
10.2	Explain the disposal method for tailings or waste from the processing plant (quantity and quality of tailings proposed to be discharged, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralise any such effect before their disposal and dealing of excess water from the tailing dam).	Not applicable.
10.3	A flow sheet or schematic diagram of the processing procedure should be attached.	Not applicable.
10.4	Specify quantity and type of chemicals to be used in the processing plant.	Not applicable.
10.5	Specify quantity and type of chemicals to be stored on site / plant.	Not applicable.
10.6	Indicate quantity (cu.m. per day) of water required for mining and processing and sources of supply of water. Disposal of water and extent of recycling.	Wire Saw Cutting (Recycle and Reuse) - 2.0 KLD Water Sprinkling for dust suppression - 5.0 KLD Green belt Development - 1.5 KLD Drinking & Domestic purpose - 0.3 KLD Total - 7.8 KLD Source - Mine pit

**PART - B****11.0 ENVIRONMENTAL MANAGEMENT PLAN:****11.1 Baseline Information:**

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 followed the EIA / EMP for its compliance as per the CPCB / TNPCC Norms.

a) Existing land use pattern indicating the area already degraded due to quarrying / pitting, dumping, roads, processing plant, workshop, township etc., in a tabular form.

Table - 14

Description	Area at present (ha)	Utilized (%)
Area under Quarry	Nil	-
Waste dumps	Nil	-
Infrastructure	Nil	-
Road	Nil	-
Green Belt	Nil	-
Unutilized	2.93.0	100
Grand Total	2.93.0	100

b) Water regime:

Ground water level is about 60m - 64m depth below ground level. The quarrying is restricted up to 38m below ground level, hence the quarry operation will not intersect the ground water.

Garland drains will be constructed all along the boundary barriers to prevent the surface water flow inside the quarry and also to divert the surface water flow to the nearby natural drains.

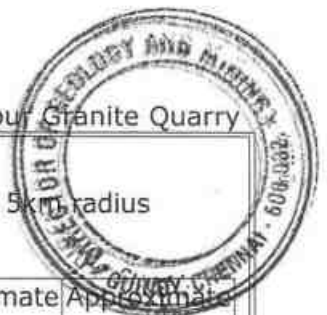
There is no major surface water body like river, reservoir or lake present within 50m radius of the area.

c) Flora and Fauna:

Groundnut, maize, cereals, Neem, Cocos nucifera, thorny bushes, Cissus quadrangularis, shrubs are observed around the area. No plants of botanical interest or scheduled fauna are recorded within the impact zone.

d) Climatic conditions:

The area receives rainfall of about 655mm/per annum and the rainy season is mainly from Oct - Jan during North East, monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 24°C.



	e) Human settlement:	Nearest habitation is 670m – West. There are few villages located within the 5km radius <u>Table – 15</u> <table><tr><th>S.No</th><th>Name of the Village</th><th>Direction</th><th>Approximate Distance</th><th>Approximate population</th></tr><tr><td>1.</td><td>Andirappatti</td><td>NE</td><td>1.5km</td><td>1,600</td></tr><tr><td>2.</td><td>M.Puduppatti</td><td>NW</td><td>1km</td><td>1,900</td></tr><tr><td>3.</td><td>Vayalur</td><td>SE</td><td>4km</td><td>3,900</td></tr><tr><td>4.</td><td>Veeriampalayam</td><td>SW</td><td>3km</td><td>3,600</td></tr></table>	S.No	Name of the Village	Direction	Approximate Distance	Approximate population	1.	Andirappatti	NE	1.5km	1,600	2.	M.Puduppatti	NW	1km	1,900	3.	Vayalur	SE	4km	3,900	4.	Veeriampalayam	SW	3km	3,600
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3.	Vayalur	SE	4km	3,900																							
4.	Veeriampalayam	SW	3km	3,600																							
	f) Public buildings, Monuments and Places of Worships:	There is no public building, place of worship or archaeological or Historical monument within 300m radius of the area.																									
	g) Weather the area falls under notified area under water (Prevention and Control of Pollution) act, 1974:	The area falls under notified area under water (Prevention and Control of Pollution) Act, 1974.																									
11.2	Attach an Environmental Impact Assessment Statement describing the impact of mining and beneficiation on environment on the following over the next five years:	The mining plan is proposed for very small production of granite dimensional stone without involving deep hole drilling and heavy blasting. Such limited quarrying activity is not likely to cause any significant impact adversely on environment as far as pollution of air, water and noise is concerned. If any significant variation found during the Half year compliance, the Environment Management Plan will be altered accordingly. Anyhow, the impacts are anticipated due to the mining operations and its mitigation measures are given below:																									
11.3	Attach an Environmental Management Plan:																										

Environment	11.2 Anticipated impact	11.3 Mitigation measures (EMP)
Land Environment	i. Topography of the area will change due to mining activity.	i. Backfilling is only mitigation measure for topographical changes. The part of the mine pit will be backfilled with mined waste at the end of life of quarry and preserved topsoil will be spread out over the backfilled area for reclamation and rehabilitation. If permission is granted by the state Government for disposal of waste to the crushing unit, there is no possibility of Backfilling. The mined out pits will act as a water reservoir. ii. The excavated benches shall be developed for plantation with grasses and herbs of local species to improve aesthetic of the area and to prevent any soil erosion and landslide. iii. Mining benches will not exceed beyond the approved height and width.
	ii. Soil quality and agriculture land on surrounding land environment will impact due to: a) Dust propagation during quarry operation like drilling, blasting, loading, unloading and movement of men, Vehicle and machineries. b) Vehicular and machineries emissions. c) Propagation of foreign material like polythene bag, jute bag, Plastic water and drinks containers and undecomposed waste materials dumping. iii. Inappropriate dumping of mined out soil and waste will impact the Soil quality of non-mining area.	i. Quarried out topsoil will be preserved separately in non-mining area (safety barriers) also grass cover and plantation will be forming to sustain the quality and quantity of soil and soil based organisms. ii. Regular water sprinkling on dust prone area like haul road and other active area to arrest dust generation. iii. Green belt will be developed in the safety barriers with thick long leave plants to prevent dust and vehicular emissions propagations. iv. Wet drilling with dust extractor unit will be carried out and quarry material will be handled under wet condition to minimize the dust generation. v. Non-Degradable materials like polythene bag, useless articles, plastic water and cool drink containers will not be allowed to litter and no ill managed dumping will be used for filling the excavated pits. vi. The waste material will be properly dumped in area earmarked for the purpose only to sustain the quality of soil on non-mining area.
Water Environment	i. Alteration of natural flow direction of surface run off rain water during rainy season due to modification of topography. ii. Inappropriate dumping of waste material shall affect the natural flow direction of surface run off rain water. iii. Contamination of surface water due to dust generation and vehicle emission due to quarry operation and movement of	i. Garland drain with check dam and settling tank will be constructed around the quarry to prevent surface run off rain water entering into the pit. ii. The waste material will be properly dumped on area earmarked for the purpose only and retaining wall with weep holes will be constructed around the dump.



	machinery and Vehicles. iv. Contamination of surface water during rainy season due to quarry operation and movement of machinery and Vehicles. v. A small amount of water (2.0 KLD) will be contaminated due to utilization of water for wire saw cutting.	iii. Mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater. iv. The pit water due to rain and seepage will be utilized for water sprinkling on the haul Roads and plantations after settling of silt. v. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents. The sewage water will be collected from the soak pit and disposed to the authorized wastewater treatment plant. vi. The contaminated water during wire saw cutting will be collected in a sump and the same will be recycled to reduce the water consumption.
Air Environment	In surface mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emissions from drilling, blasting, scooping, loading- unloading and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust generation 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/Trucks/vehicles to be used for loading.	i. Regular water sprinkling to the haul road to arrest the dust generation. ii. Green belt will be developed in the safety barrier which will be act as an acoustic barrier, the plants with thick long leaves will arrest the fugitive dust, sound and vehicular emissions on the surrounding environments. iii. Diamond wire saw cutting method does not produce dust. Anyhow, during development wet drilling with dust extractor unit will be carried out to minimize the dust generation. iv. Controlled blasting with Nonel initiation by Proper blasting techniques will be followed for effective rock fragmentation during development to reduce the fine dust propagation. v. Quarry material will be handled under wet condition during loading and unloading to minimize the dust generation of proposition, besides loaded materials are covered by Tarpaulin during transportation until reaches its destination. vi. Provision of dust filters/ mask (PPE) to workers working at dust prone areas. vii. Vehicular emission as a result of combustion of diesel generates small particulate matter (PM_{10} & $PM_{2.5}$), Nitrogen oxides and Sulphur dioxide (NO_2 & SO_2). High quality diesel will be used in the motor vehicles to control these pollutants. viii. PUC (Pollution under control) certified vehicles will be used for transportation.



Noise and Vibration	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.	ix. CPCB Prescribed emission standards for the vehicles would be followed. x. All vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations. i. Selection of new low - noise equipments under BS-VI for the quarry operation. ii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations. iii. Diamond wire saw cutting is proposed for mining activity, which is eco-friendly noise and vibration free machine. Anyhow, to ensure minimum vibrations and noise due to blasting during mine development, NONEL delay blasting is proposed for development works to control the Noise, Vibration and fly rock. iv. 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. v. 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. vi. Transporting vehicles are enforcing the speed limits of 25km/hour within quarry area and not exceed 40km per hour from quarry to destination; for reduce Noise and vibration level. vii. There would be restrictions on mining activity and vehicular movement during night hours.
Biological Environment	No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows: i. Disrupt the living insects in the overburden due to mining activity also which will induce the diversity of existing ecosystem. ii. Natural habitats of the existing faunas will change due to the noise and vibration during operation. iii. Mining may drive away the nearby residents from their habitat.	i. The barbed wire fencing and safety bund will be 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 by adopting well maintained machineries, equipments and diamond wire saw cutting for mining. iii. Fruit bearing trees will also be planted to survive the existing native Faunas. iv. There is no proposal for cutting any trees within the proposed area.



Socio Economic Environment	iv. Deposition of dust on the plant and crop leaves is affecting the photosynthesis, Pollination, growth ratio and agriculture productivity.	v. Water sprinkling on haul roads would be arrest the dust generation, thus avoiding damage to the crops and plants.
	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 41 persons for carrying out mining operations and give preference for employment to the local peoples. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. 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 and their economic status will be enhanced. iii. Improvement of Physical structure like Road Transport facilities, Communications, Medical, Educational and social benefits will be made available to the nearby civilian 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 road transport facilities, medical, social benefits will get enhanced. iv. There will be a positive enhancement of lifestyle of the nearby village.





11.4 Monitoring schedule for different Environmental Components after commencement of mining and other related activities:

i) Environmental impact assessment statement describing impact of mining on the next five years:

The mining plan is proposed for very small production of granite dimensional stones without involving deep hole drilling and heavy blasting. Such limited quarrying activity is not likely to cause any impact adversely on 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 competent authorities.

ii) Proposal for waste management:

The total waste to be produced during this mining plan period will be around 1,19,745 MT proposed to dump on the Southern side with maximum dimension of (L) 216m x (W) 19m x (Height) 12.8m. The quarried out topsoil 22,964 MT will be preserved all along the safety zone and utilized for green belt purpose.

The waste management plan with reference to the quantum of waste generated is shown in quarry layout plan (Please refer Plate No.VI). The maintenance of machineries & fueling will be carried out as per the TNPCB Norms and the waste will be disposed in manner.

iii) Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the proposed mining plan only 38m depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. After expiry of the lease period, if the mineral reserves available and Market persist, the applicant may apply a renewal of quarry lease as to develop and conserve mineral reserves. If permission is granted for removal of waste, the waste material will be supplied to needy crusher for convert to the M-Sand, building and road construction material from competent authorities after paying the seniorage fee. When the entire mineral reserves will be completely exhausted if permission obtained for disposal of waste the remaining unsold overburden will be utilized for backfilling in the part of the pit and remaining pit will be allowed to collect seepage and rain water which will act as a temporary reservoir. If permission not obtained for handling of waste, backfilling will be carried out nearly existing ground profile with entire waste material and spread out the preserved topsoil over the backfilled area to facilitate green belt development purpose.

The quarry area will be fenced with barbed wire fencing also safety bund formed around the quarry to prevent inadvertent entry of public and cattle (Refer plate No. VII and IX).

iv) programme of afforestation, year wise for the initial five years indicating the number of plants with name of species to be afforested under different areas in hectares:

The safety barrier along the North and Eastern side lease boundary has been identified and utilized for green belt development with 1,473m² area by not less than 1m height saplings with an anticipated survival rate of 80% for first five years and will be maintain atleast 1300 plants at the end of life of the quarry. Appropriate species of trees will be identified and planted in a phased manner as described below. The Green belt development will be carried out in the first 5 year plan period.

Table – 16

Year	No. of trees proposed to be planted		Area to be covered in applied area (m ²)	Name of the species
	Safety zone	Approach Road		
I	70	300	415	Poovarasu, Sarakondrai, Mookuchali maram, Mamaram, Thespesia populnea, Nuna, Mantharai, etc.,
II	70	100	415	
III	70	-	415	
IV	70	-	415	
V	70	-	415	

11.5 Proposed financial estimate / budget:

The Financial Estimate for Quarry operations and Environment Management Plan (EMP).

Table – 17

A. Machineries and Equipment Cost					
S.No.	Description				Approximate Cost (Rs.)
1.	Land Cost (As per Govt. Guideline value at present)				36,20,000
	S.F.No.	Extent (Ha.)	Cost/Ha.(Rs.)	Cost for area (Rs.)	
	75/1B	0.38.0	12,35,500	469490	
	75/3A	0.02.0	12,35,500	24710	
	76/1	1.16.0	12,35,500	1433180	
	78/1	0.16.0	12,35,500	197680	
	78/2	1.21.0	12,35,500	1494955	
	Total	2.93.0	12,35,500	36,20,015	
	Round off = Rs. 36,20,000/- (source : https://tnreginet.gov.in/portal/)				
2.	Labour Shed				5,00,000
3.	Sanitary Facility (Already Constructed)				1,00,000
4.	Excavator (2 Nos.)				1,00,00,000
5.	Crawler Crane (1 No.)				50,00,000
6.	Tipper (2 No.)				50,00,000
7.	Wire Saw (2 No.)				8,00,000
8.	Diesel Generator (1 No.)				7,50,000
9.	Compressor with loose tools (2 No.)				15,00,000
10.	Jack Hammer (6 Nos.)				3,00,000
11.	Drinking Water Facility				1,00,000
Total Machineries and Equipment Cost					2,76,70,000

B. Proposed financial estimate / budget for (EMP) Environmental Management Plan:

Budget Provision for the first five years period

B. EMP Cost:		Cost (Rs.)
1	Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 50,000/ year.	2,50,000
2	Water will be sprinkled in the haul roads by own water sprinkler for dust suppression. The cost would be around.	6,00,000
3	Fencing will be construct to prevent inadvertent entry of public and cattle, the cost is (1,250m length x Rs. 300/- per meter).	3,75,000
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 950m x Rs. 300/meter).	2,85,000
5	First aid room & accessories	50,000
6	Dust extractor unit for Jackhammer (6 Nos.).	1,50,000
7	Safety Kits for workers (Personnel Protective Equipment).	50,000
8	Greenbelt development for the safety barrier; the cost would be around (350 saplings x Rs. 200/sapling)	70,000
	Greenbelt development will be carried out on haul road; the cost would be around (400 saplings x Rs. 200/sapling).	80,000
Total EMP Cost		19,10,000

The EMP cost for the five years plan period would be around **Rs. 19,10,000/-**

Total Cost of the Project including EMP Cost	
Description	Cost (Rs.)
A. Machineries and Equipment Cost	2,76,70,000
B. EMP Cost	19,10,000
Total Project Cost (A+B)	2,95,80,000
C. The applicant Indents to involve Corporate Environment Responsibilities (CER) activity like Water purifier, Plantation, Books to library, Sanitary facility, Smart Class Board and other requirement to the Punavasippatti Govt. Hr. Sec. School at 2.0% from the total project cost. The cost would be around Rs. 5,92,000/-.	5,92,000
If relevant authority is directed to modify the CER cost and mode of utilization of the cost, the applicant will ensure to implement the same.	
Total Cost (A+B+C)	3,01,72,000

(Total project cost including EMP cost is about rupees three crore one lakh and seventy two thousand only).



12.0 PROGRESSIVE QUARRY CLOSURE PLAN:

12.1 Introduction:

The Progressive Quarry Closure Plan for Multi Colour Granite Quarry lease applied area over an extent of 2.93.0 Hectares of Patta lands in S.F.Nos. 75/1B, 75/1A, 76/1, 78/1 and 78/2 of Veeriampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State has been prepared for **Tmt. D. Rani**, W/o. E.Dhanapal, residing at Old No. D/364, New No. D/11, Ukkira Kalliamman Koil Street, Anna Nagar, Thennur, Trichy District, Tamil Nadu State – 620 017.

12.2 Present Land use pattern:

Land Use Table – 18

Description	Present area in (Ha)
Area under Quarry	Nil
Dump	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized	2.93.0
Grand Total	2.93.0

12.3 Reasons for closure:

Immediate closure is not planned due to sufficient reserves are available for the entire life of quarry. Hence, the reason for closure will be discussed in Final Mine Closure Plan.

12.4 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.

12.5 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and executing agency who is involved in the Preparation of progressive quarry closure plan.

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

Address : No.105, 5th Cross, Alagapuram
 Salem District

State with PIN Code : Tamil Nadu – 636 010.

Mobile : +91 86953 32233

Email : vengatb6@gmail.com

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



12.6 Review of Implementation of Mining Plan including Progressive Closure Plan upto the Final Closure Plan:

The Mining Plan and Progressive quarry closure plan are being submitted for the first time. Hence, review of implementation of progressive quarry closure does not arise at present. However, if any work done for progressive quarry closure during this Mining Plan period, it will be discuss an ensuing Scheme period.

12.7 Mine Closure Plan:

(i) Mined Out Land:

At the end of mining plan period the quarry operation carried out to a depth of 28m only out of 38m. When the remaining reserves will be completely exhausted, the mine closure plan will be prepared and submitted to the competent authority to obtain approval and the same will be implemented. Land use and land cover at various stages is given in the table below. At present the area is virgin.

Land use pattern

Table - 19

Description	Present Area (Ha)	Area required during Mining plan period (Ha)	Area at the end of life of quarry (Ha)
Area Under Quarry	Nil	1.25.98	1.25.98
Waste dump	Nil	0.40.14	# Backfilled
Site Services	Nil	0.01.00	0.01.00
Roads	Nil	0.01.00	0.02.00
Green Belt	Nil	0.20.75	0.76.01
Unutilized Area/ Stock	2.93.0	1.04.13	0.88.01
Grand Total	2.93.0	2.93.0	2.93.0

If permission is granted for disposal of waste from the State Government, the quarried out topsoil only utilized for backfilling. If permission not obtained for disposal of waste, backfilling will be carried out with total waste and spread out the preserved topsoil to facilitate green belt development in the backfilled area.

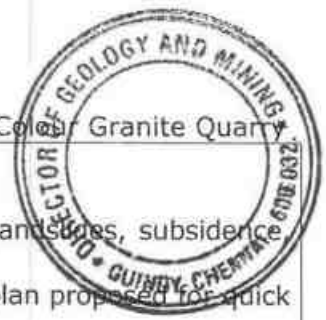
(ii) Disposal of mining machinery:

All the Machineries will be 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 utilized at another quarry area or sold out to the second hand. Hence, disposal or decommissioning of mining machinery does not arise.

**(iii) Safety & Security:**

Safety measures will be implemented to prevent access in the excavation area an 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 if the applicant intends to increase the height of the bench, necessary permission will be obtained from the concerned authority and implemented.
- Width of working bench will be kept about 5.0m for ease of operations and provide sufficient room for the movement of equipments.
- Personnel Protective equipment like dust masks, ear-plugs/ muffs and other equipments 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. Sufficient caution and sign boards will be kept in and around the quarry to induct public for awareness.
- Blasting will be carried out in a specific time after giving sufficient caution to the public such as danger signs shall be displayed near the excavations and siren alarm signal will be provide before small amount of blasting time for precautionary action of accident (blasting is carried out only for secondary fragments and not to liberate the Granite body from the parent rock mass).
- Security guards will be posted to prevent inadvertent entry of public.
- 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 accredited external agency as directed by authorities.

**(iv) 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.
- 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 temporarily 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.

Environmental Monitoring Cell:

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the competent authority from time to time.

Disaster Management Cell:

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care of 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.



(v) 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:

Mine roads and approach roads,

Fencing on approach roads,

Checking and maintenance of machines and equipment,

Drinking water arrangements,

Mine 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 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.

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

The quarry lease is granted for a period of twenty years only. As per the production Program 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.

**(vii) Time Scheduling For Abandonment:**

The lease applied area has enormous potential for continuance of operations even after expiry of the lease period. The details of time schedule of all abandonment will be given at the time of final closure plan.

(viii) 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:

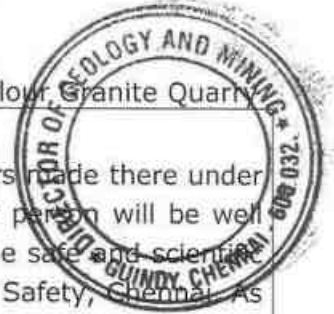
Table - 20

ACTIVITY		YEAR					RATE	Cost (Rs.)
		I	II	III	IV	V		
Plantation proposed under safety zone	Nos.	70	70	70	70	70	Rs.200 Per sapling	70,000
	Cost	14,000	14,000	14,000	14,000	14,000		
Plantation proposed in the Haul road	Nos.	300	100	-	-	-		80,000
	Cost	60,000	20,000	-	-	-		
Barbed wire fencing 1,250 Mtrs		3,75,000	-	-	-	-	Rs. 300 Per Meter	3,75,000
Garland drain 950 Mtrs		2,85,000	-	-	-	-	Rs. 300 Per Meter	2,85,000
TOTAL								7,10,000

13.0 MINERAL CONSERVATION AND DEVELOPMENT:

The mining plan proposed has fully covered all the aspects of Granite Conservation and development rules 1999, with a future plan to extend the proposed working of the quarry to the maximum possible workable depth of the deposit. Extreme care is taken to ensure proper supervision of quality control of the Granite dimensional stone aimed at the recovery of the maximum saleable quality and quantity of granite dimensional stones suitable for full utilization of the consumers.

Care is been taken for each process just to safeguard the material quarried in an economical and efficient manner by adopting systematic and scientific quarrying with the consultation and supervision of well experienced quarry persons.

**14.0 STATUTORY PROVISIONS:**

The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai. As per amendment notification in the EIA notification 2006 is given by Ministry of Environment, Forest and Climate Change vide S.O.1807(E), dated:12.04.2022, the validity of environmental clearance is through out end of lease period. 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 consultation 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 approval of mining plan or grant of lease. The document may be scrutinized by the competent authority before approval.

Place: Salem

Date: 08.11.2024.


DIRECTOR
Department of Geology & Mining
Quindy, Chennai - 600 032.

Prepared by

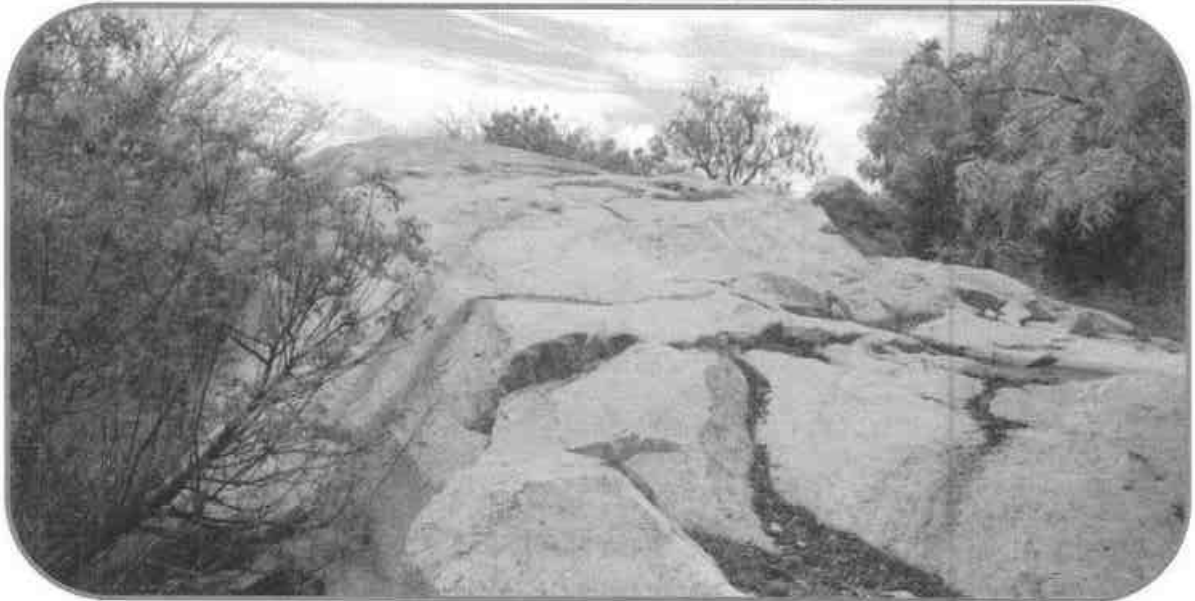
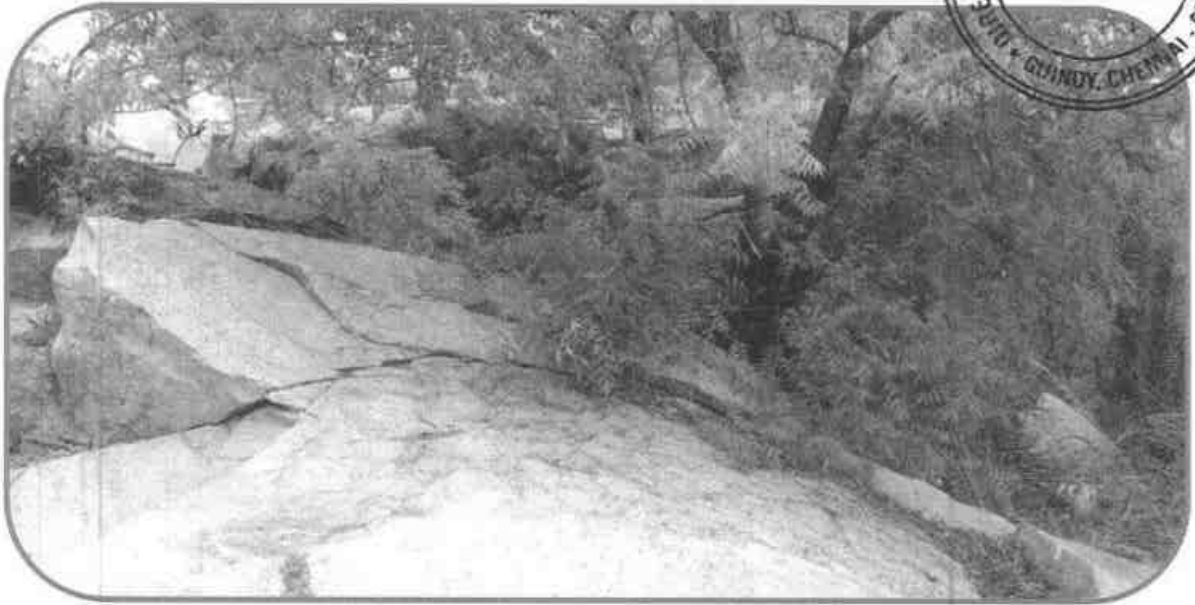
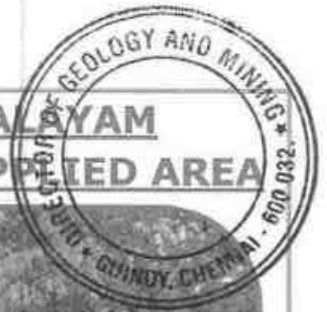

B. VENKADAGIRI, M.Sc.,
Qualified Person

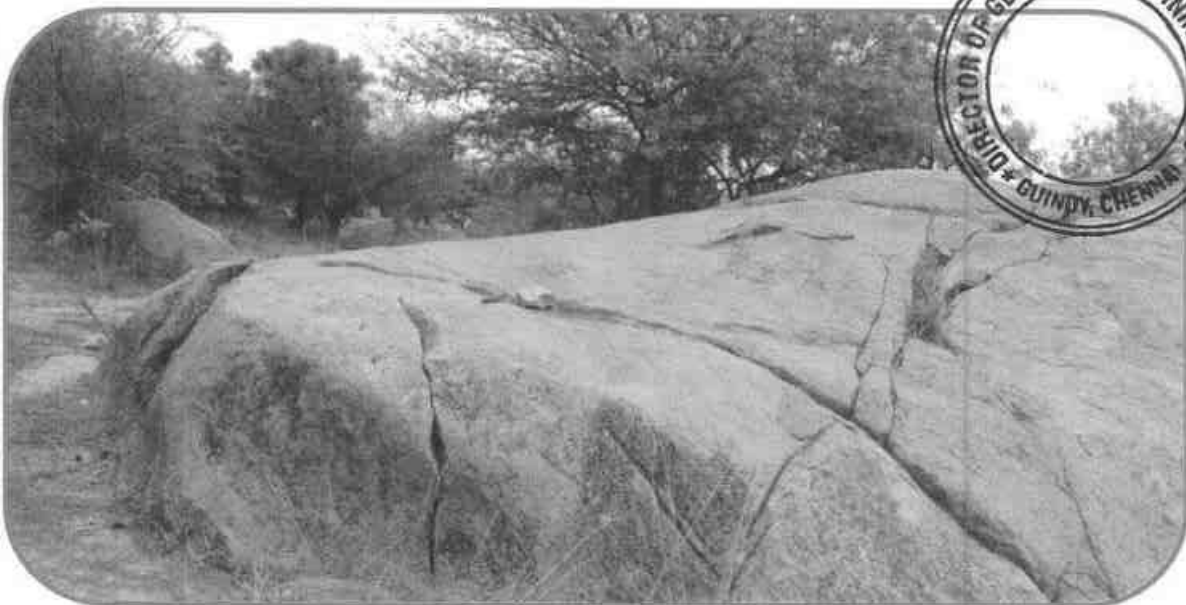
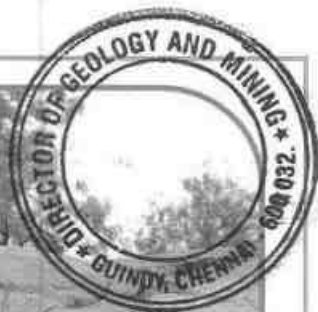
06/08/2024

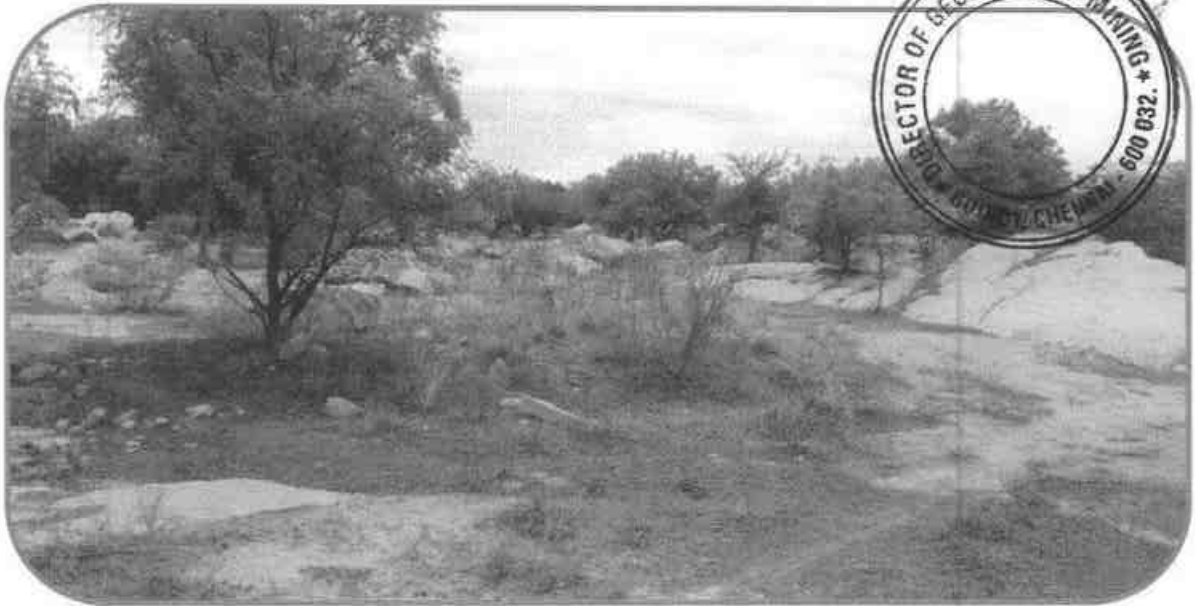
This Mining Plan is Approved
Subject to the Conditions / Stipulation
Indicated in the Mining Plan Approval

Letter No. 5564/Mmm2/2020 **Dated** 06/08/2024

**TOPOGRAPHICAL VIEW OF VEERIAMPALAYAM
MULTI COLOUR GRANITE QUARRY LEASE APPLIED AREA**









ANNEXURES



Natural Resources (MMB) Department,
Secretariat, Chennai-600 009

E.mail: indusmmb@tn.gov.in



Letter No.711/MMB.2/2023-1, Dated 28.10.2024

From

Thiru K. Phanindra Reddy, I.A.S.,
Additional Chief Secretary to Government (FAC).

To

Tmt.D.Rani,
W/o. E.Dhanapal,
Old No. D/364, New No.D/II,
Ukkira Kaliyammann Koil Street,
Anna Nagar,
Thennur, Trichy District.

Madam,

Sub: Natural Resources – Minor Mineral – Multi-colour Granite - Quarry lease application preferred by Tmt.D.Rani, Trichy district for quarrying of Multi-colour Granite over an extent of 2.93.0 hectares of patta land in S.F.Nos.75/1B (0.38.0 hectare), 75/3A (0.02.0 hectare), 76/1 (1.16.0 hectare), 78/1 (0.16.0 hectare) and 78/2 (1.21.0 hectare) in Veerampalayam Village, Krishnarayapuram Taluk, Karur District – Precise area communicated - Approved Mining Plan and Environmental Clearance – Called for.

- Ref:
1. Your Quarry Lease Application dated 08.08.2022.
 2. From the District Collector, Karur, Letter Rc.No.850/Mines/2018, Dated 29.08.2022.
 3. From the Commissioner of Geology and Mining, Chennai, Note File Rc.No.5564/MM2/2022, Dated 11.01.2023.

I am directed to invite attention to the references second and third cited, wherein the District Collector, Karur and the Commissioner of Geology and Mining, Chennai have recommended and forwarded your quarry lease application for grant of quarry lease for quarrying of Multi-colour Granite over

P.T.O



an extent of 2.93.0 hectares of patta land in S.F.Nos.75/1B (0.38.0 hectare), 75/3A (0.02.0 hectare), 76/1 (1.16.0 hectare), 78/1 (0.16.0 hectare) and 78/2 (1.21.0 hectare) in Veerampalayam Village, Krishnarayapuram Taluk, Karur District for a period of 20 years under rule 19-A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The Government carefully examined the recommendations of the District Collector, Karur and the Commissioner of Geology and Mining, to communicate precise area for quarrying Multi-colour Granite over an extent of 2.93.0 hectares of patta land in S.F.Nos.75/1B (0.38.0 hectare), 75/3A (0.02.0 hectare), 76/1 (1.16.0 hectare), 78/1 (0.16.0 hectare) and 78/2 (1.21.0 hectare) in Veerampalayam Village, Krishnarayapuram Taluk, Karur District and accordingly, the Government hereby communicate Precise Area for the above said area under sub-rule (13) of Rule 19-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease.

3. I am therefore to request you to furnish the Approved Mining Plan for the above-mentioned Precise Area through the Commissioner of Geology and Mining within a period of 3 months as per sub-rule (13) of Rule 19-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 and to produce Environmental Clearance obtained from the competent authority for the above said area for grant of quarry lease subject to the following conditions to the Government: -

1. A Safety distance of 7.5 meters should be provided to the adjacent patta land and should not cause any hindrance to them while quarrying.
2. A safety distance of 50 meters should be provided to LPT line passing through the applied area.
3. Applicant should submit the registered consent by the pattadhar for the applied area before granting of G.O.
4. Granite waste materials should be dumped within the quarry lease area and should not be dumped in the outside lands.
5. Environment Clearance should be obtained from the competent authority in respect of the subject area as per rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the notification of the Ministry of Environment and Forest and any other clearances if any.
6. The four boundaries of the applied area are fixed and the quarrying activity should be restricted within the area granted on lease.
7. The applicant should fence the lease granted area with barbed wire before the execution of lease deed as



follows:-

- ❖ The applicant shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
 - ❖ The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
 - ❖ The applicant shall incorporate all the Geo Coordinates taken by the DG PS survey by the agency authorized by Commissioner of Geology and Mining for the entire boundary Pillars of the area and the same should be clearly shown in the mining plan.
 - ❖ A soft copy of the digitalized map with the Geo Coordinates of the boundary pillar and shape file of the lease boundary should be submitted in the CD form to the Assistant/Deputy Director (G&M), Karur and the Commissioner of Geology and Mining.
8. Barbed wire fencing or Compound wall should be erected all along the boundary of the lease granted area.
 9. The applicant should use mild explosives during quarrying.
 10. Child labourers should not be engaged in the quarry works.
 11. The applicant should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme
 12. The conditions mentioned in G.O. No. 79 Industries Department, dated 06.04.2015 should be complied with.
 13. The applicant should comply with the conditions stipulated in the Government of India, Ministry of Mines order No.11/02/2020, dated 14.01.2020 issued as per the orders of the Hon'ble Supreme Court of India dated 08.01.2020 that, "the mining lease holders shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to this mining activities and restore the land to a condition which is fit for growth of fodders, flora and fauna etc."



14. A Green belt should be constructed to prevent sound and air pollution due to the proposed quarrying activity by planting at least 500 seedlings of Neem and Pungan all around the area.
15. The applicant shall strictly adhere to the statutory and safety requirements.
16. Quarrying shall be done as per the approved Mining Plan and that the mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
17. The applicant shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.
18. Quarrying activity should be carried out from 07.00 AM to 05.00 PM only.
19. If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.

4. The District Collector, Karur has instructed to obtain a sworn-in-affidavit from the applicant / firm, containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/MMB.2/2002-7, Industries Department, dated 09.01.2003 are complied with. Further, the District Administration / Geology and Mining Department should ensure the conditions imposed in G.O. (Ms) No.79, Industries (MMC.1) Department, dated 06.04.2015.

Yours faithfully,

M. Prabavathi
28/10/2024

for Additional Chief Secretary to Government (FAC).

[Signature]
28.10.2024

Copy to:

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

பெ. பி. ம. திருச்சிபாளையம்

பெ. பி. ம. திருச்சிபாளையம்

புல எண். 76

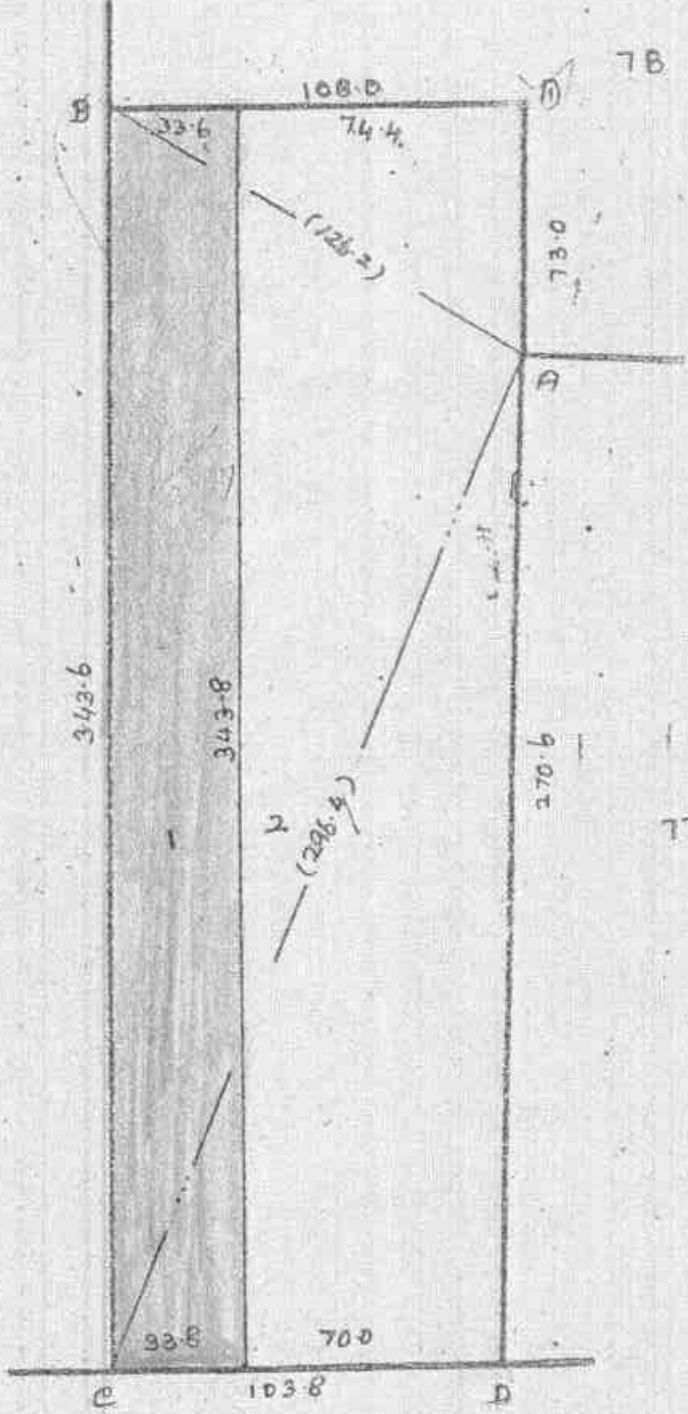
எண். 27

சிராமம்

பெ. பி. ம. திருச்சிபாளையம்

பெ. பி. ம. திருச்சிபாளையம்

பெ. பி. ம. திருச்சிபாளையம்



Handwritten signature and date 29/01/00

சுற்றுச்சூழல் அமைதி 23

B	
(126.2)	
378.624	
A	

LEASE APPLIED AREA

அளவு. 1:2000 மி.மீ

சுற்றுச்சூழல் அமைதி 23

பெயர்: திருச்சிராப்பள்ளி

அமைப்பு: எண் 23



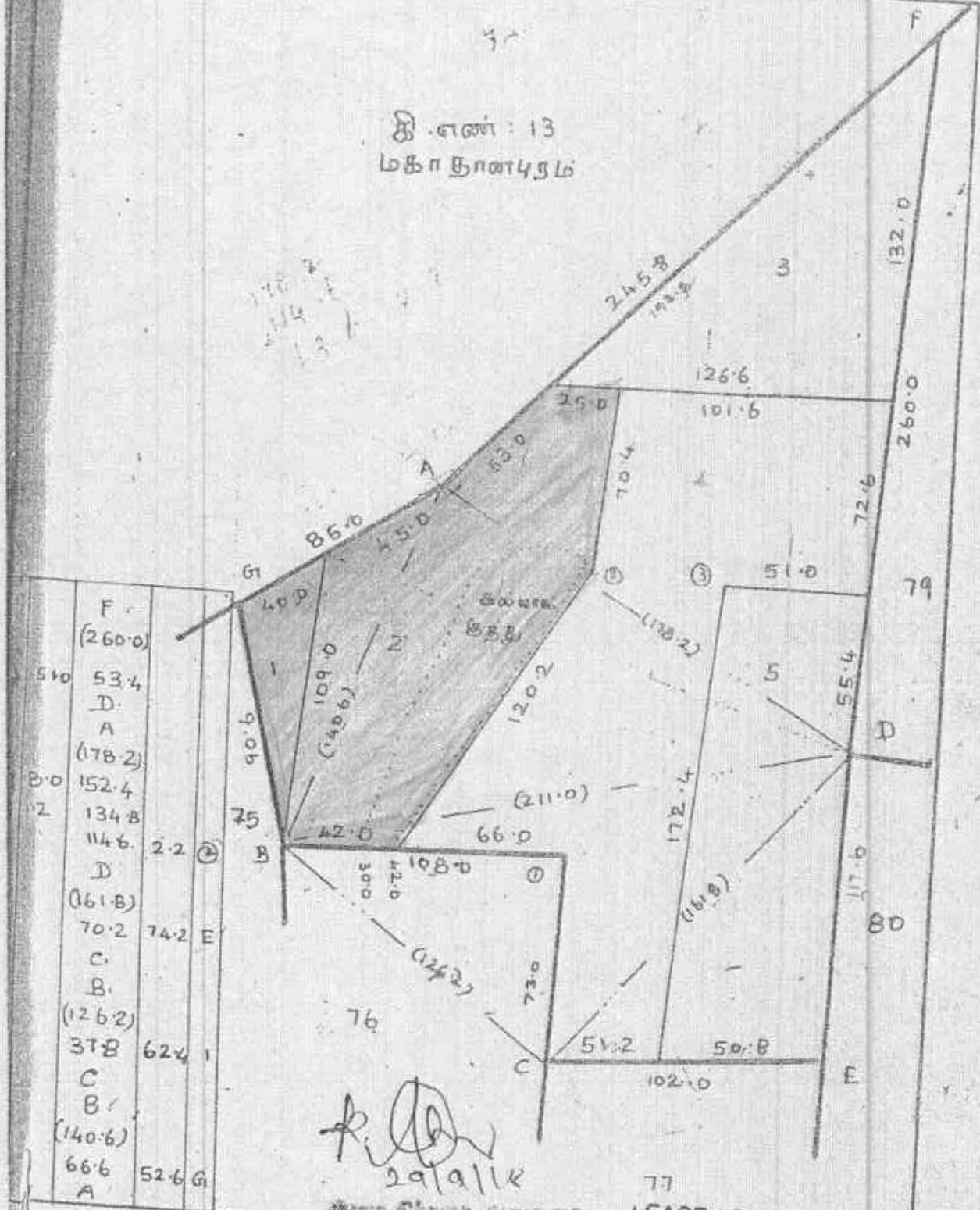
பெயர்: குளித்தலை

எண்: 27
மீளம்: வீதியம்

புல எண்: 178

பரப்பு: செக்கிள் 5 ஏ. 00.0

தி. எண்: 13
மதா துண்டிதம்



சு. அ. அ. அ.
29/11/18

LEASE APPLIED AREA

சு. அ. அ.

அளவு: 1,000 மீ. மீ

சு. அ. அ.

தி. எண்: 13



No. 12
CHINTALAVADI

No. 13
MAHĀDĀNAPURAM

SIGNATURE OF THE APPLICANT

6

LEASE APPLIED AREA

LEASE APPLIED AREA



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கிருஷ்ணராயபுரம்

வருவாய் கிராமம் : வீரியம்பாளையம்

பட்டா எண் : 3525

உரிமையாளர்கள் பெயர்

1. இராச்சிரெட்டியார்

மகன்

தனபால்



புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	
76	1	1 - 16.00	1.11	--	--	--	--	2016/0103/14/013902- -- -- 28-06-2016
		1 - 16.00	1.11					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/04/027/03525/50795 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 02-06-2021 அன்று 11:18:49 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கிருஷ்ணராயபுரம்

வருவாய் கிராமம் : வீரியம்பாளையம்

பட்டா எண் : 1910

உரிமையாளர்கள் பெயர்

1. இராச்சிரெட்டியார்

மகன்

தனபால்



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	
78	2	1 - 21.00	1.61	--	--	--	--	94D/2013----- 09-08-2001
		1 - 21.00	1.61					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/04/027/01910/30741 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 02-06-2021 அன்று 11:20:53 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கிருஷ்ணராயபுரம்

வருவாய் கிராமம் : வீரியம்பாளையம்

பட்டா எண் : 2086

உரிமையாளர்கள் பெயர்

1. இராச்சிரெட்டியார்

மகன்

தனபால்



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	
75	3A	0 - 2.00	0.20	--	--	--	--	94G/2013--- 23-12-2011
		0 - 2.00	0.20					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/04/027/02086/40706 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 02-06-2021 அன்று 11:17:58 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கிருஷ்ணராயபுரம்

வருவாய் கிராமம் : வீரியம்பாளையம்

பட்டா எண் : 3391

உரிமையாளர்கள் பெயர்

1. இராச்சிரெட்டியார்

மகன்

தனபால்



புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	
75	1B	0 - 38.00	0.47	--	--	--	--	---8A49/2012 - - 28-01-2013
		0 - 38.00	0.47					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/04/027/03391/50756 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 02-06-2021 அன்று 11:16:18 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கிருஷ்ணராயபுரம்

வருவாய் கிராமம் : வீரியம்பாளையம்

பட்டா எண் : 3414

உரிமையாளர்கள் பெயர்

1. இராச்சிரெட்டியார்

மகன்

தனபால்



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	
78	1	0 - 16.00	0.20	--	--	--	--	--- -- 09-08-2001
		0 - 16.00	0.20					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/04/027/03414/50782 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 02-06-2021 அன்று 11:19:28 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



19
ம. எண் (27) வீரபாளையம்.

44

11

44

CHENNAI

	1	2	3	4	5	6	7	8	9	10	
75	(1)	75-பா	ர	4	...	8-3	15	1 24	0 65.0	0 81	733 ரா. பெருமாள் ரெட்டியார்.
	(2)	-பா	ர	4	...	8-3	15	1 24	1 77.0	2 17	91 ரா. குதவக் கவுண்டர்.
	(3)	-பா	ர	4	...	8-3	15	1 24	1 76.5	2 19	956 வெ. ராஜி கவுண்டர்.
									4 18.5	5 17	
76	1A	76-பா	ர	4	...	8-3	15	1 24	1 16.0	1 11	691 ரா. பிச்சைக் கவுண்டர்.
	2	-பா	ர	4	...	8-3	15	1 24	2 46.5	3 37	1062 ரா. வெள் கவுண்டர்.
									3 62.5	4 48	
77	1A	87-பா	ர	4	...	8-3	15	1 24	0 36.0	0 45	1062 ரா வெள் கவுண்டர்.
	1B	-பா	ர	4	...	8-3	15	1 24	0 33.5	0 44	503 ம. தங்கராஜி.
	(1C)	-பா	ர	4	...	8-3	15	1 24	0 71.5	0 89	1093 அ. ஜெய ராமன்.
	1D	-பா	ர	4	...	8-3	15	1 24	0 71.0	0 88	1072 ரா. வெதூக் சாமி.
	1E	-பா	ர	4	...	8-3	15	1 24	0 71.0	0 88	539 அ. நடராஜ்.
	2A	-பா	ர	4	...	8-3	15	1 24	1 02.0	1 25	539 அ. நடராஜ்.
	(2B)	-பா	ர	4	...	8-3	15	1 24	1 02.0	1 25	1093 அ ஜெய ராமன்.
									4 89.0	6 04	
78	1	78-பா	ர	4	...	8-3	15	1 24	0 16.0	0 20	733 ரா. பெருமாள் ரெட்டியார்.
	2	-பா	ர	4	...	8-3	15	1 24	1 21.0	1 61	734 ரா. பெரிய சாமிமுத்து ராஜா.
	3	-பா	ர	4	...	8-3	15	1 24	0 76.0	1 06	733 ரா. பெருமாள் சாமி ரெட்டியார்.
	4	-பா	ர	4	...	8-3	15	1 24	1 90.0	2 12	198 இ. கணேசன்.
	5	-பா	ர	4	...	8-3	15	1 24	0 87.0	1 19	733 ரா. பெருமாள் சாமி ரெட்டியார்.
									5 00.0	6 18	

VILLAGE ADMINISTRATIVE OFFICER
19. VEERIYAPALAIYAM VILLAGE
MICHUNARAYAPURAM TALUK

75/124 ... 8.3 15 1.24 1.365 1.67
 " 124 ... 8.3 15 1.24 0.405 0.50



As per
 the
 order
 of
 the
 Director
 of
 Geology
 and
 Mining
 No. 111
 of 1981

74/30 3A 5 H - 8.3 15 1.24 0.69.0 0.86 91. 831. 0.20.0 0.25 90. 1.01. 1.11
 3B " " " " " " 0.89.0 1.11

75/2A1 2A 5 H - 8.3 15 1.24 0.6.0 0.76 90. 1.01. 1.11
 2A2- " " " " " " 0.75.5 0.94 91. 831. 0.20.0 0.25 90. 1.01. 1.11

இந்த பத்திரிகை TK. 8A - 60/1413 க்கு 29.4.84ல்
 பரிசீலிக்கப்பட்டது.
 6.5.84

74/5A 3 5 H - 8.3 15 1.24 0.49.0 0.61 91. 831. 0.20.0 0.25 90. 1.01. 1.11
 3A2 " " " " " " 0.20.0 0.25 91. 831. 0.20.0 0.25 90. 1.01. 1.11

இந்த பத்திரிகை TK. 8A - 15/1419 க்கு 15.10.84ல் பரிசீலிக்கப்பட்டது.
 15.10.84

75/3A 3 5 H - 8.3.15 1.24 0.02.0 0.20 2086. 0.01. 0.01. 0.01
 3B " 5 4 ... 8.3.15 1.24 0.26.5 0.35 2087. 0.01. 0.01. 0.01
 3C " 5 4 ... 8.3.15 1.24 0.67.0 0.85 2088. 0.01. 0.01. 0.01
 3D " 5 4 ... 8.3.15 1.24 0.81.0 1.00 1944. 0.01. 0.01. 0.01

இந்த பத்திரிகை TK. 8A - 36/1421 க்கு 15.12.81ல் பரிசீலிக்கப்பட்டது.
 15.12.81

77/1A1 7.4 5 H - 8.3 15 1.24 0.18.0 0.25 3470 0.01. 0.01. 0.01
 77/1A2 7.4 5 H - 8.3 15 1.24 0.18.0 0.25 3471 0.01. 0.01. 0.01

இந்த பத்திரிகை TK. 8A - 16/1420 க்கு 21.12.81ல் பரிசீலிக்கப்பட்டது.
 21.12.81

VILLAGE ADMINISTRATIVE OFFICER
 19, VEERIYAPALAIYAM VILLAGE
 KOICHAJADAYAOIDAM TALUK



3/1A.

347

A-20

Tamil Nadu

As per 15/1410

dt 26.12.2000

24563, 1A, 1B, 1C, 1D and 1E Survey Station
1A and 1B Survey Station.

For the Director
to the Director

86/1A3B	1A3B	21	4m	-	-	-	0.840	-
1A3C	1A3C	21	4m	-	-	-	0.910	-
86/1B1	1B1	21	4m	-	-	-	2.260	-
1B2	1B2	21	4m	-	-	-	1.270	-
1B3	1B3	21	4m	-	-	-	0.050	-

25/12/2000
25/12/2000
25/12/2000
25/12/2000
25/12/2000

86/1A3B; 1A3C; 1B1; 1B2 & 1B3 Station and 1A3B Station and 1A3B Station
5.33.0

86/1A3B

திரு. பி. சி. சாந்திரன். T.M. 7-1/144 தலைவர் 5.35 மணிக்கு டீயைப் பருகி.
11.4.06

86/1A1A1	1A1A1	21	4m	...	8.3.15	1.24	0.145	0.18	2139	கி. தளபதி
1A1A2	1A1A2	21	4m	...	8.3.15	1.24	0.665	0.83	622	தலைவர் பதவி
							0.810	1.01		

86/1A1B1	1A1B1	21	4m	...	8.3.15	1.24	0.005	0.03	2139	கி. தளபதி
1A1B2	1A1B2	21	4m	...	8.3.15	1.24	0.005	0.03	622	தலைவர் பதவி
							0.010	0.06		

87/1B1	1B1	21	4m	...	8.3.15	1.24	0.210	0.26	2139	கி. தளபதி
1B2	1B2	21	4m	...	8.3.15	1.24	0.720	0.89	622	தலைவர் பதவி

87/1D1	1D1	21	4m	...	8.3.15	1.24	0.045	0.07	2139	கி. தளபதி
1D2	1D2	21	4m	...	8.3.15	1.24	0.305	0.38	689	தி. தளபதி
							0.350	0.43		

திரு. பி. சி. சாந்திரன் T.M. 7-1/144 தலைவர் 5.35 மணிக்கு டீயைப் பருகி.

VILLAGE ADMINISTRATIVE OFFICER
19, VEERIYAPALAYAM VILLAGE
KODAIKANAL

28.12.2000
For the



	2	3	4	5	6	7	8	9	10	11	12
86-1A3	ர	4	...	8-3	15	1	24	0	05-0	0	06
86-1B1	ர	4	...	8-3	15	1	24	2	26-0	2	80
86-1B2	ர	4	...	8-3	15	1	24	1	27-0	1	57
86-1B3	ர	4	...	8-3	15	1	24	0	05-0	0	06
-2	...	...	...	...	...	...	...	0	23-5	...	...
87-1A	ர	4	...	8-3	15	1	24	0	33-0	0	40
87-1B	ர	4	...	8-3	15	1	24	0	93-0	0	15
87-1C	ர	4	...	8-3	15	1	24	0	66-5	0	82
87-1D	ர	4	...	8-3	15	1	24	0	35-0	0	45
2	ர	4	...	8-3	15	1	24	1	10-5	1	37
3A1	ர	4	...	8-3	15	1	24	0	40-0	0	47
3A2	ர	4	...	8-3	15	1	24	0	20-0	0	25
3B1	ர	4	...	8-3	15	1	24	0	12-5	0	16
3B2	ர	4	...	8-3	15	1	24	0	12-5	0	16
3B3	ர	4	...	8-3	15	1	24	0	12-5	0	16
3B4	ர	4	...	8-3	15	1	24	0	12-5	0	16
4	...	...	...	...	...	...	...	4	48-0	5	55
88-1	ர	4	...	8-3	15	1	24	0	11-5	0	14
2A	ர	4	...	8-3	15	1	24	0	16-5	0	20

VILLAGE ADMINISTRATIVE OFFICER
19, VEERIYAPALAIYAM VILLAGE
KRISHNARAYAPURAM TALUK



தமிழ்நாடு தமிழ்நாடு TAMILNADU 18 OCT 2021



D. Rami,
Kachy. 620017

BD 471692

அ. இலட்சுமி
அ. இலட்சுமி
தொழிலாளர் நீதி மன்றம்
மாவட்ட நீதி மன்ற வளாகம்
எண்: 2/2000, திருச்சி
மொல் எண்: 93451 8181

சம்மதப்பத்திரம்

2021-ம் வருடம் அக்டோபர் மாதம் 18-ம் தேதியில், திருச்சி மாவட்டம், தென்னூர், அண்ணாநகர், உக்கிரகாளியம்மன் கோவில் தெரு, கதவிலக்கம் பழைய எண் D/364, புதிய எண் D/11 என்ற விலாசத்தில் வசிக்கும் திரு.E.தனபால் மனைவி திரு.D.இராணி (வயது 52) -1வது பார்ட்டியாகவும்,

மற்றும்

திருச்சி மாவட்டம், தென்னூர், அண்ணாநகர், உக்கிரகாளியம்மன் கோவில் தெரு, கதவிலக்கம் பழைய எண் D/364, புதிய எண் D/11 என்ற விலாசத்தில் வசிக்கும் திரு.இராச்சி ரெட்டியார் குமாரர் திரு.E.தனபால் (வயது 66) 2வது பார்ட்டியாகவும் சேர்ந்த எழுதிக் கொண்ட சம்மதப்பத்திரம் என்னவென்றால்,

எழுதி வாங்குபவர் (1வது பார்ட்டி) எழுதிக் கொடுப்பவர் (2வது பார்ட்டி)

D. Rami



E. Sampath

நம்மில் 2வது பார்ட்டிக்கு பாத்தியப்பட்ட கீழ்கண்ட சொத்து விபரத்தினை கண்டுள்ள புலன்களை கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு 1வது பார்ட்டிக்கு குவாரி பணி செய்து கொள்ள குத்தகைக்கு விட சம்மதிக்கிறார். மேலும் 1வது பார்ட்டியும் குத்தகைக்கு எடுத்துக் கொள்ள சம்மதிக்கிறார்.



நிபந்தனைகள்:

1. குத்தகை காலம் இன்று முதல் 25 ஆண்டுகளுக்கு செல்லத்தக்கது.
2. குத்தகை புலத்தில் அமைந்துள்ள பல வண்ண கிரானைட் (Multi colour Granite) கனிமங்களை 1வது பார்ட்டி தனது சொந்த செலவில் அரசாங்கத்திடம் முறையாக குவாரி குத்தகை உரிமம் பெற்று குவாரி விதிகளுக்குட்பட்டு குவாரி பணி செய்து கொள்ள வேண்டியது.
3. மேற்படி குத்தகை தொடர்பாக ஆண்டு குத்தகை தொகையாக ரூ.10,000- (ரூபாய் பத்தாயிரம் மட்டும்) பிரதி வருடம் ஜனவரி 5ம் தேதிக்குள் 1வது பார்ட்டி, 2வது பார்ட்டிக்கு செலுத்தி ரசீது பெற்றுக் கொள்ள வேண்டியது.
4. இந்த குத்தகை காலத்தில் 2வது பார்ட்டி குத்தகை நிலத்தை வேறு நருக்கு விற்கவோ, அடமானம் வைக்கவோ, குத்தகைக்கு விடவோ, வில்லங்கப்படுத்தவோ கூடாது. அவாறு செய்தால் அவை செல்லத்தக்கதல்ல.
5. குவாரி குத்தகை உரிமம் தொடர்பாக கையொப்பம் தேவைப்படின 2வது பார்ட்டி கையொப்பமிட்டு தர வேண்டியது.
6. இந்த குத்தகை சம்பந்தப்பட்ட சிவில் நடவடிக்கைகள் யாவும் கருர் மாவட்ட நீதிமன்ற எல்லைக்குள்பட்டது.

எழுதி வாங்குபவர் (1வது பார்ட்டி)

எழுதிக் கொடுப்பவர் (2வது பார்ட்டி)

6.10.2011

D. Ravi





(3)

இதன்படி இரண்டு பார்ட்டிகளும் சேர்ந்து எழுதிக் கொண்ட சம்மதப்பத்திம்
சரி

சொத்துவிபரம்

கருர் ரிடி, கிருஷ்ணராயபுரம் சப் ரிடி, வீரியம்பாளையம் கிராமம்

வ.எண்	சர்வே எண்	பட்டா எண்	மொத்த பரப்பு (ஹெக்டேரில்)
1.	75/1B	3391	0.38.0
2.	75/3A	2086	0.02.0
3.	76/1	3525	1.16.0
4.	78/1	3414	0.16.1
5.	78/2	1910	1.21.0
	மொத்தம்		2.93.0

மேற்கண்ட 2.93.0 பு.ஹெக் நிலங்கள் மட்டும் இந்த குத்தகைக்கு
பாத்தியப்பட்டது

எழுதி வாங்குபவர் (1வது பார்ட்டி)

D.K.M.

எழுதிக் கொடுப்பவர் (2வது பார்ட்டி)

E. Ramesh

சாட்சிகள்

1.

2.



NOTARY PUBLIC
GOVT. OF TAMIL NADU

T. MURUGARAJAN, B.A., B.L.,
ADVOCATE & NOTARY PUBLIC
GOVT. OF TAMILNADU
REGD. No: G.O. (MS). No.250 / 2018
No. 12, Vinayagapuram, Tennur,
Trichy-620 017, Cell: 98421 2250
ENTROLLMENT MS No: 1833 / 2007

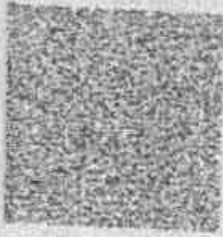


இந்திய அரசாங்கம்
Government of India

இந்திய தனித்துவ அடையாள ஆணையம்
Unique Identification Authority of India

பதிவேட்டு எண் / Enrollment No.: 219240315/08467

To:
பெனி. த.
Rani D
C/O. Dhenebali
No D/11 Ukkirakali Amman Kovil Street
Anna Nagar, Tennur
VTC, Tiruchirappalli
PO, Tennur
Sri District, Tiruchirappalli, District Tiruchirappalli
State, Tamil Nadu
PIN Code: 620017
Mobile: 9842726326



உங்கள் ஆதார் எண் / Your Aadhaar No.:
6410 3247 4153
எனது ஆதார், எனது அடையாளம்



இந்திய அரசாங்கம்
Government of India



பெனி. த.
Rani D
பிந்தை இலா. DCR 26-01-1984
Gender / Female



6410 3247 4153

எனது ஆதார், எனது அடையாளம்

D. Rani



ஆதார் அட்டை, உங்கள் அடையாள ஆணையத்தின் அங்கம்.
மட்டுமே உங்கள் அடையாளம் உறுதிப்படுத்தும் ஆதாரம்.
அங்கீகரிக்கப்பட்ட பயன்பாடுகளைப் பயன்படுத்தும் போது உங்கள் ஆதாரத்தைப் பரிசீலிக்கவும்.

INFORMATION

- Aadhaar is a proof of identity, not of citizenship.
- Verify identity using Secure QR Code / Offline XML / Online Authentication

- ஆதார் தர ஒரு முழுமையான சான்று ஆகும்.
- பலவேறு அரசு மற்றும் அரசு அல்லாத சேவைகளை எளிதில் பெற ஆதார் உதவுகிறது.
- உங்கள் மொபைல் எண் மற்றும் மின்னஞ்சல் இலுவல் ஆதாரில் புதுப்பிக்கவும்.
- mAadhaar செயலியைப் பயன்படுத்தி உங்கள் எம்எஸ்டி. என்எல். என்எல். ஆதார எடுத்துச் செல்லுங்கள்.
- Aadhaar is valid throughout the country.
- Aadhaar helps you avail various Government and non-Government services easily.
- Keep your mobile number & email ID updated in Aadhaar.
- Carry Aadhaar in your smart phone – use mAadhaar App.

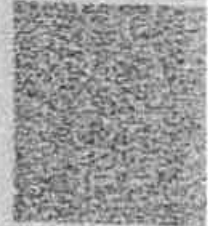


இந்திய அரசாங்கம்
Unique Identification Authority of India



முதலாதி கேர் ஆப் தளபதல் எண் 111
உக்கிரகாலி அம்மன் கோவில் தெரு
அண்ணா நகர் சென்னை
திருச்சிராப்பள்ளி தமிழ் நாடு, எண் 11

Print Date: 24/01/2022
Address: C/O. Dhenebali, No D/11,
Ukkirakali Amman Kovil Street, Anna
Nagar, Tennur, Tiruchirappalli, Tamil
Nadu, 620017



6410 3247 4153

1847 help@uidai.gov.in www.uidai.gov.in

आयकर विभाग
INCOME TAX DEPARTMENT

D RANI
PADMANABAN

28/01/1969

Person's Account Number

AKTPR7082C

D. Rani

Signature



भारत सरकार
GOVT. OF INDIA



D. Rani

For more details visit to *Income Tax* website. Kindly inform / return to
Income Tax P.A. Services Unit, 11/11/11
Plot No. 1, Sector 11, CHD, Punjab
Kavi Bhabha - 1100 11

For more details visit to *Income Tax* website. Kindly inform / return to
Income Tax P.A. Services Unit, 11/11/11
Plot No. 1, Sector 11, CHD, Punjab
Kavi Bhabha - 1100 11



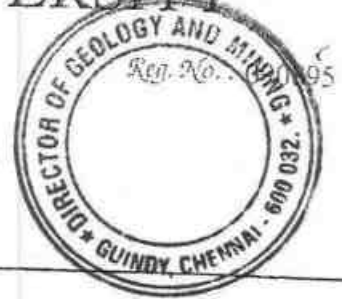
அண்ணாமலைப்



பல்கலைக்கழகம்

ANNAMALAI

UNIVERSITY

அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2011 இல்

பயன்பாட்டு நிலத்தியல்

பிரிவில்

நடத்திய தேர்வுகளில்

வெங்கடகிரி பா.

கூடுதல்

மதிப்பீடுள்ளிகள் 10.00 க்கு சராசரியாக 6.03 பெற்று

இரண்டாம் வகுப்பில்

தேர்ச்சியடைந்து

முறையாக

அமைக்கப்பெற்ற

தேர்வுக்குழுவினர்

சான்றளித்தபடி,

அறிவியல் நிறைஞர்

பட்டம்

பெறுவதற்கு

உரியவர்

ஆகின்றார்

என அண்ணாமலைப் பல்கலைக்கழக ஆளவை

இதன்வழி

அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known

that VENGATAGIRI B

has been admitted to the

Degree of MASTER OF SCIENCE in

APPLIED GEOLOGY,

he/she having secured OGPA of 6.03 out of 10.00 been certified

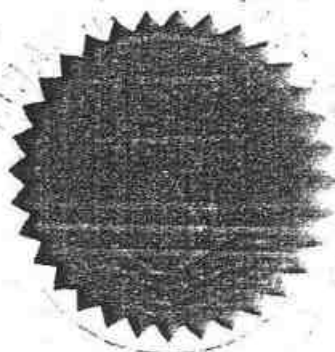
by duly appointed Examiners at the Examination held in

MAY, 2011 to be qualified to receive the same, and that

he/she was placed in SECOND CLASS.

பல்கலைக்கழக முத்திரை பெறுகின்றது

Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

நாள்:

Date: 09/11/2011

துணை தேர்வாளையர் (கல்விசார்ந்து)

Dr. M. Rathinasabapathi

பதிவாளர்

Dr. M. Ramanathan

துணை வேந்தர்

119A



GOVERNMENT OF INDIA
MINISTRY OF LABOUR AND EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY

Certificate of Practical Experience granted by the Manager to a Candidate for a Manager's/ Surveyor's/ Mining foreman/ Mining Mate/ Blasters certificate of competency examination under Metalliferous Mines Regulation, 1961.

I, M.S.Pavel being the Manager of K.Pitchampatti Multicolour Granite Mine belong to M/s. Anupkumar Lohia do hereby certify that **Thiru. B.Vengadagiri** son of **Thiru. Balasubramanian** (whose signature is appended) worked in the above mine from 10.07.2012 to 15.08.2018 and is still working. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper candidate to be examined for certificate of competency.

M.S. Pavel

(Signature with date and official seal)

(Mines Manager's class)
MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

(Signature)

(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite

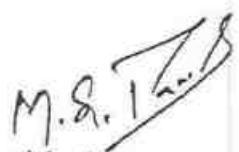


S. No.	Particulars of Practical experience (a)	Place of Experience (b) Opencast	Period of Practical experience (c)		Total Experience (e)		
			From	To	Yrs.	Months	Days
1.	As a trainee in drilling operation	Open cast	10.07.2012	24.10.2013	01	03	16
2.	As a trainee in deep hole blasting operation	Open cast	25.10.2013	31.12.2014	01	02	07
3	Production incharge quality control and Supervisor of Earth moving Mining Machinery	Open cast	01.01.2015	15.08.2018	3	7	14
GRAND TOTAL					06	1	5
In words : Six years one month ten days					Six	One	five

In below ground working	In open cast working	In all
Nil	Average monthly output 250m ³	250m ³
Nil	Average daily employment 25Nos	25Nos

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


(Signature of Candidate)


(Signature with date and official seal)

(Mines Manager 1st class)
MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.



PLATES

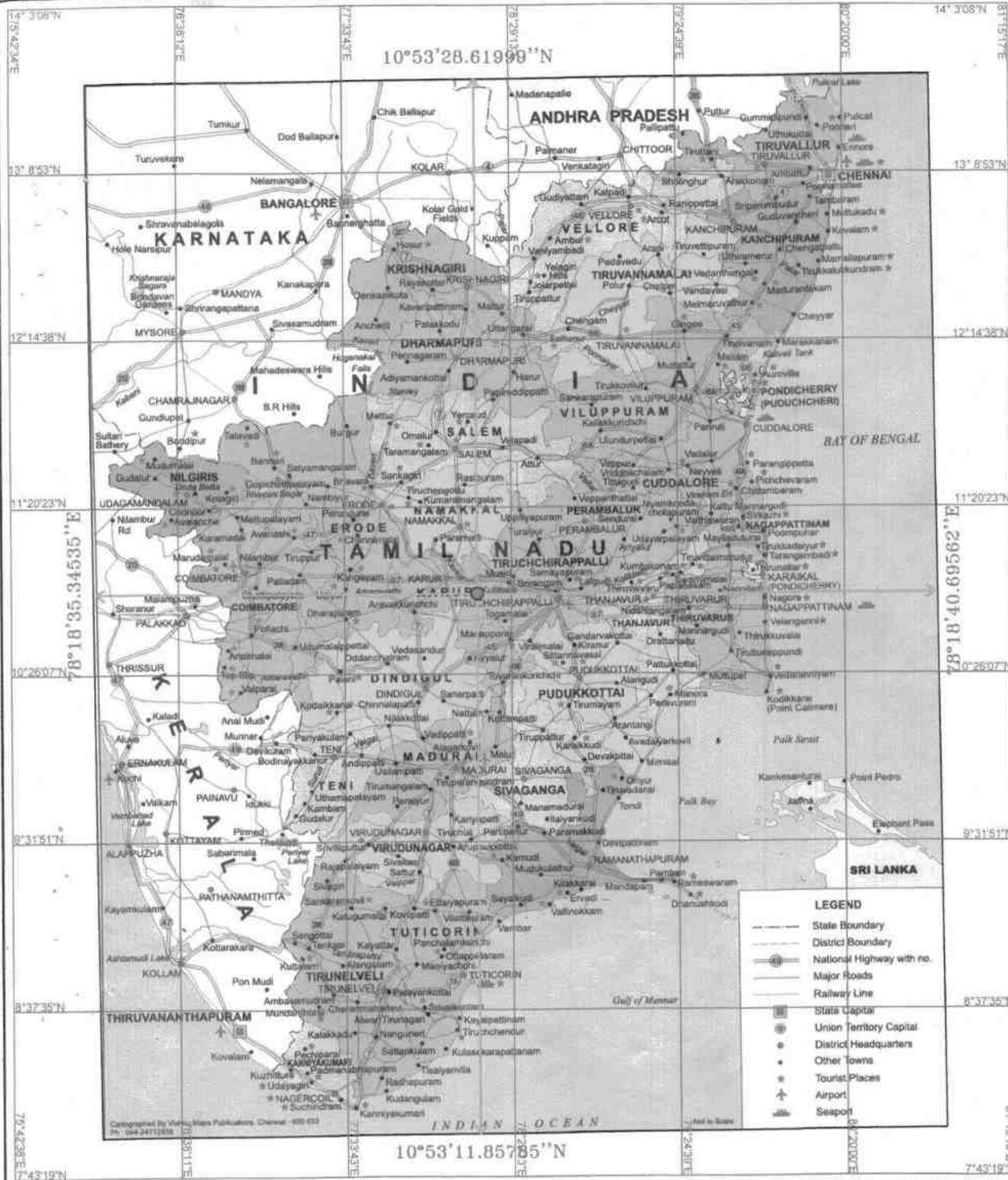


PLATE NO. I
DATE OF SURVEY: 04.11.2024

APPLICANT:
TMT.D.RANI,
S/o.E.DHANAPAL,
OLD No.D-364, NEW No.D/11,
UKKARA KALIAMMAN STREET, ANNA NAGAR,
THENNUR, TRICHY-620 117.

LOCATION OF QUARRY:
EXTENT : 2.93.0 Ha,
S.F.NOS : 75/18,75/3A,76/1,
78/1 & 78/2.
VILLAGE : VEERIYAPALAYAM,
TALUK : KRISHNARAYAPURAM,
DISTRICT : KARUR,
STATE : TAMIL NADU.

INDEX
Q. L.A. AREA :
TOPO SHEET NO. : 58 J/05
LATITUDE : 10°53'11.85785''N to 10°53'28.61999''N
LONGITUDE : 78°18'35.34535''E to 78°18'40.69562''E

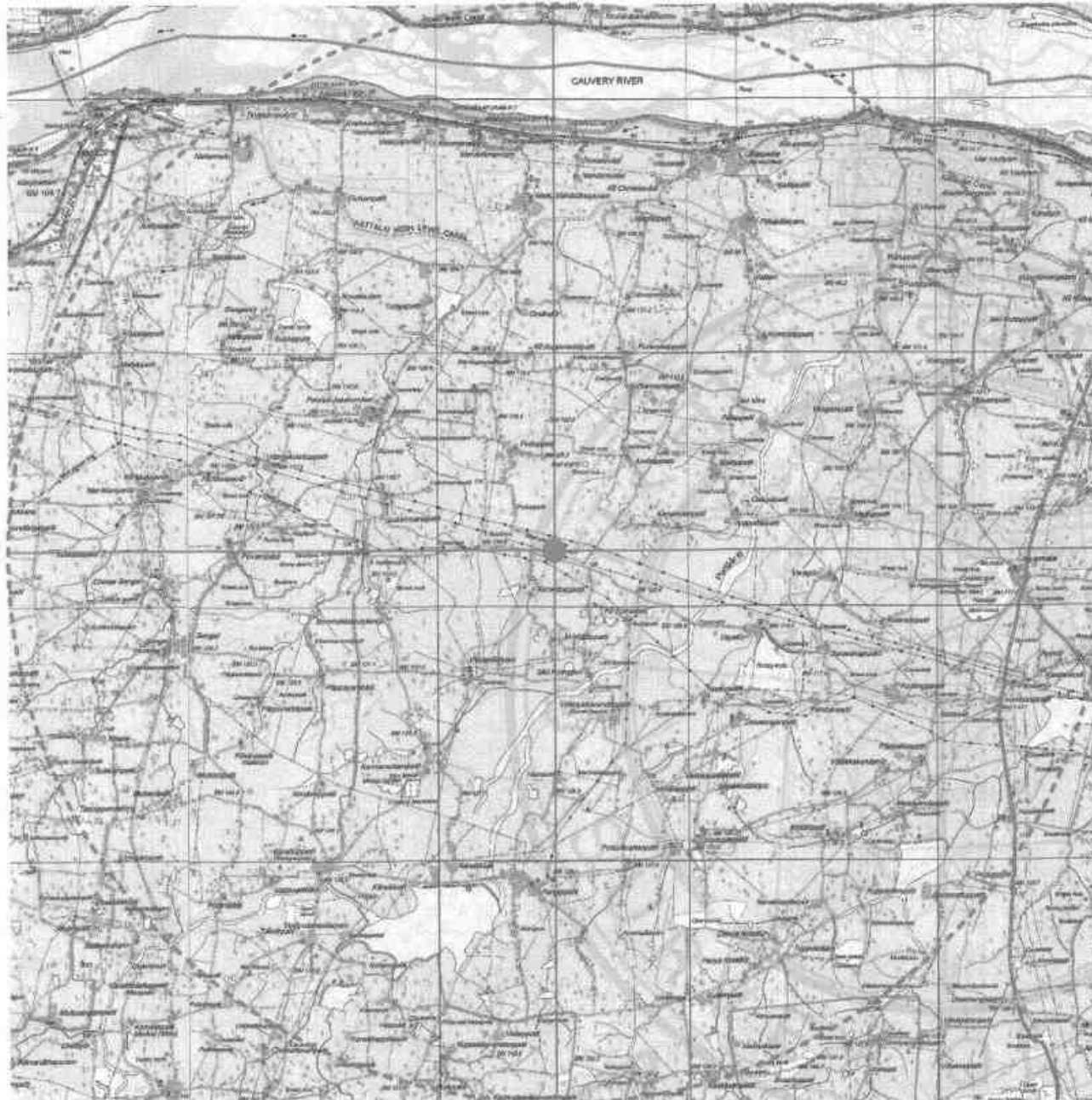
LOCATION PLAN
SCALE 1:24,00,000

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN
THIS PLATE IS TRUE AND CORRECT TO
THE BEST OF MY KNOWLEDGE AND
THE PLAN AND SECTIONS ARE PREPARED
BASED ON LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT

B. VENKATESH REDDY, M.Sc.,
QUALIFIED PERSON
Under Rule 123A of MCR, 2016



78° 13' 06.01"E



298° 24' 00 85''E

☐☐

TMT.D.RANI,
S/o.E.DHANAPAL,
OLD No.D-364,NEW No.D/11,
UKKARA KALIAMMAN STREET,ANNA NAGAR,
THENNUR,TRICHY-620 117.

EXTENT :2.93.0 Ha,
S.F.NOS :75/1B,75/3A,76/1,
78/1 & 78/2.
VILLAGE :VEERIYAPALAYAM,
TALUK :KRISHNARAYAPURAM,
DISTRICT :KARUR,
STATE :TAMIL NADU.



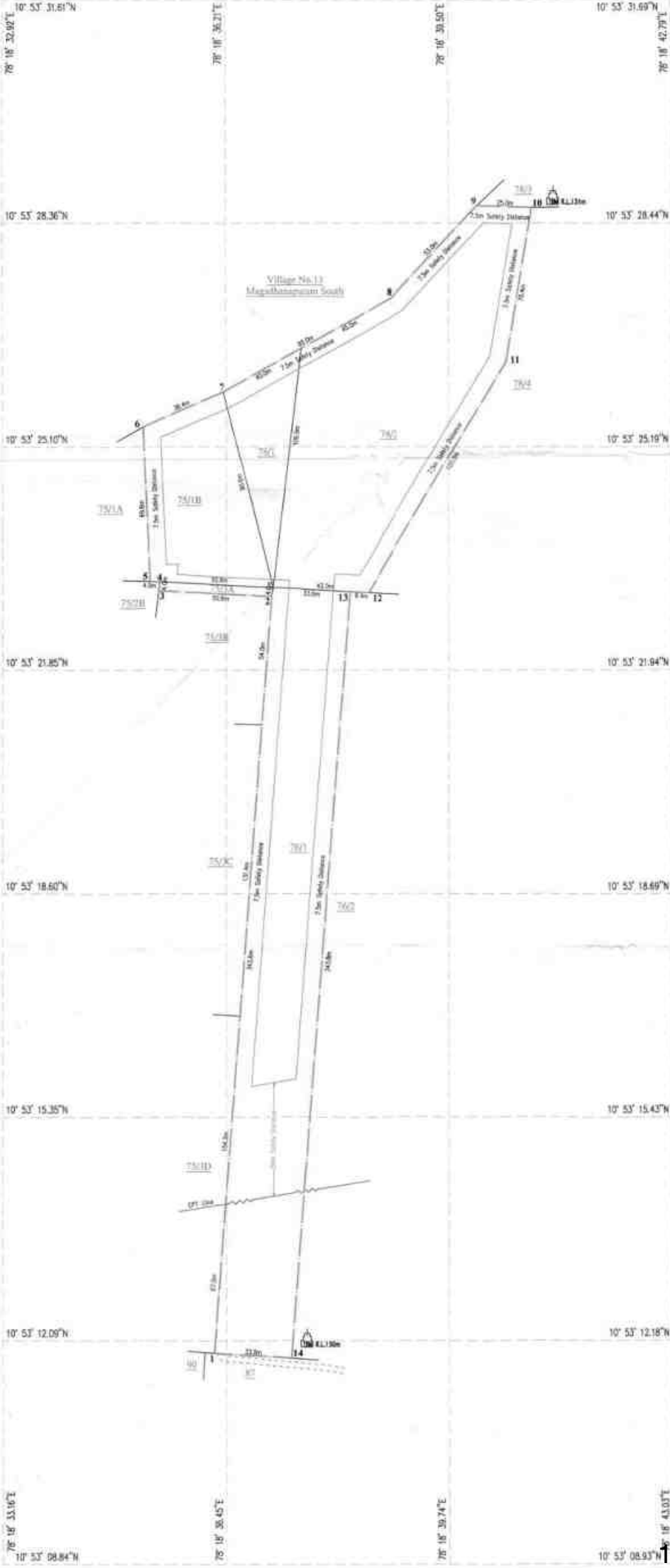
Express highway with toll, with bridge, with distance stone		
Roads, unimproved, according to importance		
Roads, double, partly improved according to importance		
Unimproved road, Cart-track, Path-track with pass, Foot-path		
Stream, with bank in field, unimproved, Canal		
Dam, masonry or rock-filled, outwork, Yell		
Water, dry with water station; with land & rocks; Total river		
Submerged rocks, Shoal, Swamp, Reeds		
Water, most unimproved, Tide- and Spring, Tidal, permanent, dry		
Embankments: road or rail, broken ground		
Railways, broad gauge, double, single with station; Under control		
Railways, other gauges, double, single with distance stone, etc.		
Mineral line or tunnel, R.R. Cutting with tunnel		
Contours with rock features, Rocky slopes, Cliffs		
Land features (Hill, Glacial hills, permanent), (Glacial scabbling)		
Towers or villages, Unimproved, Elevated, Fort		
Huts, permanent, temporary, Tower, Antiquary		
Temple, Church, Church, Mosque, Light, Tomb, Graves		
Lighthouse, Lighthouse, Buoy, Lighted, unlighted, Anchorage		
Line, Vio. or tolls, Great, Small		
Palms, papyrus, other, Plantain, Date, Bamboo, Other trees		
Arise, cultivated, wooded, Burmired tree		
Boundary, International		
State, international, international		
State, subdivision, state or local, forest		
Boundary, others, surveyed, indicated		
Height, triangulation station; point, approximate		
Point, mark, geodetic, tertiary, aerial		
Post office, Telegraph office, Chartered bank		
Rail house or inspection house, Local House, Police station		
Camping ground, Forest, reserved, protected		
Special names, administrative, locality or tribal		
Hospital, Dispensary, Veterinary, Hospital, Dispensary		
Ancient, Indian, Trench, site		
Power line, with pylons, surveyed, with poles, unsurveyed		

SCALE- 1:1,00,000

THIS IS TO CERTIFY THAT THE INFORMATION IN
THIS PLATE IS TRUE AND CORRECT TO
THE BEST OF MY KNOWLEDGE AND
THE PLAN AND SECTIONS ARE PREPARED
BASED ON LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT

B.VENGADASIRI, M.Sc.,
QUALIFIED PERSON

Under Rule 15(l)(a) and (b) MCA 2016



S.F.Nos.	Extent in ha.
75/1B	0.38.0
75/3A	0.02.0
76/1	1.16.0
78/1	0.16.0
78/2	1.21.0
Total	2.93.0

BOUNDARY CO-ORDINATES		
S.N.	START CO-ORDINATE	END CO-ORDINATE
1	10° 53' 11.2305"N	76° 16' 36.4124"E
2	10° 53' 22.9428"N	76° 16' 32.2488"E
3	10° 53' 23.0528"N	76° 16' 35.5843"E
4	10° 53' 23.1447"N	76° 16' 35.5843"E
5	10° 53' 23.1622"N	76° 16' 35.4857"E
6	10° 53' 25.4240"N	76° 16' 35.3425"E
7	10° 53' 25.6300"N	76° 16' 35.5239"E
8	10° 53' 27.9121"N	76° 16' 35.0245"E
9	10° 53' 28.6189"N	76° 16' 40.2542"E
10	10° 53' 28.5864"N	76° 16' 41.0844"E
11	10° 53' 28.3513"N	76° 16' 40.6942"E
12	10° 53' 22.8223"N	76° 16' 38.0742"E
13	10° 53' 23.3767"N	76° 16' 38.4832"E
14	10° 53' 11.8785"N	76° 16' 37.5847"E

PLATE NO. II

DATE OF SURVEY 04.11.2024

APPLICANT:
T.M.D.B.M.,
S/A S. CHANAPPA,
OLD NO. 2-364, NEW No. D/11,
CHOKKA KALAHAN STREET, ANNA NAGAR,
THANJAVUR, TAMIL NADU - 620 117.

LOCATION OF QUARRY:
EXTENT 2.93.0 HA.
S.F. NOS. 75/1B, 75/3A, 76/1,
76/2 & 78/2
VILLAGE - VEDYANPALAYAM,
TALUK - KOPPMANAPURAM,
DISTRICT - TAMIL NADU.

INDEX

GLASSIFIED BOUNDARY

7.5m & 50m SAFETY DISTANCE

APPROACH ROAD

TEMPORARY BENCH MARK

QUARRY LEASE PLAN

SCALE 1:1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THE PLAN AND SECTION ARE PREPARED BASED ON LEASE AND REVENUE RECORDS BY STAFF SURVEYOR.

S. CHANDRASEKHAR,
QUARRY NO. 40000
Date: 10/11/2024

10° 53' 31.61"N
76° 16' 31.81"E

10° 53' 28.50"N

10° 53' 25.10"N

10° 53' 21.85"N

10° 53' 18.60"N

10° 53' 15.35"N

10° 53' 12.09"N

10° 53' 08.84"N

76° 16' 31.81"E

76° 16' 31.81"E

10° 53' 31.69"N
76° 16' 31.81"E

10° 53' 28.44"N

10° 53' 25.19"N

10° 53' 21.94"N

10° 53' 18.69"N

10° 53' 15.43"N

10° 53' 12.18"N

10° 53' 08.84"N



Village No. 43
Megalumangalam School

ABCE

15/1A

15/2B

15/3B

15/3C

15/3D

15/3E

15/3F

15/3G

15/3H

15/3I

15/3J

15/3K

15/3L

15/3M

15/3N

15/3O

15/3P

15/3Q

15/3R

15/3S

15/3T

15/3U

15/3V

15/3W

15/3X

15/3Y

15/3Z

15/3AA

15/3AB

15/3AC

15/3AD

15/3AE

15/3AF

15/3AG

15/3AH

15/3AI

15/3AJ

15/3AK

15/3AL

15/3AM

15/3AN

15/3AO

15/3AP

15/3AQ

15/3AR

15/3AS

15/3AT

15/3AU

15/3AV

15/3AW

15/3AX

15/3AY

15/3AZ

15/3BA

15/3BB

15/3BC

15/3BD

15/3BE

15/3BF

15/3BG

15/3BH

15/3BI

15/3BJ

15/3BK

15/3BL

15/3BM

15/3BN

15/3BO

15/3BP

15/3BQ

15/3BR

15/3BS

15/3BT

15/3BU

15/3BV

15/3BW

15/3BX

15/3BY

15/3BZ

15/3CA

15/3CB

15/3CC

15/3CD

15/3CE

15/3CF

15/3CG

15/3CH

15/3CI

15/3CJ

15/3CK

15/3CL

15/3CM

15/3CN

15/3CO

15/3CP

15/3CQ

15/3CR

15/3CS

15/3CT

15/3CU

15/3CV

15/3CW

15/3CX

15/3CY

15/3CZ

15/3DA

15/3DB

15/3DC

15/3DD

15/3DE

15/3DF

15/3DG

15/3DH

15/3DI

15/3DJ

15/3DK

15/3DL

15/3DM

15/3DN

15/3DO

15/3DP

15/3DQ

15/3DR

15/3DS

15/3DT

15/3DU

15/3DV

15/3DW

15/3DX

15/3DY

15/3DZ

15/3EA

15/3EB

15/3EC

15/3ED

15/3EE

15/3EF

15/3EG

15/3EH

15/3EI

15/3EJ

15/3EK

15/3EL

15/3EM

15/3EN

15/3EO

15/3EP

15/3EQ

15/3ER

15/3ES

15/3ET

15/3EU

15/3EV

15/3EW

15/3EX

15/3EY

15/3EZ

15/3FA

15/3FB

15/3FC

15/3FD

15/3FE

15/3FF

15/3FG

15/3FH

15/3FI

15/3FJ

15/3FK

15/3FL

15/3FM

15/3FN

15/3FO

15/3FP

15/3FQ

15/3FR

15/3FS

15/3FT

15/3FU

15/3FV

15/3FW

15/3FX

15/3FY

15/3FZ

15/3GA

15/3GB

15/3GC

15/3GD

15/3GE

15/3GF

15/3GG

15/3GH

15/3GI

15/3GJ

15/3GK

15/3GL

15/3GM

15/3GN

15/3GO

15/3GP

15/3GQ

15/3GR

15/3GS

15/3GT

15/3GU

15/3GV

15/3GW

15/3GX

15/3GY

15/3GZ

15/3HA

15/3HB

15/3HC

15/3HD

15/3HE

15/3HF

15/3HG

15/3HH

15/3HI

15/3HJ

15/3HK

15/3HL

15/3HM

15/3HN

15/3HO

15/3HP

15/3HQ

15/3HR

15/3HS

15/3HT

15/3HU

15/3HV

15/3HW

15/3HX

15/3HY

15/3HZ

15/3IA

15/3IB

15/3IC

15/3ID

15/3IE

15/3IF

15/3IG

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15/3IL

15/3IM

15/3IN

15/3IO

15/3IP

15/3IQ

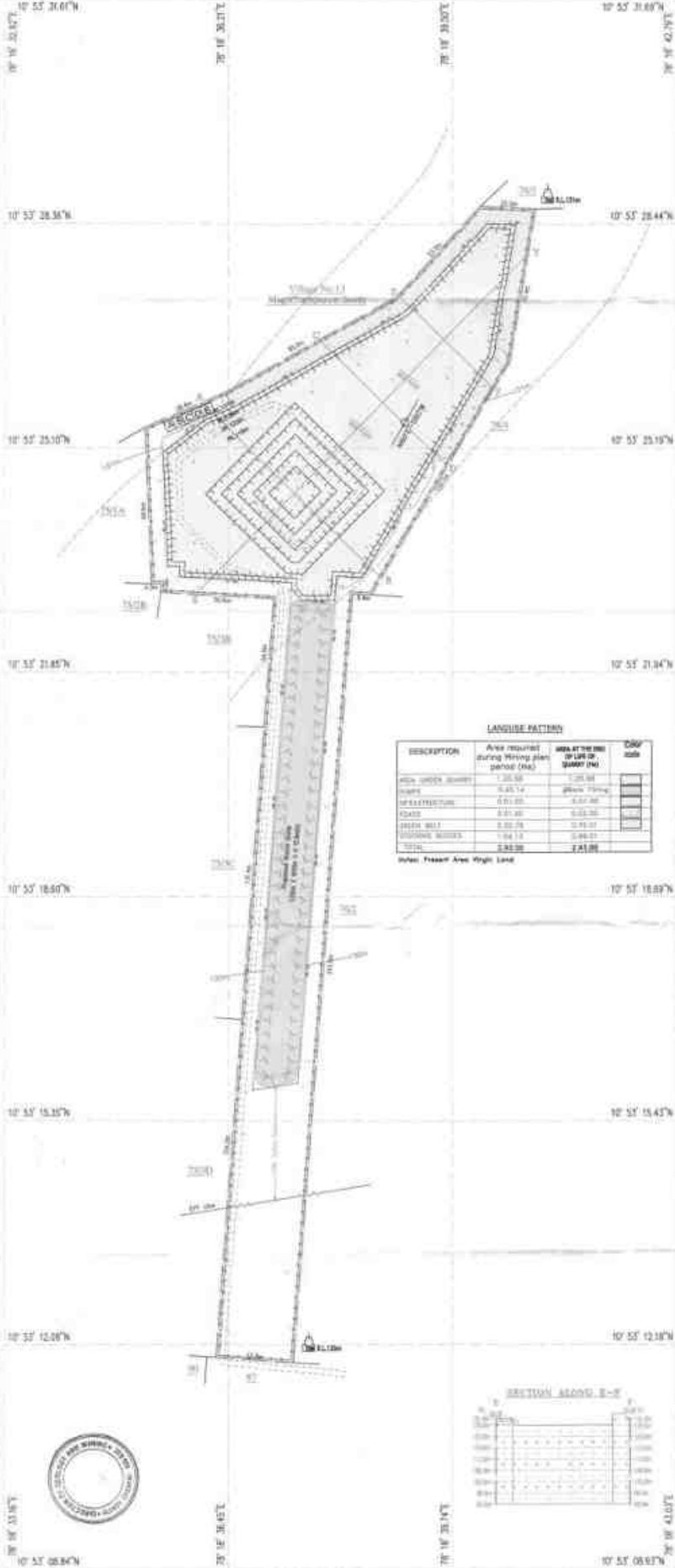
15/3IR

15/3IS

15/3IT

15/3IU

15/3IV



LANDUSE PATTERN

DESCRIPTION	Area required during Mining plan period (Ha)	area at the end of life of quarry (Ha)	CRP code
OPEN GREEN BOUNDARY	1.20.00	1.20.00	
ROADS	0.05.74	0.05.74	
INFRASTRUCTURE	0.01.00	0.01.00	
ROADS	0.01.00	0.01.00	
GRAVEL BUILT	0.02.78	0.02.78	
PROPOSED BOUNDARY	1.04.10	0.99.01	
TOTAL	2.34.52	2.29.53	

Notes: Present Area High Land

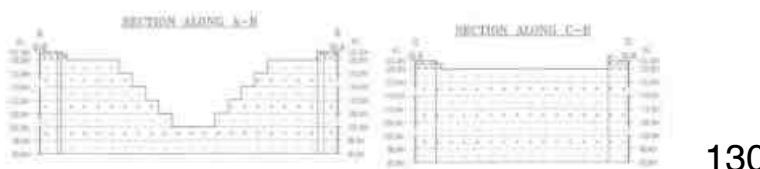
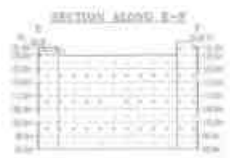
PLATE NO. VII
DATE OF SURVEY: 04.11.2024

REFERENCE:
MCD 2004
S/V C. CHENNAI,
152 No. 1-104 NEW H.C. 1/1,
BRIDGE, KULAMMAN STREET, ANNAM NAGAR,
THERUKULMACHI - 620 112

LOCATION OF QUARRY:
EXTENT: 2.33.0 Ha
S.F. NOS: 75/1, 75/2, 75/3, 75/4,
75/5 & 75/6
VILLAGE: DEENTHAPPAH,
TALUK: KANNUR,
DISTRICT: KANNUR,
STATE: KERALA

INDEX

- GLIMPSED BOUNDARY
- 25m & 50m BENCH MARKS
- APPROACH ROAD
- TEMPORARY BENCH MARK
- TOP SOIL
- MULTICOLOUR DRAINAGE
- STRATA AND DIP
- TOPOGRAPHICAL CONTOUR
- SHRUB
- MINERAL CONCENT LINE
- OUTCROPS
- BOTTOM ONES
- WEATHERED ROCK
- DUMP
- QUARRY PIT
- QUARRY ROAD
- BLASTING ZONE
- PROPOSED CARBON DRAIN



LAND USE PATTERN

DESCRIPTION	AREA IN PERCENTAGE (%)
TREES	15
ROAD	10
AGRICULTURAL LAND	70
HABITATION	05

OCTOBER TO DECEMBER



PLATE NO:VIII

DATE OF SURVEY: 04.11.2024

TOPO SHEET NO. : 58 J/05

LATITUDE : 10°53'11.85785"N to 10°53'28.61999"N

LONGITUDE : 78°18'35.34535"E to 78°18'40.69562"E

1KM RADIUS

500M RADIUS

Q.LAPPLIED AREA :



APPLICANT:

TMT.D.RANI,
S/o.E.DHANAPAL,
OLD No.D-364,NEW No.D/11,
UKKARA KALIAMMAN STREET,ANNA NAGAR,
THENNUR,TRICHY-620 117.

LOCATION OF QUARRY:

EXTENT :2.93.0 Ha,
S.F.NOS :75/1B,75/3A,76/1,
78/1 & 78/2.
VILLAGE :VEERIYAPALAYAM,
TALUK :KRISHNARAYAPURAM,
DISTRICT :KARUR,
STATE :TAMIL NADU.

INDEX

APPROACH ROAD	
WIND DIRECTION	
TREES	
QUARRY PIT	
AGRICULTURE LAND	
VILLAGE ROAD	
HABITATION	
EPT LINE	
KUTTAI	

ENVIRONMENTAL & LANDUSE PLAN(For 1Km Radius)

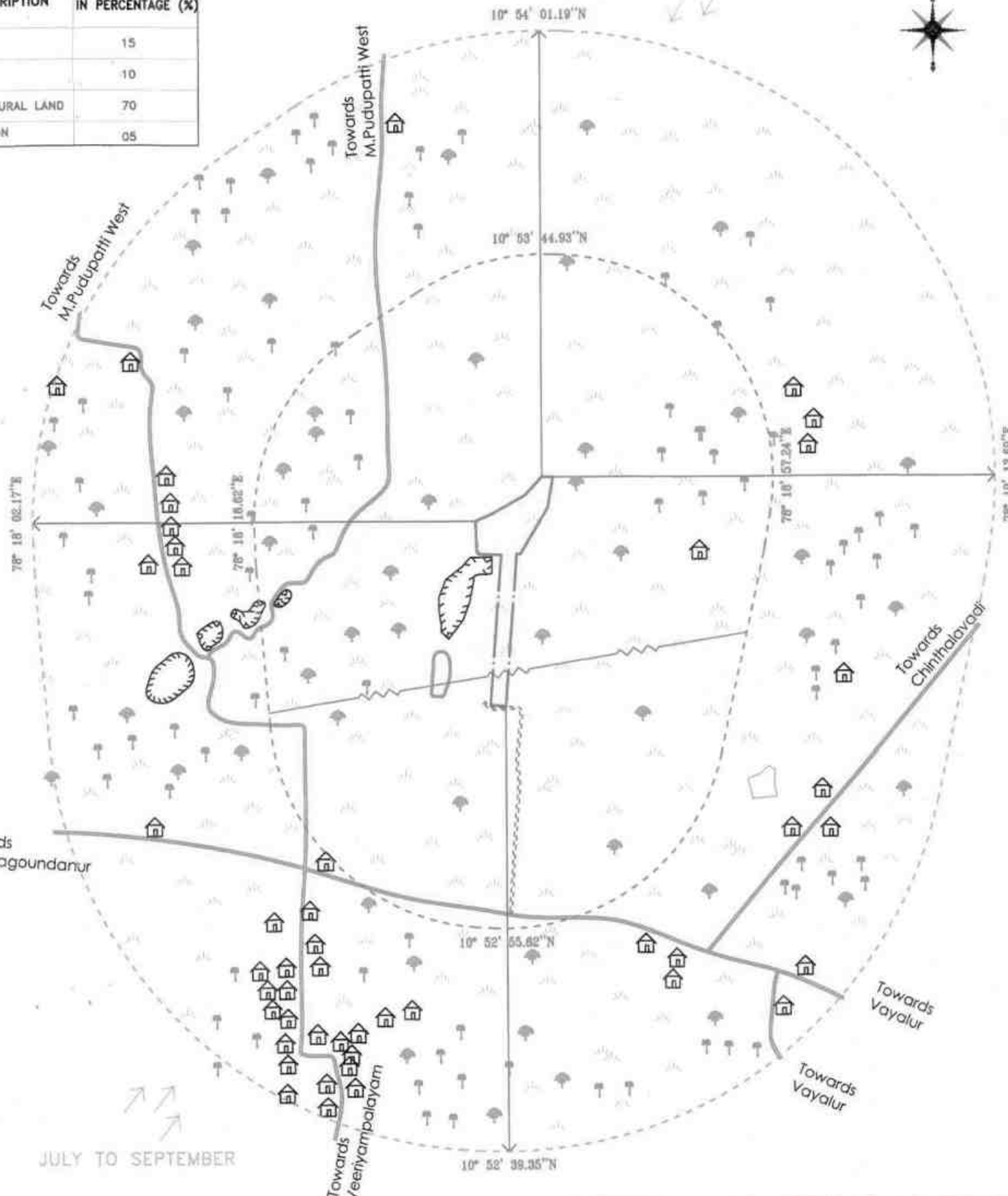
SCALE 1:10,000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN
THIS PLATE IS TRUE AND CORRECT TO
THE BEST OF MY KNOWLEDGE AND
THE PLAN AND SECTIONS ARE PREPARED
BASED ON LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT

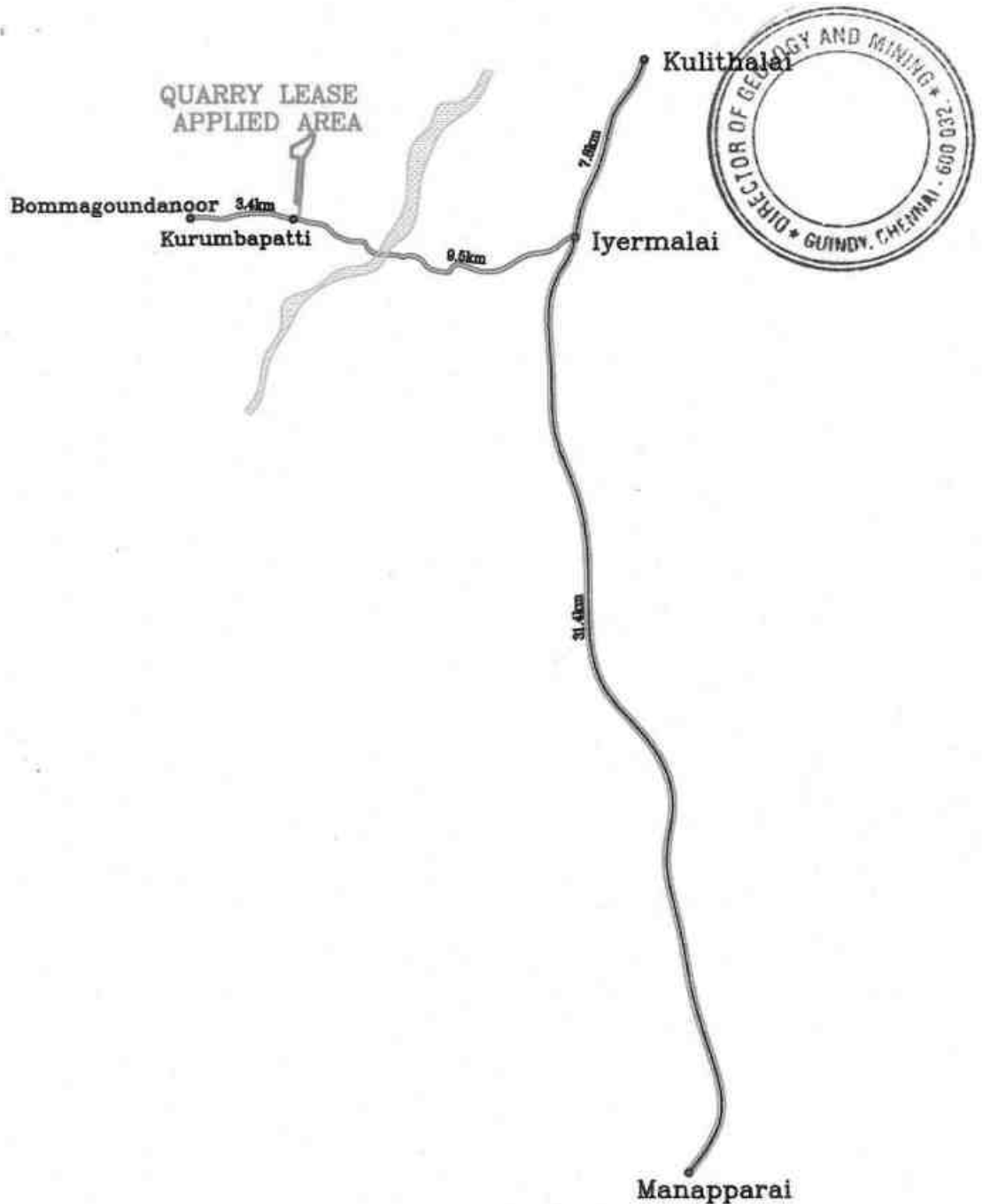
B.VENKATAGIRI, M.Sc.,
QUALIFIED SURVEYOR
Under Rule 15(i) of MCR, 2016

131A



JULY TO SEPTEMBER

ROUTE MAP



INDEX

QUARRY LEASE APPLIED AREA



APPROACH ROAD



MAJOR ROAD



S.H.ROAD



CANNAL



APPLICANT:

TMT.D.RANI,
S/o.E.DHANAPAL,
OLD No.D-364,NEW No.D/11,
UKKARA KALIAMMAN STREET,ANNA NAGAR,
THENNUR,TRICHY-620 117.

LOCATION OF QUARRY:

EXTENT :2.93.0 Ha.
S.F.NOS :75/1B,75/3A,76/1,
78/1 & 78/2.
VILLAGE :VEERIYAPALAYAM,
TALUK :KRISHNARAYAPURAM,
DISTRICT :KARUR,
STATE :TAMIL NADU.

PLATE NO:IB

(NOT TO SCALE)

PREPARED BY:

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B.VENKATAGIRI,M.Sc.,
QUALIFIED PERSON

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

**HYDRO - GEOLOGICAL STUDIES AT TMT. D. RANI
MULTI COLOUR GRANITE QUARRY VEERIAMPALAYAM VILLAGE,
KRISHNARAYAPURAM TALUK, KARUR DISTRICT, TAMIL NADU.**

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**HYDRO - GEOLOGICAL STUDIES AT TMT. D. RANI
MULTI COLOUR GRANITE QUARRY VEERIAMPALAYAM VILLAGE,
KRISHNARAYAPURAM TALUK, KARUR DISTRICT, TAMIL NADU.**

1. INTRODUCTION

Proprietor of **Tmt. D. Rani** in Multi Color Granite Quarry Over an extent of 2.93.0 hectares of patta land in S.F.Nos. 75/1B, 75/3A, 76/1, 78/1 and 78/2 of Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu state on the hydrological regime of the area, the above area has been studied & investigated for finding out Ground water level and aquifer thickness and water quality in and around mine lease area. The electrical resistivity method, TEM study in multi colour granite quarry with determine the shallow and deeper freshwater aquifer in the proposed mining area in Tmt. D. Rani veerampalayam village.

1.1. Scope of Study

In the present study, the main aim of the shallow and deeper aquifer investigation through electrical resistivity VES, Method is used to measure the apparent resistivity of the Study area. The present study is estimating the ground water level in Veerampalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu. The village proposed leasehold area and their surrounding area. The study area is mostly covered by Water level, type of sand, type of rock and their basement rock characters. The main aim of the study is to determine the water table and flow movement of this Lease and surrounding area (**Fig.1**).

1.2. Profiles in the Study Area.

Name of the Lessee	: Tmt. D. Rani
Survey Nos	: 75/1B, 75/3A, 76/1, 78/1 and 78/2
Extent	: 2.93.0 Ha
Village	: Veerampalayam
Taluka	: Krishnarayapuram
District	: Karur
State	: Tamil Nadu

2. STUDY AREA DESCRIPTION

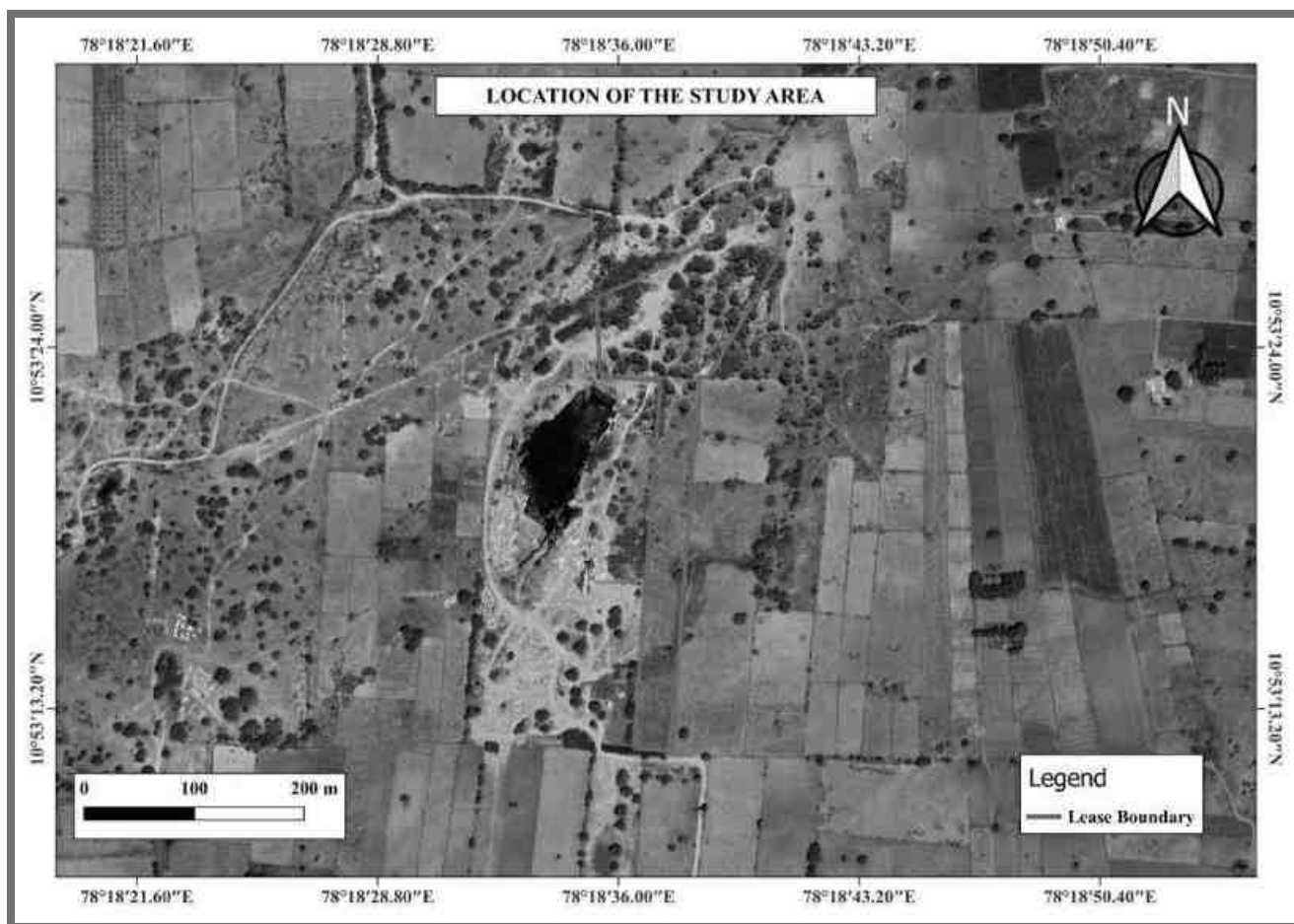


Figure.1. Shows proposed mine lease area

The lease applied area is located about 26km Southeastern side of Karur town, 8km Southeastern side of Krishnarayapuram town and 2.8km Northeastern side of Veerampalayam Village. The area is marked in the Survey of India, **Topo Sheet No. 58J/05**. The area lies between the Latitudes of **10°53'11.85785"N to 10°53'28.61999"N** and Longitudes of **78°18'35.34535"E to 78°18'40.69562"E** on WGS datum-1984.

2.1 Topography of the Lease Area and Its Surrounding Environments:

The area is situated in undulated terrain. The gradient is gentle towards East and altitude of the area is about 130m - 131m above from MSL. The Multi Color granite is clearly visible right from the outcrops exposed upto 2m height with physical weathering and the area is mostly covered by reddish gravelly soil having an average thickness of 1m.



Figure 2. Topography and Outcrop in the lease area

3. REGIONAL GEOLOGY OF KARUR DISTRICT

Granites were formed from molten rock referred to as “Magma” formed at great depths within the crust of the earth. Such rocks that were formed at great depths during the Archaean age are now exposed at the surface of the earth as a result of the combined actions of wind, air, sun and water and weathering and denudation over the past several million years.

The Multi Color Granite is medium to coarse grained in size. Plagioclase feldspar, Orthoclase feldspar and quartz are the major constituents and Garnet, Biotite, Hornblende and other mafic minerals are accessories. The petrological settings of the area are simple and not a complicated phenomenon. There are no major minerals observed in the vicinity of the proposed quarry. A brief

description of the regional Geology is discussed below.

The peninsular gneiss is the widest spread group of rocks in many parts of Tamil Nadu. The southern domain of Tamil Nadu is characterized by the khondalite group of rocks (with subordinate amounts of Charnockite) and marked by the absence of BMQ and dolerite dyke systems. The most common varieties of granite are pink, grey and Multi Colored ones. In the granites feldspar forms about 50%, quartz a little less and the rest accounted for by amphiboles and pyroxenes. This type occurs in the form of large massive bodies (Batholiths, laccoliths) spreading over hundreds of square kilometers exhibiting variation in colour and texture. Other types occur as lenses and bands within the gneisses and other metamorphic rocks. In these cases, the molten magma of granite has been emplaced into the earlier rocks as narrow, small bodies and partly interacting.

Anorthosites, syenites, porphyries and like that generally considered along with the Multi Colour granites. In these rocks quartz is nearly absent when hornblende or biotite abundant, the rock may be dark green or almost black.

3.1 Geology of the Karur

The Karur district is underlain by hard Crystalline rocks of Archaean age comprising of various rock types such as Gneiss, Charnockite, Granite Gneiss, etc.,

3.2 Structural Settings of Karur:

The general geological sequence of the rock types in the area is:-

Order of super position: -

AGE	ROCK TYPE
Pleistocene to Recent	- Reddish Soil
-----Unconformity-----	
Archaean to Proterozoic	Pegmatites,
	Granitic Gneiss
	Peninsular Gneissic Complex.
	Hornblende Biotite Gneiss
	Charnockite, Khondalite, Quartzite, Crystalline Limestone.

3.3 Geology of the lease applied area

The rock formation is popularly known as “Granite gneiss” essentially made up of a supra crustal assemblages of Plagioclase feldspar, Orthoclase feldspar and quartz as major constituents and Hornblende, Biotite and other mafic minerals are accessories and closely inter banded with Hornblende Biotite Gneiss.

The “Multi Colour Granite” (Granite Gneiss) intruded between the batholithic formation of pre-existing country rock of Biotite Gneiss concordantly with trending of N60°E – S60°W with almost vertical dipping with an average width of 100m which stretches about entire area. The Multi Colour granite is clearly visible right from the outcrops exposed upto 2m height with physical weathering fresh Multi Colour granite is concealed under reddish gravelly soil having an average

thickness of 1m and 2m Weathered granite gneiss, totally overburden having an average thickness of 3m (1m topsoil + 2m weathered rock) below from the ground level.

The Multi Colour granite is leucocratic, euhedral, medium to coarse grained, equigranular and the flow pattern of the rock mass in N60°E – S60°W. The Multi Colour Granite is observed on the surface level is pale pink in colour due to alkali feldspar domination and deep seated condition it may pale grey in colour.

It is inferred that the minor strike and dip joints are present on the surface layers which may not have a good recovery, these and strike and dip joints may reduce in deep seated conditions. Some slender pegmatite veins are intruded in a crisscross fashion which is likely to be reduced at deep seated conditions Taking in to consideration of the above geological factors, over burden and inter burden wastage during quarrying, other flaw and patches etc., the average recovery percentage without exploration has been assumed and estimated as 40% from the ROM upto a depth of 38m (1m Topsoil + 2m weathered rock + 35m Multi Colour Granite).

The Physical attitude of the Multi Color Granite deposit of this area is given below: -

Strike Direction	-	N60°E – S60°W
Dip amount and direction	-	Almost Vertical Dipping

4. RAINFALL AND CLIMATE

The district receives the rain under the influence of both southwest and northeast monsoons. The northeast monsoon chiefly contributes to the rainfall in the district. Most of the precipitation occurs in the form of cyclonic storms caused due to the depressions in Bay of Bengal. The southwest monsoon rainfall is highly erratic and summer rains are negligible. The average annual rainfall over the district varies from about 620 mm to 745 mm. It is the minimum around Aravakurichi (622.7mm) in the western part of the district. It gradually increases towards eastwards and attains a maximum around Kulithalai (744.6mm). The district enjoys a tropical climate. The period from March to May

is generally hot and dry. The weather is pleasant during the period from November to January. Usually mornings are more humid than afternoons. The relative humidities are generally between 40 and 80%. But in the period from February to July the air is comparatively drier in the afternoon. The mean maximum temperature ranges from 26.7 to 38.56 °C and the mean minimum temperature ranges from 18.7°C to 29.3 °C. The daytime heat is oppressive and the temperature is as high as 43.9°C. The lowest temperature recorded is of the order of 13.9°C.

5. GEOMORPHYLOGY AND SOIL TYPES

5.1 Geomorphology

The entire area of the district is a pediplain. The Rangamalai hills and Kadavur hills occurring in the southern side of the district constitutes the remnants of the much denuded Eastern Ghats and rise to heights of over 1031 m above mean sea level. From these hills the district slopes gently towards north east and forms a vast stretch of plain country till the eastern boarder of the district. There are numerous small residual hills represented by Ayyarmalai, Thanthonimalai and Velayuthampalayam hills. The general elevation of the area is ranging between 100 m and 200m above mean sea level The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hill, 2) Pediments, 3) Shallow Pediments, 4) Buried Pediments and 5) Alluvial plain.

5.2 Soils

The soils of Karur district can be broadly classified into 4 major soils types viz., Red Soil, Thin Red Soil, Red Loam and River Alluvium Soil. Red soil is the predominant one covering major part of the district followed by Thin Red soil and Red loam. The red soils are predominantly seen in Kadavur, Kulithalai, Krishnarayapuram, Thanthoni and Thogamalai blocks. The thin red soils are seen in Aravakurichi and K.Paramathiy blocks. Major portion of the Karur block is covered by red loam.

6. HYDROGEOLOGY

Karur district is underlain entirely by Archaean Crystalline formations with recent alluvial deposits occurring along the river and streams courses. Weathered, fissured and fractured crystalline rocks and the recent alluvial deposits constitute the important aquifer systems in the district.

The porous formations in the district are represented by river alluvium. These alluvial deposits are confined to the Major River and stream courses only. Ground water occurs under phreatic conditions. The maximum saturated thickness of these aquifers is up to 10 m depending upon the topographic conditions.

The hard consolidated crystalline rocks of Archaean age represent weathered, fissured and fractured formations of gneisses, granites, charnockites and other associated rocks. Ground water occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones. The thickness of the weathered mantle of the hard rocks is varying from less than a meter to as much as 20.10 m. It is within the depth of 15m in major part of the district.

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

7. METHODOLOGY OF STUDY

1. Open well and bore well water level measurement, depth of water level diameter of open well, agriculture land survey.
2. Geophysical survey for deep aquifer in nearby site Rock and soil geology also collected for the aquifer characteristic study.
3. Aquifer thickness and quality measurement study in nearby proposed mine site areas of the study area.

7.1 Geophysical Investigation

7.1.1 Vertical Electrical resistivity sounding for aquifer study.

The electrical resistivity study is used to determine aquifer and occurred rock in the proposed site. The DDR 3 equipment was used for data collection (**Fig.3**)



Figure 3. Electrical resistivity survey in the mine lease area.

7.1.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the

spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A , expressed as:

$$R = R_s * L/A \text{ (in Ohm)}$$

Where R_s is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

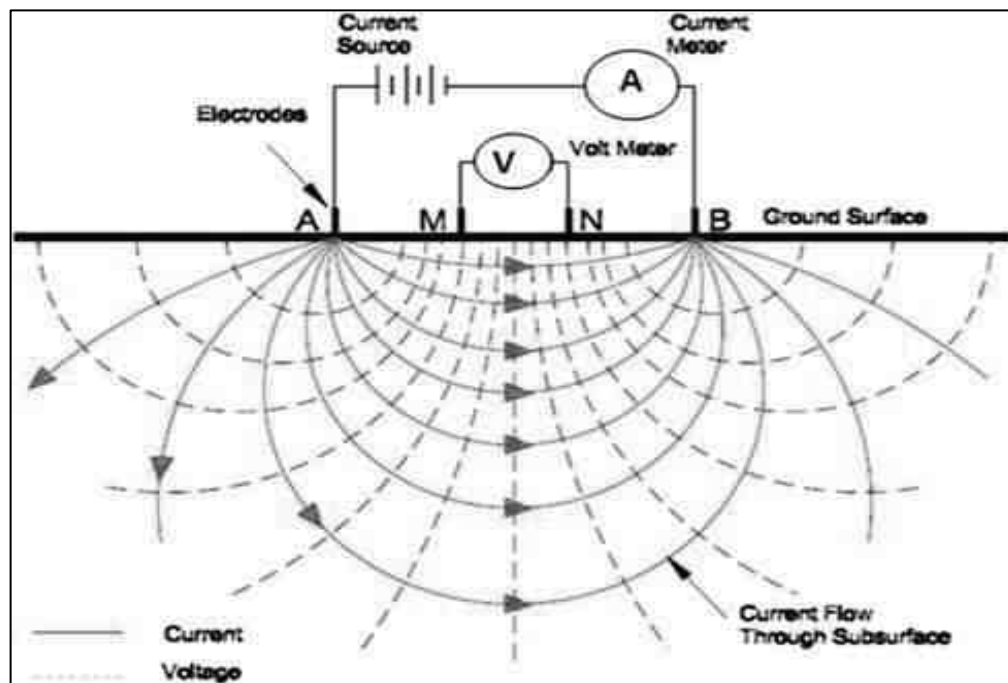


Figure 4. Schematic Diagram of Electrical resistivity principle

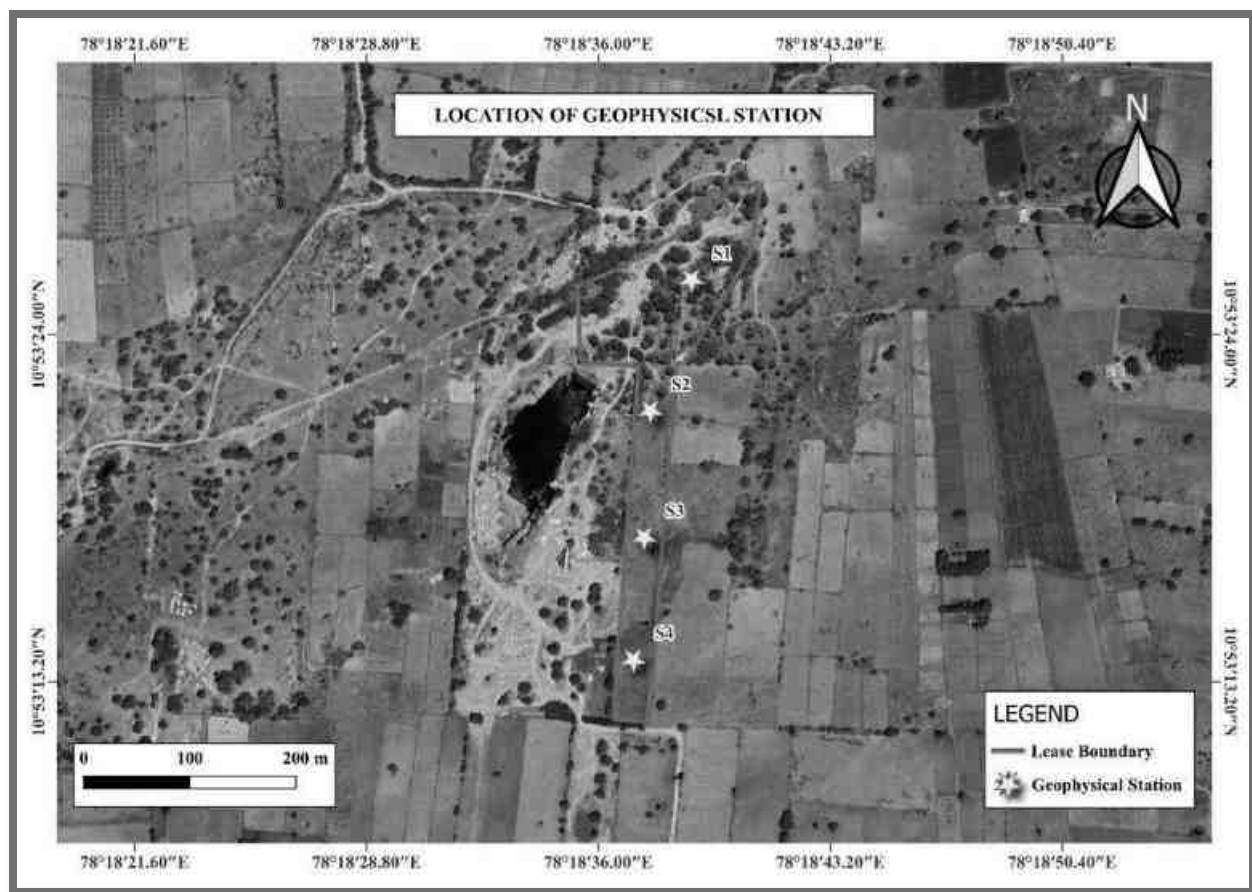


Figure 5. Geophysical survey location in the lease area

8. GEOPHYSICAL DATA INTERPRETATION & GRAPH

Table 1 Geophysical data of Station 1

<i>S. No</i>	<i>Ab/2</i>	<i>Mn /2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
1	2	1	4.7	111.31	524.54
2	4	1	23.6	25.96	611.67
3	6	1	55.0	12.06	663.03
4	8	1	99.0	7.29	721.42
5	10	1	155.5	5.38	836.64
6	10	5	23.6	25.62	603.66
7	15	5	62.8	13.76	864.57
8	20	5	117.8	9.76	1149.83
9	30	5	274.9	5.94	1632.85
10	40	5	494.8	3.87	1914.88
11	50	5	777.5	2.62	2037.17

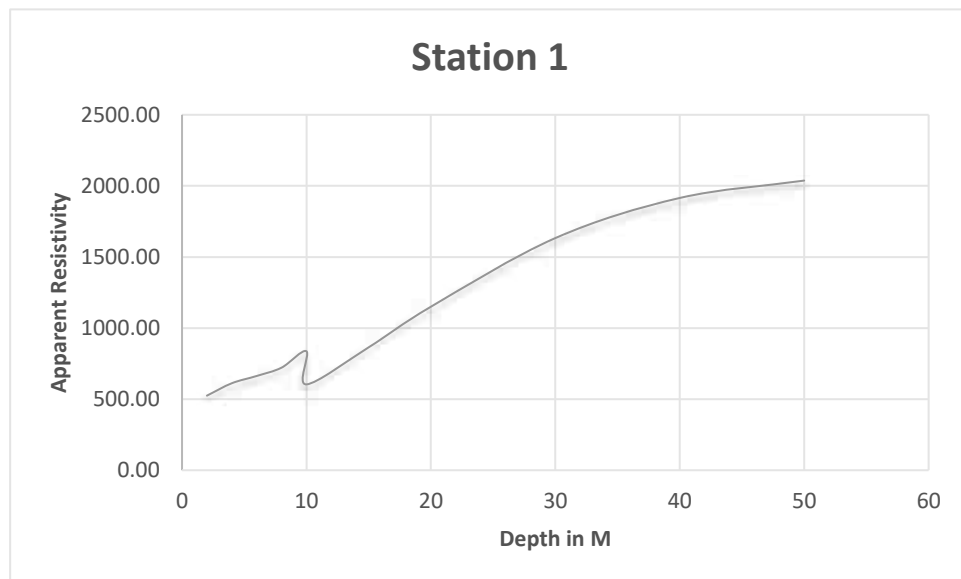


Figure 6 Graphical Representation of Geophysical data Station 1

Table 2 Geophysical data of Station 2

<i>S. No</i>	<i>Ab/2</i>	<i>Mn /2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
1	2	1	4.7	70.38	331.66
2	4	1	23.6	16.94	399.14
3	6	1	55.0	8.80	483.81
4	8	1	99.0	5.58	552.20
5	10	1	155.5	4.20	653.14
6	10	5	23.6	19.74	465.11
7	15	5	62.8	10.87	682.98
8	20	5	117.8	7.40	871.79
9	30	5	274.9	4.54	1248.00
10	40	5	494.8	3.21	1588.31
11	50	5	777.5	2.33	1811.68

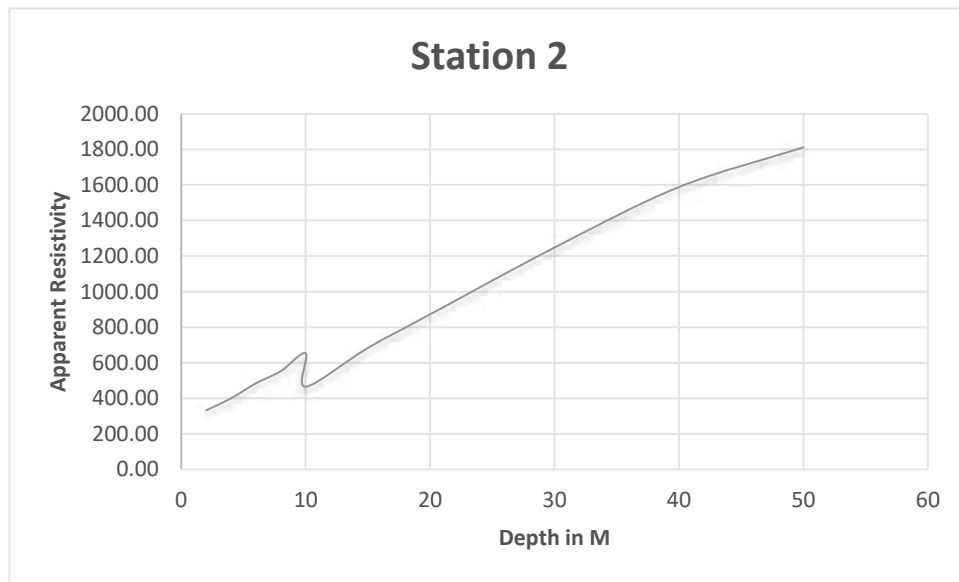


Figure 7 Graphical Representation of Geophysical data Station 2

Table 3 Geophysical data of Station 3

<i>S. No</i>	<i>Ab/2</i>	<i>Mn/2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
1	2	1	4.7	49.43	232.93
2	4	1	23.6	11.62	273.79
3	6	1	55.0	6.36	349.66
4	8	1	99.0	4.24	419.59
5	10	1	155.5	3.25	505.40
6	10	5	23.6	18.25	430.01
7	15	5	62.8	10.16	638.37
8	20	5	117.8	7.02	827.03
9	30	5	274.9	4.12	1132.55
10	40	5	494.8	2.56	1266.69
11	50	5	777.5	1.82	1415.13

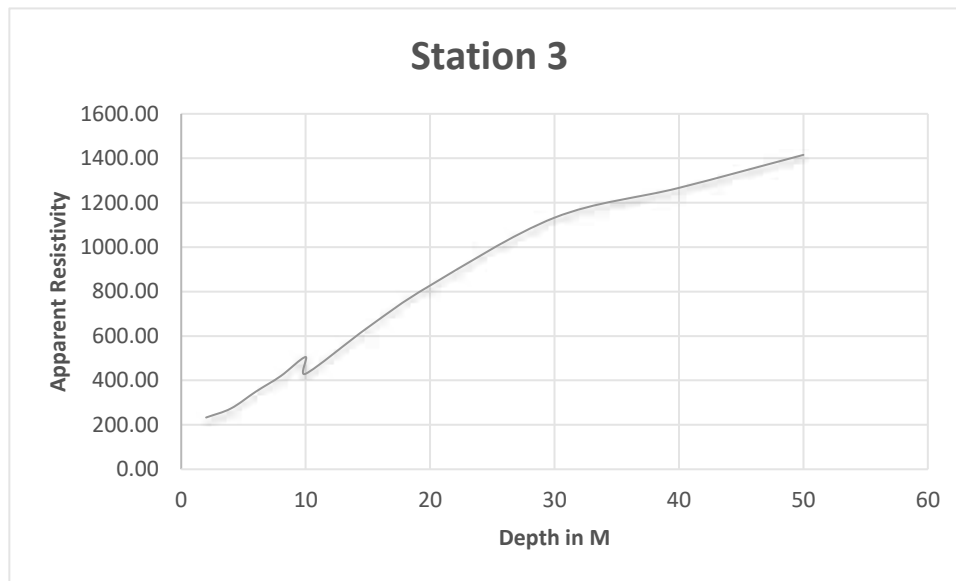


Figure 8 Graphical Representation of Geophysical data Station 3

Table 4 Geophysical data of Station 4

<i>S. No</i>	<i>Ab/2</i>	<i>Mn/2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
1	2	1	4.7	8.57	40.39
2	4	1	23.6	3.59	84.59
3	6	1	55.0	2.86	157.24
4	8	1	99.0	2.32	229.59
5	10	1	155.5	1.77	275.25
6	10	5	23.6	4.58	107.91
7	15	5	62.8	2.76	173.42
8	20	5	117.8	1.96	230.91
9	30	5	274.9	1.19	327.12
10	40	5	494.8	0.84	415.63
11	50	5	777.5	0.61	474.30

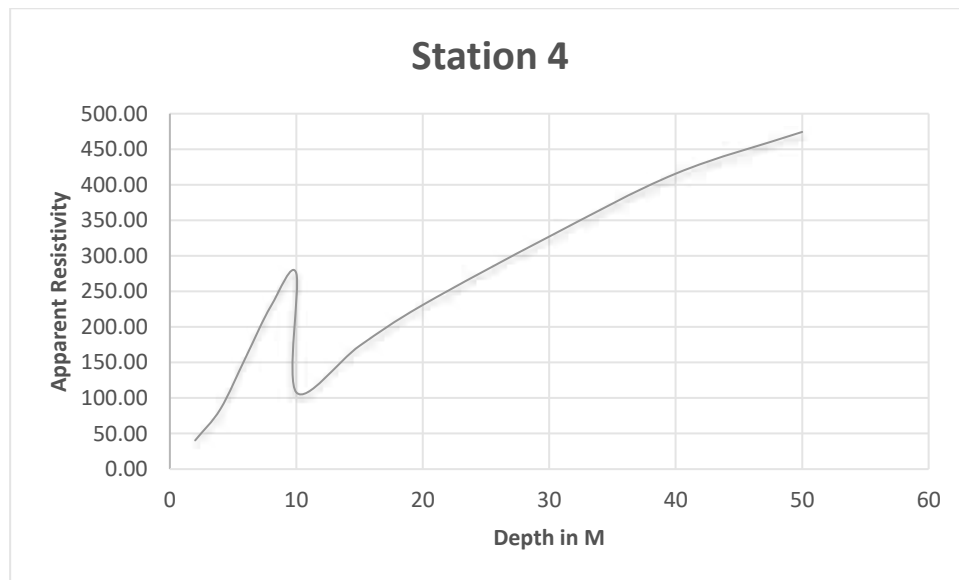
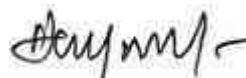


Figure 9 Graphical Representation of Geophysical data Station 4

9. CONCLUSION

- ❖ The area is situated in undulated terrain. The gradient is gentle towards East side and altitude of the area is 130m – 131m above from MSL.
- ❖ The geological study of the given area covered by Granite in the entire area. The study area Granite body exhibit vertical dipping formation. So, it acts as a barrier and restrict the groundwater flow movement.
- ❖ Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 50 m.
- ❖ In this mine lease area, groundwater occurs at shallow depths, depending on the intensity of weathering and its development is much less compared to gneissic formation. The mine area such no major intersections of water table are expected up to 50 m.
- ❖ The aquifer is found within the weathered / fractured metamorphic terrain. Currently the aquifers are located at 60 to 64 meters below ground level (BGL). However, considering the approved mining plan ultimate depth, which is **38 m**. It will not impact the groundwater table.
- ❖ To obviate the impact due to catchment of rainwater as surface runoff management, effective measures like construction of peripheral garland drain, settling pond and ensuring water flow to the nearby downstream users are devised and will be implemented during the course of mining.
- ❖ From the above study it can be concluded there will be no adverse effect on the hydrological regime, water drainage, environment, and livelihood. Agricultural activity in the region.



Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist
M/s. Geo Exploration and Mining Solutions,
Regd. Office: No. 17, Advaita Ashram Road,
Alagapuram, Salem – 636 004, Tamil Nadu.

G.MOHANRAJ EXPLOSIVES

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NO.10, NEW MARIAMMAN KOIL STREET, TENNUR, TRICHY-17

Date::19.08.2025

To:

Tmt.D.RANI

W/o E.DHANAPAL

Old No.D/364,New No.D/11

Ukkira kalamman street,Anna nagar,

Thennur,Trichy Dt.

Sub: Blasting work using explosives in your proposed quarry-Reg.

Sir,

We have explosives magazine in form LE-3 named **G.MOHANRAJ EXPLOSIVES**.licence **No.E/SC/TN/22/441(E29594)**,our office functioning at 284/1B, kampathanparai, naganur village, Kulithalai tk ,Karur Dt.

We are enacting 2 explosives vans for transporting explosives from our magazine to blasting site and we have well experienced licence blasters certified second class managers and shot firer for safety blasting work

We are willing to undertake blasting work on contract basis at your site.

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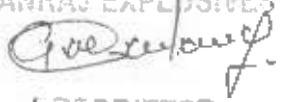
Village: Veerampalayam

Taluk: Krishnarayapuram

District: Karur

Thanking you

Yours Faithfully

G.MOHANRAJ EXPLOSIVES

PROPRIETOR

Enclosed.

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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, Shastri Bhavan
26 हड्डोउस रोड, नुंगम्बक्कम चेन्नै | 26 Haddous Road, Nungambakkam Chennai 600006
फोन (Phone) - 28281023 | फैक्स (Fax) - 28284848
ई-मेल Email: jtocechennai@explosives.gov.in

संख्या (No.) E/SC/TN/22/441(E29594)

दिनांक (Date) 06/04/2023

सेवा में | To,

G MOHANRAJ,
10- NEW MARIAMMAN KOIL STREET, TENNUR, TRICHY 17, Town Village - TRICHY
District-TIRUCHIRAPPALLI, State-Tamil Nadu, Pincode - 620017

विषय Survey No(s) 284/1B, ग्राम NAGANUR, Kulithalai taluk, जिला KARUR, राज्य Tamil Nadu में विस्फोटक के मैगजीन में उपयोग के लिए कब्जा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति से E/SC/TN/22/441(E29594) के नवीनीकरण संदर्भ में।
Subject Possession for Use of of Explosives from magazine situated at Survey No(s) : 284/1B, NAGANUR, Kulithalai taluk, Dist KARUR, Tamil Nadu -Licence No E/SC/TN/22/441(E29594) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding

महोदय | Sir,

आपका उपर्युक्त विषय पर पत्र संख्या 84146 दिनांक 20/03/2023 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्रारूप LE-3 में जारी अनुज्ञप्ति दिनांक 31/3/2023 तक नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।

Reference to your letter No 84146 dated: 20/03/2023, the subject licence duly renewed upto 31/3/2023 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith.

अनुज्ञप्ति के आगामी नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/2023 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 31/3/2023

- 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 शुल्को का, विस्फोटक नियम, 2008 के तहत ऑनलाइन आवेदन पोर्टल पर उपलब्ध ई-भुगतान सुविधा के माध्यम से लाइसेंस शुल्क ऑनलाइन जमा किया जाना है।
Licence fees renewable for one to five years, to be submitted online through e-payment facility available on online application portal under the Explosives Rules, 2008
- 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 मांगपत्र (इंडेंट) 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 to 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 त्रैमासिक 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 पहुंचानी 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

भवदीय | Your's faithfully

(अहिन नंदी | AHIN NANDI)

उप विस्फोटक नियंत्रक | Dy. Controller of Explosives

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

दक्षिणांचल, चेन्नै | South Circle, Chennai

प्रतिनिधि प्रेषित | Copy Forwarded to:

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

कृते संयुक्त मुख्य विस्फोटक नियंत्रक | For Joint Chief Controller of Explosives
दक्षिणांचल, चेन्नै | 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>)

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

अनुज्ञापि प्ररूप ढस. 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 1 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 के लिए अनुज्ञापि
Licence to possess (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञापि सं. (Licence No.): E/SC/TN/22/441(E29594)
वार्षिक फीस रूपए (Annual Fee Rs) 5500/-

1 Licence is hereby granted to

**G.MOHANRAJ (अधिभोगी / Occupier : G Mohanraj), 10- NEW MARIAMMAN KOIL STREET, TENNUR, TRICHY-17,
Town/Village - TRICHY, District-TIRUCHIRAPPALLI, State-Tamil Nadu, Pincode - 620017**



को अनुज्ञापि अनुदत्त की जाती है।

2 अनुज्ञापिधारी की प्राप्ति। Status of licensee Individual

3 अनुज्ञापि निम्नलिखित प्रयोजनों के लिए विधिमाम्य है।

Licence is valid only for the following purpose

possess for use of Nitrate Mixture, Safety Fuse, Detonating Fuse, Electric Detonators, Ordinary Detonator, - के उपयोग के लिए

4 अनुज्ञापि विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमाम्य 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	2000 Kg
2	Safety Fuse	6, 1	0	10000 Mtrs
3	Detonating Fuse	6, 2	0	10000 Mtrs
4	Electric Detonators	6, 3	0	10000 Nos
5	Ordinary Detonator	6, 3	0	30000 Nos

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

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

10 times as above.

5 निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापि परिसर की पृष्टि होती है।

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

रेखाचित्र क्र (Drawing No) E/SC/TN/22/441(E29594)
दिनांक (Dated) 10/04/2006

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

Survey No(s), 284/1B, ग्राम (Town/Village) NAGANUR, Kulkarni taluk

जिला (District)

KARUR

राज्य (State)

Tamil Nadu

दूरभाष (Phone)

9842854022

ई मेल (E-Mail)

पिनकोड (Pincode)

फैक्स (Fax)

7 अनुज्ञापि परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं।

The licensed premises consist of following facilities

A MAIN MAGAZINE, A DETONATOR ANNEXE AND A LOBBY

8 अनुज्ञापि समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों 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.

1 उपर्युक्त 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

2 अनुज्ञापि प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापि की शर्तों और अतिरिक्त शर्तों।

Conditions and Additional Conditions of this licence signed by the licensing authority

3 दूरी प्ररूप DE-2 Distance Form DE-2

9 यह अनुज्ञापि तारीख 31 मार्च 2008 तक विधिमाम्य रहेगी। This licence shall remain valid till 31st day of March 2008.

यह अनुज्ञापि, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपबर्णित इस अनुज्ञापि की शर्तों का अधिक्रमण करने या यदि अनुज्ञापि परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिबंधित की जा सकती है, जहाँ वह लागू हों।
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 - 10/04/2006

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

Amendments :

• Amendment of Quantity of Explosives/Monthly Purchase Limit dated 27/09/2011

नवीनीकरण के पृष्ठानक के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख Date of Renewal	समाप्ति की तारीख Date of Expiry	अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प Signature of licensing authority and stamp
06/04/2023	31/03/2028	Jt. Chief Controller of Explosives, South Circle, Chennai

सावधानी चेतावनी : विस्फोटकों को गलत ढंग से बसाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

Digitally signed by AHN NANDI
Reason: Licence No.: E/SC/TN/22/441
Location: Chennai (E29594)
Date: 2023.04.06 04:17:04 +05'30

G.MOHANRAJ EXPLOSIVES

CELL:9842088348

NO.284/1B,KAMBATHANPARAI,NAGANUR VILLAGE,KULITHALAI TK,KARUR DT.

LICENCE NO.E/SC/TN/22/441(E 29594)

NO.10, NEW MARIAMMAN KOIL STREET, TENNUR, TRICHY-17

To:

Date:19.08.2025

Tmt.D.RANI

W/o E.DHANAPAL

Old No.D/364,New No.D/11

Ukkira kalamman street,Anna nagar,

Thennur,Trichy Dt.

Sub: Blasting work using explosives in your proposed quarry-Reg.

Sir,

We have explosives magazine in form LE-3 named G.MOHANRAJ EXPLOSIVES,licence No.E/SC/TN/22/441(E29594),our office functioning at 284/1B, kampathanparai, naganur village, Kulithalai tk ,Karur Dt.

We are enacting 2 explosives vans for transporting explosives from our magazine to blasting site and we have well experienced licence blasters certified second class managers and shot firer for safety blasting work

We are willing to undertake blasting work on contract basis at your site.

SF.no:75/1B,75/3A,76/1,78/1,78/2

Taluk: Krishnarayapuram

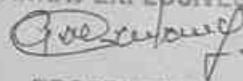
Village: Veerampalayam

District: Karur

Thanking you

Yours Faithfully

For G.MOHANRAJ EXPLOSIVES



PROPRIETOR

Enclosed.

(i) Magazine licence copy



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, वासी भवन | A & D - Wing, Block 1-8, 2nd Floor, Vasanth Bhavan
 26 हड्डरस रोड, नुंगनबाक्कम चेन्नई | 26 Haddrus Road, Nungambakkam Chennai 600006
 फ़ोन (Phone) - 28281023 | फ़ैक्स (Fax) - 28284348
 ई-मेल Email: jccochennai@explosives.gov.in

संख्या (No.) E/SC/TN/22/441(E29594)
 सेवा में | To,

दिनांक (Date): 06/04/2023

O MOHANRAJ,
 10- NEW MARLAMMAN KOIL STREET, TENNUR, TRICHY-17, Town/Village - TRICHY
 District-TRICHYRAPPALLI State-Tamil Nadu, Pincode - 620017

विषय | Survey No(s) 284/IB, ग्राम NAGANUR, Kulthalai taluk, जिला KARUR, राज्य Tamil Nadu में विस्फोटक के पैगजीन में उपयोग के लिए कच्चा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुमति से E/SC/TN/22/441(E29594) के नवीनीकरण संबंध में।
 Subject: Possession for Use of Explosives from magazine situated at Survey No(s) 284/IB, NAGANUR, Kulthalai taluk, Dist. KARUR, Tamil Nadu - Licence No. E/SC/TN/22/441(E29594) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding
 महोदय | Sir,

आपका उपरोक्त विषय पर पत्र संख्या 84146 दिनांक 26/03/2023 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्रत्येक LE-3 में जारी अनुमति दिनांक 31/3/2028 तक नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।
 Reference to your letter No. 84146 dated: 26/03/2023, the subject licence duly renewed upto 31/3/2028 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith.
 अनुमति के आगामी नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/2028 से पहले इस कार्यालय को भेजे जाएं।
 For further renewal of licence, please submit the following documents as to reach this office on or before 31/3/2028.

- प्रत्येक आरई-1 में विधिवत पूर्ण एवं हस्ताक्षरित आवेदन।
 Application in Form RE-1 duly filled in and signed.
- एक से पांच वर्ष के अनुमति शुल्को का, विस्फोटक नियम, 2008 के तहत ऑनलाइन आवेदन पोर्टल पर उपलब्ध ई-भुगतान सुविधा के माध्यम से साइबर सुरक्षा ऑनलाइन जमा किया जाना है।
 Licence fees renewable for use in five years, to be submitted online through e-payment facility available on online application portal under the Explosives Rules, 2008.
- अनुमोदित प्लान के साथ मूल अनुमति।
 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 मांगपत्र (इंटेन्ड) आयुक्तता को दिया जाए और उसकी एक प्रति इस कार्यालय को भेजी जाए (अतिरिक्तवासी गोदाम के लिए लागू नहीं)।
 Intend 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 houses)
- कृपया विस्फोटकों की त्रैमासिक 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 (अतिरिक्तवासी 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 संक्षम द्वारा की जाएगी जो उपरोक्त नियमों के तहत एक वैध शॉट फायर प्रमाणपत्र धारक हो। हालांकि, खान अधिनियम 1952 के अर्धीन आने वाले स्थानों 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.

भवदीय | Yours faithfully

(अहिन नंदी | AHIN NANDI)

उप विस्फोटक निबंधक | Dy. Controller of Explosives

कूट संयुक्त मुख्य विस्फोटक निबंधक | For Joint Chief Controller of Explosives

दक्षिणार्ध, चेन्नई | South Circle, Chennai

प्रतिरूपित प्रेषित | Copy Forwarded to:

1. जिला मजिस्ट्रेट (District Magistrate), KARUR (Tamil Nadu), सूचना के लिए (for information.)

कूट संयुक्त मुख्य विस्फोटक निबंधक | For Joint Chief Controller of Explosives

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(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>)

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अनुज्ञापि प्ररूप एत. ई-3 | LICENCE FORM LE-3
(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (प) देखिए।)
(See article 3(a) to (d) of Part 1 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 मागजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापि

Licence to possess : (c) for use explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञापि नं. (Licence No.): E/SC/TN/22/441(E29594)
आधिकारिक शुल्क (Annual Fee Rs): 5500/-

1. Licence is hereby granted to

G. MOHANRAJ (अधिभोगी / Occupier : G Mohanraj), 10- NEW MARIAMMAN KOIL STREET, TENNUR, TRICHY-17,
Town/Village - TRICHY, District-TRUCHIRAPPALLI, State-Tamil Nadu, Pincode - 620017.



को अनुज्ञापि अनुदत्त की जाती है।

2. अनुज्ञापिधारी की प्राप्ति। Status of licensee: Individual

3. अनुज्ञापि निम्नलिखित प्रयोजनों के लिए विधिमान्य है।
Licence is valid only for the following purpose.

4. अनुज्ञापि विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।
Licence is valid for the following kinds and quantity of explosives: -- (क) (a)

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	2000 K.G
2.	Safety Fuse	6, 1	0	10000 Mtrs
3.	Detonating Fuse	6, 2	0	10000 Mtrs
4.	Electric Detonators	6, 3	0	10000 Nos
5.	Ordinary Detonator	6, 3	0	30000 Nos

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा। अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापि के लिए।
(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 अनुज्ञापि परिसर की पृष्ठ होती है।
The licensed premises shall conform to the following drawing(s).

6. अनुज्ञापि परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:
Survey No(s) 284/1B, ग्राम (Town/Village) - NAGANUR, Kulshabai taluk

जिला (District)
दूरभाष (Phone)

KARUR
9842854022

पुलिस थाना (Police Station) : THOGAIMALAI
राज्य (State)
ई. मेल (E-Mail)

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/441(E29594)
दिनांक (Dated) 10/04/2006

7. अनुज्ञापि परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।
The licensed premises consist of following facilities.

8. अनुज्ञापि समय - समय पर पथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपायों

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.

1. उपर्युक्त क्रम सं. 5 में पथा संशोधित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.

2. अनुज्ञापि प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापि की शर्तों और अतिरिक्त शर्तों।
Conditions and Additional Conditions of this licence signed by the licensing authority.

3. दूरी प्ररूप DE-2 | Distance Form DE-2

9. यह अनुज्ञापि तारीख 31 मार्च 2008 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2008.

यह अनुज्ञापि, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपर्युक्त इस अनुज्ञापि की शर्तों का अधिक्रमण करने या यदि अनुज्ञापि परिसर योजना या उसके संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिस्फुट 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 VII, 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 - 10/04/2006

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

Amendments :

• Amendment of Quantity of Explosives/Monthly Purchase Limit dated - 27/09/2011

नवीनीकरण के पृष्ठान के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

06/04/2023

31/03/2028

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

Jt. Chief Controller of Explosives, South Circle, Chennai

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडाधिक अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout their records.

Digitally signed by A/RIN NANDI
Reason: Licence No. : E/SC/TN/22/441
Location: Chennai [E29594]
Date: 2023.04.06 04:17:04 +05:30



File No.: 11454
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment
Authority(SEIAA), TAMIL NADU)



Dated 11/03/2025



To,

Thiru.DHANAPAL E
D/364, 1st Cross, Ukkirakaliammankovil Street, Anna Nagar, Thennur, Trichy District, Thennur ,
TIRUCHIRAPPALLI, TAMIL NADU, , 620017
omsakthitile@gmail.com

Subject: Grant of prior Environmental Clearance (EC) to the proposed Mining Project under the provisions of EIA Notification 2006-as amended regarding

Sir/Madam,

SEIAA-TN - Existing Multi Coloured Granite quarry over an extent of 4.89.0 Ha at S.F.No:74/2, 74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B & 75/3D of Veeriyapalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu by Thiru. E. Dhanapal - under project category - "B1" and Schedule S.No.1(a) – Issue of Environmental Clearance – Regarding
Ref:

1. Online Proposal No. SIA/TN/MIN/505388/2024, Dated: 13.11.2024.
2. Application seeking Environmental Clearance dated: 20.02.2025.
3. Minutes of 534th meeting of SEAC held on 20.02.2025
4. Minutes of 800th authority meeting held on 04.03.2025 & 05.03.2025.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC24B0108TN5943943N
(ii) File No.	11454
(iii) Clearance Type	Fresh EC
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals Veeriyampalayam Multi-Coloured Granite Quarry Belongs to E. Dhanapal Extent:4.89.0ha S.F.Nos.74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D and 74/2, Veeriyampalayam Village, Krishnarayapuram Taluk, Karur District
(vii) Name of Project	
(ix) Location of Project (District, State)	KARUR, TAMIL NADU

(x) Issuing Authority
(xii) Applicability of General Conditions

SEIAA
No

1. In view of the particulars given in the Para 1 above, the project proposal inter alia including Form-1 (Part A, B and C)/EMP Reports 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 04.03.2025 & 05.03.2025. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed from the PARIVESH portal by scanning the QR Code above.

3. The SEAC, based on information submitted viz: Form 1 (Part A, B and C)/EMP report etc., & clarifications provided by the project proponent and after detailed deliberations on all technical aspects and public hearing compliance thereto furnished by the Project Proponent, recommended the proposal for grant of Environment Clearance under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of Specific and Standard EC conditions as detailed in the point below.

4. The SEIAA has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the SEAC hereby accords Environment Clearance for the instant proposal **Thiru.E. Dhanapal** under the provisions of EIA Notification, 2006 and as amended thereof subject to compliance of the Specific and Standard EC conditions as given in Annexure (2)

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

6. The Environmental Clearance 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. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.

8. Salient features of the proposal are as follows:

Sl.No	Details of the Proposal	Data Furnished
1	Name of the Owner/Firm	Thiru.E. Dhanapal D/364, 1st Cross, Ukkirakaliammankovil Street, Anna Nagar, Thennur, Trichy District-620017
2	Type of quarrying	Multi Coloured Granite Quarry
3	S.F Nos. of the quarry site	74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D & 74/2
4	Village in which situated	Veeriyapalayam
5	Taluk in which situated	Krishnarayapuram
6	District in which situated	Karur
7	Extent of quarry (in ha.)	4.89.0 Ha
8	Latitude & Longitude of all corners of the quarry site	10°53'11.92"N to 10°53'25.40"N 78°18'30.96"E to 78°18'36.72"E
9	Topo Sheet No.	58 J/05
10	Type of mining	Open Cast Mechanized Mining Method
11	Period of Current Mine Plan	5 Years
12	Production (Quantity in m ³)	70,375 m³ of RoM which includes Multi Colour Granite recovery of 28,150 m³ @ 40 % & Rejects of 42,225 m³ (@ 60% up to the maximum depth of 28m
13	Depth of Quarrying	28m
14	Depth of water table	64m BGL
15	Man Power requirement per day:	40 Nos
16	Water requirement:	2.0 KLD
17	Power requirement	1,12,600 liters of HSD for the five years

18	Precise area communication by Industries Department	Lr. No. G.O.(3D) No.3 Industries (MMB.2) Department, Dated: 12.02.2014.
19	Mining Plan approved by Commissioner, Commissionerate of Geology & Mining.	Rc.No.8879/MM2/2023, dated: 06.05.2024.
20	500m cluster letter issued by the Deputy Director Dep. of Geology & Mining,	Roc.No.231/Mines/2013 Dated: 22.09.2020.
21	VAO Certificate Regarding Structures within 300m Radius	Letter obtained from VAO on 17.03.2023
22	Project Cost (excluding EMP cost)	Rs.397 Lakhs
23	EMP cost (in Rs. Lakh).	Rs.238 Lakhs
24	CER Cost (in Rs. Lakh).	Rs.5.0 Lakhs

Validity:

This Environmental Clearance is accorded for the quantity 70,375 m³ of RoM which includes Multi Colour Granite recovery of 28,150 m³ @ 40 % & Rejects of 42,225 m³ (@ 60% up to the maximum depth of 28m and the annual peak production should not exceed 15,650 m³ of Multi Colour Granite recovery.

The Environmental Clearance issued is valid as per the approved mine plan period and as per MoEF&CC's notification S.O.1533(E) dated 14.09.2006 and S.O. 1807(E) dated 12.04.2022.

9.General Instructions:

(i)The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of SEIAA website where it is displayed.

(ii)The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.

(iii)The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.

(iv)Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

(v)Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

The Regional Office of this SEIAA shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(vi)Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

10. This issue with an approval of the Competent Authority. For information on deliberations, refer to the minutes of SEAC and SEIAA available in the PARIVESH Portal.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary to Government, Environment, Climate Change 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 Chairperson, TNPC Board, 76, Mount Salai, Guindy, Chennai-32.
7. The District Collector, Karur District.

8. The Commissioner of Geology and Mines, Guindy, Chennai - 32.
9. Assistant Director, Department of Geology & Mining, Karur District.
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Annexure 1

Specific EC Conditions for (Mining Of Minerals)

1. Seiaa Specific Conditions:

S. No	EC Conditions
1.1	1. Keeping in view of MoEF&CC's notification S.O.1533(E) dated.14.09.2006 and S.O. 1807(E) dated 12.04.2022, this Environmental Clearance is valid as per the approved mine plan period. 2. The EC granted is valid only for Multi Colour Granite @ 40 % recovery. 3. The PP shall implement all mitigation measures related to the issues raised in the public hearing, and these measures should be incorporated into the EMP. 4. The quarries in the cluster should work cohesively for the conservation and protection of the site by formation of Cluster Management Committee (CMC) & CMC should support the environmental, ecological and social causes around the mining site during the mine plan period. The Action taken in this regard shall be included in the Half yearly compliance report (HYCR). 5. The Public Hearing concerns have to be addressed individually along with the mitigation measures and adequate budget has to be incorporated in the EMP cost. The Action taken in this regard shall be included in the Half yearly compliance report (HYCR). 6. Cluster Management Committee (CMC) should pool all the resources for the environmental security and safety for accomplishing Environmental Clearance conditions within the site. 7. Cluster Management Committee (CMC) should collectively work towards attaining EMP activities. The Action taken in this regard shall be included in the Half yearly compliance report (HYCR). 8. Besides accomplishing EC conditions within their project sites, CMC should collectively work for effective and efficient environmental management of the cluster, looking into aspects of common property resources, besides common roads, drains and other infrastructure used by all in the cluster. 9. CMC should also jointly enhance environmental monitoring within the project site to prevent mishaps, accidents and irregularities besides attending to staff health and welfare. 10. CMC should frequently hold health camps and medical screening to ensure health and hygiene of the labourers and staff collectively and CMC should support education of the labour and staff children in the Cluster. 11. CMC besides working for Ecological restoration, afforestation and protection of green belt area of their project sites, will ensure through scientific and social intervention the ecological restoration of the cluster through progressive and final closure for ensuring/resuming near natural site conditions, before the site is abandoned after the mine period. 12. The mining activity should not disrupt agricultural practices or alter the drainage pattern. 13. The EC granted is subject to review by District Collector, Mines Dept. and TNPCB on completion of every 5 years and also during the mine plan period, till the project life so as to review the EC conditions and to ensure that they have all been adhered to and implemented. 14. The project proponent shall submit a Certified Compliance Report obtained from RO of MoEF&CC to the monitoring, regulatory and other concerned authorities including SEIAA, while seeking a renewal of the mining plan to cover the project life. 15. There should be regular monitoring of air quality, water quality, ground water level and noise quality and reports regarding the same should be submitted to TNPCB, SEIAA & RO of MoEF&CC once in every 6 months. 16. The proponent shall strictly adhere to the mining plan and half yearly and annual returns shall be

S. No	EC Conditions
	submitted to the Director of Geology and Mining Department with copy marked to TNPCB, SEIAA & RO of MoEF&CC. 17. Biodiversity in and around the project area should be monitored frequently and detailed biodiversity report should be submitted every year to SEIAA & RO of MoEF&CC. 18. The progressive and final mine closure plan including the green belt implementation and Environmental norms should be strictly followed as per the EMP and as per the amount committed and approved in EC for EMP. Status of progressive mine closure and green belt implementation should be included in the half yearly compliance report submitted to TNPCB, SEIAA & RO of MoEF&CC. 19. As per the OM vide F. No. IA3-22/1/2022-IA-III [E- 172624] Dated: 14.06.2022, the Project Proponents are directed to submit the six-monthly compliance on the Environmental conditions prescribed in the prior Environmental clearance letter(s) through newly developed compliance module in the PARIVESH Portal from the respective login. A copy of the half yearly compliance report should be mailed to envcompseiaatn@gmail.com. 20. The amount allocated for EMP should be kept in a separate account and both the capital and recurring expenditures should be done year wise for the works identified, approved and as committed. The work & expenditure made under EMP should be elaborated in the bi-annual compliance report submitted and also should be brought to the notice of concerned authorities during inspections. 21. The project proponent shall store/dump the rejects generated within the earmarked area of the project site and utilize the same for mine closure as per the approved mine closure plan. 22. The plantation of saplings shall be carried out in the earmarked greenbelt area as a part of the tree plantation campaign “Ek Ped Ma Ke Naam” and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

2. Seac Conditions - Site Specific

S. No	EC Conditions
2.1	1) The prior Environmental Clearance granted for this mining project shall be valid subject to the standard conditions as per the Annexure I of this minutes & normal conditions stipulated by MOEF &CC. 2) The PP shall mark the DGPS reference pillars painted with blue & white colour indicating the safety barrier of 7.5 m to be left under the Rule 13 (1) of MCDR, 1988 within the lease boundary and protective bunds, before obtaining the CTO from the TNPCB. 3) The PP shall register promptly through online in the Shram Suvidha Portal which is the official portal of Ministry of Labour & Employment, Govt of India to obtain Labour Identification Number (LIN) before obtaining the CTO from the TNPCB. 4) The PP shall appoint a statutory Mine Manager possessing I / II Class Mines Manager Certificate of Competency (R/UR) under MMR 1961 before executing the lease and a copy of such appointment shall be sent to the DMS/Chennai Region atleast 30 days before the commencement of the mining operations without fail. 5) As accepted by the Project Proponent the CER cost is Rs. 5,00,000/- and the amount shall be spent for the committed activities at Panchayat Union Primary School, Pudhupatti Village before obtaining CTO from TNPCB. 6) The PP shall ensure the safety provisions as stipulated in the DGMS Circular No:02, dated. 29.11.2019 while using the Diamond Wire Saw machines in the proposed quarry operation. 7) The PP shall adopt only non-explosive technique (Rock Breaking Compounds) for the fracturing of granite blocks ensuring the eco-friendly mining operation in the proposed quarry. 8) To ensure the conditions of occupational safety, health & welfare status of persons working in the mine, the PP shall annually conduct occupational health survey to determine prevalence of

S. No	EC Conditions
	Noise Induced Hearing Loss (NIHL) due to the operation of Diamond Wire Saw cutting & other HEMMs deployed in the mine and to prepare a plan for hearing conservation programme by involving anyone of the reputed institutes - Regional Occupational Health Centre (Southern) of ICMR-National Institute of Occupational Health, Bengaluru, National Institute of Miners' Health, Nagpur and Anna University, Chennai. 9) The PP shall properly provide all the required welfare amenities near quarry such as Drinking water, Rest Shelter, Canteen, Toilets, etc for the persons to be employed in the proposed quarry before the execution of lease, in accordance with the provisions of the Mines Rules, 1955. 10) For the safety of the persons employed in the quarry, the PP shall carry out the scientific studies to assess the slope stability of the working benches and existing quarry wall when the depth exceeds 30m, 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 Dept of Mining Engg-Anna University Chennai. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation. 11) The PP shall annually carry out the Anna University-Star Rating process for the sustainable mining which will be awarded by the Department of Mining Engineering Anna University Chennai and Rs. 1 lakh shall be paid for carrying out the Star Rating Process for the year of 2025-2026 to the Dept. of Mining Engg., Anna University Chennai before obtaining the CTO from the TNPCB. As a part of EMP, the PP shall annually carry out the Star Rating evaluation of the quarry by depositing Rs. Five lakhs with the Department of Mining Engineering, Anna University, Chennai before executing the lease, for the efforts and initiatives taken for implementation of the Sustainable Development Framework till the month of March of every year for a period of five years and necessarily obtain the Star Rating Certification accordingly. A copy of 'Star Rating Certification' shall be submitted to the SEIAA, IRO/MoEF, TNPCB, AD/Mines-DGM as a part of Environmental Compliance without any deviation. 12) In order to check and confirm the construction of Waste Dumps as stipulated in the Mining Plan duly approved by the AD (Geology & Mines) in accordance with the provisions of MMR 1961 and also to ensure the safety of the persons working in the quarry, the PP shall carry out the scientific studies after obtaining the prior permission from the Director of Mines Safety/Chennai Region, to assess the slope stability of the Waste Dump by determining the angle of safety to design the dump planning, during the 3rd year of the quarrying operations, 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 Dept of Mining Engg - Anna University Chennai. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation. 13) 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.

3. Seac Standard Conditions

S. No	EC Conditions						
3.1	<table border="1"> <thead> <tr> <th>Category</th><th>Conditions</th></tr> </thead> <tbody> <tr> <td>1. General</td><td>1.1. Prior approval shall be secured from the SEIAA for any modification / change in the Project mentioned in the Environmental Clearance (EC).</td></tr> <tr> <td></td><td></td></tr> </tbody> </table>	Category	Conditions	1. General	1.1. Prior approval shall be secured from the SEIAA for any modification / change in the Project mentioned in the Environmental Clearance (EC).		
Category	Conditions						
1. General	1.1. Prior approval shall be secured from the SEIAA for any modification / change in the Project mentioned in the Environmental Clearance (EC).						

S. No	EC Conditions		
			The Environmental Clearance (EC) shall be renewed in accordance with EIA Notification, 2006 vide S.O.2944 (E) dated: 14.09.2016, as amended from time to time.
			The EC does not exempt the Proponent and/or his appointed contractors and operator from securing other government approvals or preclude other agencies/departments from enforcing their rules and regulations.
			CTO from TNPCB shall be obtained and complied with.
			A copy of the EC shall be kept at the Project site at all times. The Project Owner and/or its appointed contractors and operator shall allow access, and provide assistance to the authorised SEIAA officers and engineers in carrying out inspections, incident investigations, taking of pictures, and in obtaining relevant information such as onsite sources of emissions and effluent discharges at any time.
			Any environment-related incidents and complaints shall be reported to SEIAA within twenty-four (24) hours. The incident report shall describe the likely cause, the time of occurrence, and the conditions under which an incident occurred, the extent of impact, and the remedial actions undertaken.
			A Half-Yearly Compliance Report (HYCR), including environmental protection measures implementation and monitoring, and a brief description with photo documentation shall be submitted to SEIAA and IRO, MoEF&CC.
			The EC Holder shall send 'Notice of Opening', to the Director of Mine Safety, Chennai Region, as required under the section 16 of the Mines Act 1952 before commencement of mining operations.
			While transporting the mined material, the ECH shall ensure that there is no over loading of trucks/trippers/tractors. Every load transported should be weighed in an approved weighing station and the details should be maintained by the ECH.
		2.1	Topsoil shall be segregated, stockpiled, and protected from wind and water erosion, or contaminants. The segregated top soil shall not be disturbed by surface operations, such as roads and areas upon which support facilities are to be sited.
		2.2	As per the directions contained in the OM F.No.22-34/2018-IA.III dated 16th January 2020 issued by MoEF & CC, the ECH shall, undertake re-grassing the mining area and any other area which may have been disturbed due to his mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. The compliance of this direction shall be included in the Half Yearly Compliance Report.
		2.3	The ECH must not carry out any activity: · Within 60 m from the Reserve Forest. · Within the notified environmentally sensitive area of notified protected areas. · Within 1 km of protected areas where the environmentally sensitive area has not been notified.
		2.4	The ECH must design, install and maintain adequate erosion and sediment control structures wherever necessary to prevent or minimise erosion of disturbed areas and the sedimentation and/or blockage of any watercourse, waterway, or water body.

S. No	EC Conditions		
		2.5	The ECH shall undertake in a phased manner restoration, reclamation and rehabilitation of lands affected by the quarrying operations and shall complete this work before the conclusion of such operations as per the Environmental Management Plan & the approved Mine Closure Plan.
		2.6	The ECH must not carry out any activity within 300m of an identified historical and archaeological site.
		3.1	Monitoring of drainage water should be carried out at different seasons by an NABL accredited lab and any discharged water into the natural stream should meet CPCB standards.
		3.2	Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB. As a part of Ground Water Management, the ECH shall carry out the scientific studies to assess the existing hydrogeological conditions (water table in the core & buffer zones) and impacts of the quarrying operation on the ground water level present in the core zone , during the 2 nd year of the mining operation, by involving any one of the reputed Research and Academic Institutions. A copy the report shall be submitted to the SEIAA, MoEF&CC, TNPCB, WRD and DMS, Chennai.
		3.3	The ECH shall construct a garland drain of appropriate size, gradient and length around the proposed quarry incorporating garland canal, silt traps, siltation pond and outflow channel connecting to a natural drain prior to the commencement of mining. Garland drain, silt-traps, siltation ponds and outflow channel should be de-silted periodically and geo-tagged photographs of the process should be included in the HYCR.
		3.4	The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity.
		4.1	The ECH must not cause any release of dust that is not in conformity with the National Ambient Air Quality Standards.
		4.2	The following measures along with any other measures shall be implemented by the ECH to control dust pollution. · Installing pollution control equipment (e.g. fitting bag filters or a cyclone to dust generating equipment). · Altering work practices to avoid or minimise the generation of dust. · Scheduling activities during times when they will have least impact. · Spraying water on roads and tracks. · Re-vegetating disturbed areas as soon as possible.
		4.3	The ECH shall ensure that the loaded trucks are covered to avoid the spillage & dust pollution while transportation.
		4.4	The ECH shall use the jack hammer drill machine fitted with the dust extractor for the drilling operations such that the fugitive dust is controlled effectively at the source.
	5. Noise & Vibration	5.1	Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. (i) Workers engaged in operations of HEMM, etc. should be provided with Ear plugs/muffs, (ii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.
		5.2	The ECH must ensure that the ground vibration (peak particle velocity) shall not exceed the threshold limits prescribed by DGMS vide the DGMS

S. No	EC Conditions		
			Circular No. 7, of 1997.
	5.3		The ECH shall monitor the whole-body vibration level of all the machineries deployed and shall undertake adequate measures to reduce whole-body vibration (WBV) exposure to eliminate the adverse occupational health hazards/impacts caused to the operators. The report on the periodic monitoring shall be included in the HYCR.
	5.4		The ECH shall carry out blasting in such a manner that the blast-induced ground vibration level (Peak Particle Velocity) measured in the houses/structures located at a distance of 300 m shall not exceed 2.0 mm/s and no fly rock shall travel beyond 20 m from the site of blasting.
	5.5		Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site.
	5.6		The ECH shall ensure that the blasting operations shall be carried out with a prior notice to the habitations situated around the proposed quarry. The ECH also should post sentries/guards adequately to ensure safety to the public.
	5.7		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 . The plant species of native origin with dense/moderate canopy should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
	5.8		Taller/one-year-old saplings raised in appropriate size of bags (preferably eco-friendly bags) should be planted in proper spacing as per the advice of local forest authorities/botanists/horticulturists with regard to site specific choices.
	5.9		The ECH shall maintain a register of all the trees planted and the survival rate.
	5.10		Adequate water sprinkling arrangements shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
	5.11		If a credible, supported complaint is made that noise or vibration is adversely impacting human noise receptors, then the ECH shall consult with affected stakeholders to develop mitigation strategies to resolve the complaint.
	6. Social & OHS	6.1	The ECH shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.
			The PP shall mark the DGPS reference pillars painted with blue & white colour indicating the safety barrier of 7.5 m to be left under the Rule 13 (1) of MCDR, 1988 within the lease boundary and protective bunds, before obtaining the CTO from the TNPCB.
		6.2	The proponent shall install the 'S3 (or) G2' type of fencing with reflectors all around the boundary of the proposed working quarry with gates for entry/exit before the commencement of the operation as recommended in the DGMS Circular, 11/1959 and shall furnish the photographs showing

S. No	EC Conditions		
			the same before obtaining the CTO from TNPCB.
	6.3		The ECH shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are provided with adequate PPEs before engaged in mining operations.
	6.4		The ECH shall use only the road indicated in the mining plan for transportation purposes. ECH shall monitor the condition of the road at all times and if the roads are damaged, ECH shall approach the District Collector for the maintenance of haulage road/village / Panchayat Road under DMF.
	6.5		During the operation of mine, the ECH shall take adequate safety precautionary measures while the vehicles pass through schools / hospitals.
	6.6		The ECH shall ensure that the blasting operations are carried out by the blaster/Mine Mate/Mine Foreman duly employed by him/her in accordance with the provisions of MMR 1961.
	6.7		The ECH shall register promptly through online in the Shram Suvidha Portal which is the official portal of Ministry of Labour & Employment, Govt of India to obtain Labour Identification Number (LIN) before obtaining the CTO from the TNPCB.
	6.8		The ECH shall annually carry out an Occupational Health Survey (OHS) in accordance with the guidelines & period of examination laid in the DGMS (Tech.) (S&T) Circular No. 01 of 2011 , on OHS of the persons working in mines prone to generate the airborne dust, under Section 9A of Mines Act, 1952 and a copy of the annual compliance certificate shall be submitted to the SEIAA, IRO, MoEF&CC, TNPCB, AD/Mines-DGM and DMS, Chennai.
	6.9		The ECH shall install a 'Bio-toilet' and Rest shelter facility for the persons employed in the mine before obtaining the CTO from the TNPCB.
	7. Financial	7.1	The ECH shall ensure that the funds earmarked for environmental protection measures are kept in a separate bank account and such funds should not be diverted for other purposes. Year-wise expenditure should be included in the HYCR.
		7.2	As per the MoEF&CC Office Memorandum F.No. 22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall adhere to the EMP as committed.
	8. Others	8.1	The ECH shall ensure that the provisions of the MMDR Act, 1957 & Tamil Nadu Minor Mineral Concession Rules 1959 are complied by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure, the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.
		8.2	The ECH shall abide by the production schedule specified in the approved mining plan and if any deviation is observed, it will render the ECH liable for legal action in accordance with Environment and Mining Laws.
		8.3	The PP to erect Display board as Appendix-II
	Abbreviations:		
	ECH	=	Environment Clearance Holder
	HYCR	=	Half Yearly Compliance Report.
	CTO	=	Consent to Operate

S. No	EC Conditions		
	DMF	=	District Mining Fund
	IRO	=	Integrated Regional Office of MoEF&CC
	CPCB	=	Central Pollution Control Board
	WRD	=	Water Resources Department
	DMS	=	Director of Mine Safety
	OHS	=	Occupational Health and Safety
	NABL	=	National Accreditation board for Testing and Calibration Laboratories

4. Special Mitigation Measures For The Quarries Located Within 1 Km From The Reserve Forests

S. No	EC Conditions
4.1	1. Since the R.F is located very close to the proposed quarry site, the PP shall develop Green Belt (Thick Tree plantation in two to three rows) along the boundary of the mine lease area before obtaining the CTO from the TNPCB. 2. The proponent shall construct and maintain proper fencing all around the boundary of the proposed working quarry adjacent to the direction of the location of the Reserved Forest before the commencement of the operation and shall furnish the photographs showing the same before obtaining the CTO from TNPCB. 3. The PP shall take steps so that the overburden, waste rock, rejects and fines generated during the mining operations shall be stored in separate dumps positioned in opposite direction to the location of the reserved forest. 4. The PP shall ensure that such waste/reject dumps shall be properly secured to prevent escape of material there from in harmful quantities which may cause degradation of environment and to prevent causation of floods. 5. The PP shall select the site for dumps on impervious ground to ensure minimum leaching effects due to precipitations. 6. The PP shall take necessary steps that wherever possible, the waste rock, overburden etc. shall be back-filled into the mine excavations with a view to restoring the land to its original use as far as possible. 7. Wherever back-filling of waste rock in the area excavated during mining operations is not feasible, the PP shall take adequate steps in discussion with the concerned DFO to suitably terrace the waste dumps ensuring the stability through vegetation to consolidate the green belt development in the areas adjacent to the reserved forest location. 8. The PP shall carry out the scientific investigations in order to keep the ground and noise vibrations caused by blasting operations and movement of HEMM such as Excavators, Trucks within safe limit. 9. The PP shall not perform secondary breakage involving the drilling & blasting in the quarrying operations and it can be replaced with non-conventional methods such as noise-controlled rock breakers, usage of non-explosive expansive materials/chemicals, Hydraulic Splitting based on the suitable scientific studies carried out by any reputed scientific and academic institutions. 10. The PP shall take adequate steps to control the air pollution due to fines, dust, smoke or gaseous emissions during the quarrying operations within 'Permissible Limits' specified under the environmental laws.

S. No	EC Conditions
	11. The Quarrying and Mining activities shall be restricted in the Eco-sensitive Zone of 60 m from the boundary of the Reserved area and hence the PP shall not even indulge in constructing the haul roads in these areas. 12. No development on existing steep hill slopes or slopes with a high degree of erosion shall be permitted. Hence, the PP shall not carry out the quarrying on steep hill slopes with a gradient of 20° or more or areas with a high degree of erosion on forestland. 13. The PP shall give an affidavit at the time of lease execution that there will be no felling of trees (or) any encroachment will not be made on these Reserved Forest lands and also within the Eco- sensitive Zone of 60 m without the prior permission of the State Government in case of reserve forest land as per the procedures laid down by the State Government. 14. The PP shall not use plastic carry bags within the quarry area. 15. The PP shall ensure that all the haul roads within the quarry lease shall be provided with adequate number of road side drains and these drains shall be kept free from blockage for runoff disposals. This run off from the road side drainage shall relate to the natural drainage system in the area. 16. The PP shall adhere to the provisions of the MoEF had issued Notification No. S.O. 1545 dated 25th June 2009 regulating certain activities in the eco-sensitive zone to conserve and protect the reserved forest area from ecological and environmental point of view.

5. Special Mitigation Measures For The Quarries Located In Close Proximity To The Windmills

S. No	EC Conditions		
5.1	Sl. No	Existing (or) Virgin Quarry	
		Wind Mills located at a distance of 150 m to 300 m	Wind Mills located beyond 300 m Up to 500 m
	1.	Appointment of I/II Class Mines Manager Certificate of Competency under MMR 1961.	Appointment of I/II Class Mines Manager Certificate of Competency under MMR 1961.
	2.	Special precautions are to be taken during blasting within danger zone such as posting guards, etc.	Blast design parameters should be mentioned in mining plan/scheme. and may be reviewed by a competent mining engineer.
	3.	Blast design parameters should be mentioned in mining plan/scheme.	MCPD and total charge should be fixed such that it should not exceed 1.3 kg and 26.50 kg respectively.
	4.	The recommendations of scientific organisation need to be incorporated in the mining plan/scheme before its approval.	Fresh scientific study may be conducted if mine management wants to increase the MCPD and total explosive charge above the quantity of 1.30 kg and 26.50 kg respectively. Continuous monitoring using seismograph should also be done in such cases by the mine management.
	5.	Engagement of blasting in-charge having Diploma/Degree in mining engineering for day-to-day blasting.	Engagement of blasting in-charge having Diploma/Degree in mining engineering for day-to-day blasting.
	6.	Training of the blasting crew on controlled blasting practices before	Training of the blasting crew on controlled blasting practices before engaged in operation.

S. No	EC Conditions	
	engaged in operation.	
7.	Submission of monthly report on blast design pattern and detailed explosive consumption as well as volume of rock excavation to a statutory body viz. DGMS, DMG, PESO or SPCB.	Submission of monthly report on blast design pattern and detailed explosive consumption as well as volume of rock excavation to a statutory body viz. DGMS, DMG, SPCB. Report of recorded ground vibration need to be added in monthly report.
8.	Report of recorded ground vibration need to be added in monthly report which shall be sent to all the statutory body viz. DGMS, DMG, SPCB.	Report of recorded ground vibration need to be added in monthly report which shall be sent to all the statutory body viz. DGMS, DMG, SPCB.
9.	Small diameter emulsion cartridge of 25 mm diameter (125 gm weight per cartridge) shall be used. However, ANFO explosives may also be used as main explosive charge.	Small diameter emulsion cartridge of 25 mm diameter (125 gm weight per cartridge) shall be used. However, ANFO explosives may also be used as main explosive charge.
10.	Electronic (or) Non-electric detonators (Nonel) shall be used in all the blasts for in-hole explosive initiation and surface hole-to-hole firing.	Non-electric detonators (Nonel) shall be used in all the blasts for in-hole explosive initiation and surface hole-to-hole firing.
11.	Max. number of holes in a round: 30.	Max. number of holes in a round: 40 to 60.

6. Seiaa Standard Conditions:

S. No	EC Conditions
6.1	a) EC Compliance: 1. The Environmental Clearance is accorded based on the assurance from the project proponent that there will be full and effective implementation of all the undertakings given in the Application Form, Pre-feasibility Report, mitigation measures as assured in the Environmental Impact Assessment/ Environment Management Plan and the mining features including Progressive Mine Closure Plan as submitted with the application. 2. All the conditions as presented by the proponent in the PPT during SEAC appraisal should be addressed in Full. 3. The proponent shall submit Compliance Reports on the status of compliance of the stipulated EC conditions including results of monitored data. It shall be sent to the respective Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India and also to the Office of State Environment Impact Assessment Authority (SEIAA). 4. Concealing the factual data or submission of false/fabricated data and 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. b) Applicable Regulatory Frameworks: 5. The project proponent shall strictly adhere to the provisions of 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, Biological diversity Rules, 2004 & TN Forest Act, 1882 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

S. No	EC Conditions
	and any other Courts of Law relating to the subject matter. c) Safe mining Practices: 6. The AD/DD, Dept. of Geology & Mining shall ensure operation of the proposed quarry after the submission of slope stability study conducted through the reputed research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories, etc., and ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study. 7. A minimum buffer distance specified as per existing rules and statutory orders shall be maintained from the boundary of the quarry to the nearest dwelling unit or other structures, and from forest boundaries or any other ecologically sensitive and archeologically important areas or the specific distance specified by SEIAA in EC as per the recommendations of SEAC depending on specific local conditions. d) Water Environment– Protection and mitigation measures: 8. The proponent shall ensure that the activity does not disturb the water bodies, neighboring open wells, bore wells and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area nor effect the water quality and water quantity in the water sources. 9. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report. 10. Quality of water discharged from the quarry should be monitored regularly as per the norms of State Pollution Control Board and included in the Compliance Report. 11. Rain Water Harvesting facility should be installed as per the prevailing provisions of TNMBR/TNCDBR, unless otherwise specified. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project. 12. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the compliance reports to SEIAA. At any stage, if it is observed that ground water table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. 13. Garland drains and silt traps are to be provided in the slopes around the core area to channelize storm water. De-silting of Garland canal and silt traps have to be attended on a daily basis. A labour has to be specifically assigned for the purpose. The proponent shall ensure the quality of the discharging storm water as per the General Effluent Discharge Standards of CPCB. e) Air Environment– Protection and mitigation measures: 14. The activity should not result in CO₂ release and temperature rise and add to micro climate alternations. 15. The proponent shall ensure that Monitoring is carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads. f) Soil Environment– Protection and mitigation measures: 16. The proponent shall ensure that the operations neither result in loss of soil biological properties and nutrients nor deplete the indigenous soil seed bank and disturb the mycorrhizal fungi, soil organism, soil community and result in eutrophication of soil and water. Further, the activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil health. 17. Bio remediation using microorganisms should be carried out to restore the soil Environment to enable carbon sequestration. 18. The proponent shall ensure that the mine restoration is done using mycorrhizal VAM, vermin composting, Biofertilizers and the topsoil is protected and used in planting activities, site restoration and establishment of green belt in the area to ensure soil health and biodiversity conservation. 19. The top soil shall be temporarily stored at earmarked place (s) and used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. At critical points, use of geotextile shall be

S. No	EC Conditions
	undertaken for stabilization of the dump. Protective wall or gabions should be made around the dump to prevent erosion / flow of sediments during rains. The entire excavated area shall be backfilled. 20. Activities should not result in invasion of site by exotic and alien plant and animal species and disturb the native biodiversity and soil micro flora and fauna. g) Noise Environment– Protection and mitigation measures: 21. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines. The activity of the proponent should not effect the biological clock of the villages resulting in stress, sleeping disorders affecting health. h) Biodiversity - Protection and mitigation measures: 22. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological Environment and other natural resources due to the mining activities. 23. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around. Also, the activities should not disturb the agro biodiversity, agro farms, green lands and grazing fields of all types. Actions to be taken to promote agroforestry, mixed plants to support biodiversity conservation in the mine restoration effort. 24. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area. i) Climate Change: 25. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change. 26. Operations should not result in GHG releases and extra power consumption leading to Climate Change. 27. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations. 28. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water. 29. Mining activity should be flood proof with designs and the drainage, pumping techniques shall ensure climate-proofing and socio-economic wellbeing in the area and vicinity. j) Reserve Forests & Protected Areas: 30. The activities should provide nature-based support and solutions for forest protection and wildlife conservation. 31. The project activities should neither result in forest fires, encroachments nor create forest fragmentation and disruption of forest corridors and alter the geodiversity and geological heritage of the area. 32. There should be no disturbance to the freshwater flow from the forest impacting the water table and wetlands. 33. The project proponent should support all activities of the forest department in creating awareness to local communities on forest conservation. 34. The activities should not result in temperature rise due to increased fossil fuels usage disrupting the behaviour of wildlife and flora. 35. The activities should support and recognise the rights and roles of indigenous people and local

S. No	EC Conditions
	communities and also support sustainable development. 36. The project activities should support the use of renewables for carbon capture and carbon storage in the project site and forest surrounds. 37. The project activities should not result in changes in forest structure, habitats and genetic diversity within forests. k) Green Belt Development: 38. The proponent shall ensure that in the green belt development more indigenous trees species as suggested in Appendix of SEAC Minutes are planted and that the area is restored and rehabilitated with native trees . l) Workers and their protection: 39. The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time to quarrying /Mining operations. The workers on the site should be provided with on-site accommodation or facilities at a suitable boarding place, protective equipment such as ear muffs, helmet, etc. 40. The proponent has to provide insurance protection to the workers and the working hours and wages shall be implemented/enforced as per the Mines Act, 1952 in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease. m) Transportation: 41. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a bypass road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the Environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centres. 42. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt- conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions. n) Storage of wastes 43. The project proponent shall store/dump the waste generated within the earmarked area of the project site for mine closure as per the approved mining plan. o) CER/EMP: 44. The CER should be fully Implemented and fact reflected in the Half-yearly compliance report. 45. The EMP shall also be implemented in consultation with local self-government institutions & Govt. departments as indicated in SEAC meeting. p) Directions for Reclamation of mine sites: 46. The mining closure plan should strictly adhere to appropriate soil rehabilitation measures to ensure ecological stability of the area. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored

S. No	EC Conditions
	to conserve the ecosystems and ensure flow of goods and services. 47. A crucial factor for success of reclamation site is to select sustainable species to enable develop a self-sustaining eco system. Species selected should easily establish, grow rapidly, and possess good crown and preferably be native species. Species to be planted in the boundary of project site should be un palatable for cattle's/ goats and should have proven capacity to add leaf-litter to soil and decompose. The species planted should be adaptable to the site conditions. Should be preferably pioneer species, deciduous in nature to allow maximum leaf-litter, have deep root system, fix atmospheric nitrogen and improve soil productivity. Species selected should have the ability to tolerate altered pit and toxicity of and site. They should be capable of meeting requirement of local people in regard to fuel fodder and should be able to attract bird, bees and butterflies. The species should be planted in mixed association. 48. Top soil with a mix of beneficial microbes (Bacteria/Fungi) to be used for reclamation of mine spoils. AM Fungi (Arbuscular mycorrhizal fungi), plant growth promoting Rhizo Bacteria and nitrogen fixing bacteria to be utilized. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site. Top soil is most important for successful rehabilitation of mined sites. Topsoil contains majority of seeds and plant propagation, soil microorganism, Organic matter and plant nutrients. Wherever possible the topsoil should be immediately used in the area of the for land form reconstruction, to pre mining conditions. 49. Over burdens may be analyzed and tested for soil characteristics and used in the site for revegetation. Wherever possible seeds, rhizome, bulbs, etc., of pioneering spices should be collected, preserved and used in restoring the site. Native grasses seeds may be used as colonizers and soil binders, to prevent erosion and allow diverse self- sustaining plant communities to establish. Grasses may offer superior tolerance to drought, and climatic stresses. 50. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoil should have necessary physical, chemicals, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread. Alkaline soils, acidic soils, Saline soils should be suitably treated/amended using green manure, mulches, farmyard manure to increase organic carbon. The efforts should be taken to landscape and use the land post mining. The EMP and mine closure plan should provide adequate budget for re-establishing the site to pre-mining conditions. Effective steps should be taken for utilization of over burden. Mine waste to be used for backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. Efforts should to taken to aesthetically improve the mine site. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

Standard EC Conditions for (Mining of minerals)

1. Statutory Compliance

S. No	EC Conditions
1.1	The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.

S. No	EC Conditions
1.2	The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area."
1.3	The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.
1.4	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
1.5	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
1.6	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
1.7	State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
1.8	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
1.9	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.10	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
1.11	This Environmental Clearance (EC) is subject to orders/ judgment of Honble Supreme Court of India, Honble High Court, Honble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
1.12	The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred. PP needs to apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.
1.13	The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.

S. No	EC Conditions
1.14	The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
1.15	The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

2. Air Quality Monitoring And Preservation

S. No	EC Conditions
2.1	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
2.2	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986. 9) The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g., PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120 each). covering upwind and downwind directions.
2.3	The project proponent use leak proof trucks/dumpers carrying mineral and cover them with tarpaulin.
2.4	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

3. Water Quality Monitoring And Preservation

S. No	EC Conditions
3.1	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

S. No	EC Conditions
3.2	The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.
3.3	The project proponent shall practice rainwater harvesting to maximum possible extent.
3.4	In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from SGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from SGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
3.5	The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease including upstream and downstream. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Regional Director, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
3.6	The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.
3.7	Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry and State Groundwater Department / State Pollution Control Board.
3.8	Adhere to Zero Liquid Discharge
3.9	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.
3.10	Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
3.11	Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total

S. No	EC Conditions
	Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
3.12	The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

4. Noise And Vibration Monitoring And Prevention

S. No	EC Conditions
4.1	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
4.2	The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.
4.3	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

5. Noise Monitoring And Prevention

S. No	EC Conditions
5.1	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
5.2	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

6. Energy Conservation Measures

S. No	EC Conditions
6.1	Provide LED lights in their offices and residential areas.
6.2	Provide solar power generation on roof tops of buildings, for solar light system for all common

S. No	EC Conditions
	areas, street lights, parking around project area and maintain the same regularly;

7. Mining Plan

S. No	EC Conditions
7.1	The Project Proponent shall adhere to approved mining plan, inter alia, including, total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B& dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life; etc.).
7.2	The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

8. Waste Management

S. No	EC Conditions
8.1	Kitchen waste shall be composted or converted to biogas for further use.(to be decided on case to case basis depending on type and size of plant)
8.2	The waste oil, grease and other hazardous waste shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.

9. Land Reclamation

S. No	EC Conditions
9.1	The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
9.2	The Overburden (O.B.), waste and topsoil generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB / waste dumps / topsoil dump like height, width and angle of slope shall be governed as per the approved Mining Plan and the guidelines/circulars issued by D.G.M.S. The topsoil shall be used for land reclamation and plantation.

S. No	EC Conditions
9.3	Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
9.4	Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

10. Green Belt And Emp

S. No	EC Conditions
10.1	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant
10.2	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

11. Transportation

S. No	EC Conditions
11.1	No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers. [If applicable in case of road transport].
11.2	The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while

S. No	EC Conditions
	transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

12. Green Belt

S. No	EC Conditions
12.1	The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

13. Public Hearing And Human Health Issues

S. No	EC Conditions
13.1	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
13.2	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
13.3	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
13.4	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
13.5	Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated in order to avoid contamination of underground water.

14. Corporate Environment Responsibility

S. No	EC Conditions
14.1	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
14.2	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have

S. No	EC Conditions
	proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest I wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
14.3	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
14.4	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
14.5	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

15. Miscellaneous

S. No	EC Conditions
15.1	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
15.2	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
15.3	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
15.4	44) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
15.5	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
15.6	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

S. No	EC Conditions
15.7	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC)/SEIAA-TN.
15.8	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponents website permanently.
15.9	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
15.10	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
15.11	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
15.12	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 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.
15.13	The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
15.14	The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
15.15	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
15.16	The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
15.17	In pursuant to Ministrys O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Honble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

S. No	EC Conditions
15.18	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
15.19	Concealing factual data failure to comply with any or submission of false/ fabricated data and of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
15.20	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 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.
15.21	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
15.22	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

16. Corporate Environment Responsibility (Cer)

S. No	EC Conditions
16.1	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

AFFIDAVIT FURNISHED BY THE PROPONENT

I, **Thiru. E. Dhanapal, No. 11, Old No. D-364, Ukkara Kali Amman Kovil Street, Anna Nagar, Thennur, Trichy District – 620 017** solemnly declare and sincerely affirm that:

We have applied for getting Environment Clearance to SEIAA, Tamil Nadu State for quarrying of **Multi Colour Granite Quarry project over an Extent of 4.89.0Ha of Patta Land in S.F. No. 74/3A1A, 74/3A1B, 74/3A2, 74/3B, 75/1A, 75/2A1, 75/2A2, 75/2B, 75/3B, 75/3D & 74/2, Veeriyapalayam Village, Krishnarayapuram Taluk, Karur District, Tamil Nadu State.**

1. I swear to state and confirm that within 10km area of the quarry site, I have applied for environment clearance, none of the following is situated:

- a. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974.
- b. Eco-Sensitive areas as notified.
- c. Interstate Boundary.

2. I will spend the amount of Rs. 5 Lakhs towards Corporate Environment Responsibility and the details are as follows:

CER:

Panchayat Union Primary School, Pudhupatti.

Activities as follows:

Sl. No.	Description	Cost breakup
1	Renovation of Existing Toilets and maintenance	Rs.5,00,000/-
2	Providing Environmental related books to school library	
3	Carrying out plantation in the school ground around 100Nos	
4	Renovation of Classrooms and Painting of Classrooms	
	Total	Rs.5,00,000/-

3. The total area of following quarries located within 500m radius from the periphery of my quarry site details as shown below:

1. Existing Quarries:

S. No.	Name and Address / permit Holder	S.F.Nos	Extent (in Hecs)	Lease Period	Remarks
1.	Thiru.E.Dhanapal, S/o.Errachi Rddiyar, Old No.D/364 New No.D/11, Ukkara Kalamman Street, Anna Nagar, Thennur, Trichy District.	74/2 74/3A1A 74/3A1B 74/3A2 74/3B 75/2A1 75/1A 75/2A2 75/2B 75/3B 75/3D	0.89.0 0.08.5 0.40.5 0.20.0 0.20.0 0.61.0 0.27.0 0.75.5 0.40.0 0.26.5 0.81.0 4.89.0	21.02.2014 to 20.02.2034	-

2. Proposed Area:

S. No.	Name and Address / permit Holder	S.F.Nos	Extent (in Hecs)	Lease Period	Remarks
1.	Thiru.D.Logesh, S/o.E.Dhanapal, Old No.D/364, New No.11, Ukkira Kalaianman Koil Street, Anna Nagar, Thennur Trichy District.	75/1B 75/3A 76/1 78/1 78/2	0.38.00 0.02.00 1.16.00 0.16.00 1.21.00 2.93.00	-	-
2.	M/s.Vinayaga Enterprises, 20/615, Vethasalapuram, Thogamalai, Kulithalai Taluk, Karur District.	72/2A 72/3 72/4A 72/4B	0.20.0 0.81.5 0.81.0 2.08.0 3.90.5	-	-

3. Lease Expired and Abandoned Quarries:

S. No.	Name and Address / permit Holder	S.F.Nos	Extent (in Hecs)	Lease Period	Remarks
-Nil-					

4. There will not be hindrance or disturbance to the people living during quarrying activities and transportation of the mineral.

5. There is no approved habitation within 300m radius from the periphery of my quarry.
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 laborers working in my quarry site.
8. The existing road from the main road to quarry is in good condition and the same is being maintained and utilized for Transportation of Rough stone.
9. We will not engage any child labor in my quarry site and I aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided to all the laborers working in my quarry.
11. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.

REVISED EMP BUDGET

Mitigation Measure	Provision for Implementation	Capital	Recurring
Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	48900	48900
Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	0
Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 6 Units	150000	15000
No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
Gravel carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000

Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	10000	500
Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	97800
Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	30675
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

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	50000
Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) – 40 Employees	160000	40000
Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	40000
First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	9780
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 on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	244500	10000
Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1st Class / 2nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR, 1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
To ensure the mining operation within the lease boundary	Installation of DGPS Pillar @ 1,500/ Pillar (19 Corners)	22500	5000
Monitoring of Granite Quarrying Operation by Anna University	Star Rating @ Rs. 1,00,000/- per Year will be deposited in the First Year	500000	0
1. Progressive Closure Activity - Surface Runoff managent	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	48900	5000

2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	978000	10000
3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 2450 Trees - (1200 Inside Lease Area & 1250 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	240000	36000
	Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	375000	37500
4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 10% of the proposed closure cost will be spent during the final mine closure stage - Last Year	#140000	0
5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	#8819395	0
As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
TOTAL		4237800	1338155

EMP BUDGET SUMMARY BREAKUP YEAR WISE

Year Wise Break Up	
2024-25	₹ 55,75,955/-
2025-26	₹ 14,05,063/-
2026-27	₹ 14,75,316/-
2027-28	₹ 15,49,081/-
2028-29	₹ 16,26,536/-
2029-30	₹ 38,26,762/-
2030-31	₹ 18,99,200/-
2031-32	₹ 19,94,160/-
2032-33	₹ 20,93,868/-
2033-34	₹ 23,38,562/-
Total	238 LAKHS

I ensure to do all the social and Environment commitment as mentioned in the scheme of mining 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 Deputy Director, Department of Geology and Mining, Karur District in his letter Roc.No.231/Mines/2013 Dated: 22.09.2020 has stated that the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

1. Existing Quarries:

S. No.	Name and Address / permit Holder	S.F.Nos	Extent (in Hecs)	Lease Period	Remarks
1.	Thiru.E.Dhanapal,	74/2	0.89.0	21.02.2014 to 20.02.2034	-
	S/o.Errachi Rddiyar,	74/3A1A	0.08.5		
	Old No.D/364 New	74/3A1B	0.40.5		
	No.D/11, Ukkara	74/3A2	0.20.0		
	Kaliamman Street,	74/3B	0.20.0		
	Anna Nagar, Thennur,	75/2A1	0.61.0		
	Trichy District.	75/1A	0.27.0		

		75/2A2	0.75.5		
		75/2B	0.40.0		
		75/3B	0.26.5		
		75/3D	0.81.0		
			4.89.0		

2. Proposed Area:

S. No.	Name and Address / permit Holder	S.F.Nos	Extent (in Hecs)	Lease Period	Remarks
1.	Thiru.D.Logesh, S/o.E.Dhanapal, Old No.D/364, New No.11, Ukkira Kalaianman Koil Street, Anna Nagar, Thennur Trichy District.	75/1B 75/3A 76/1 78/1 78/2	0.38.00 0.02.00 1.16.00 0.16.00 1.21.00 2.93.00	-	-
2.	M/s.Vinayaga Enterprises, 20/615, Vethasalapuram, Thogamalai, Kulithalai Taluk, Karur District.	72/2A 72/3 72/4A 72/4B	0.20.0 0.81.5 0.81.0 2.08.0 3.90.5	-	-

3. Lease Expired and Abandoned Quarries:

S. No.	Name and Address / permit Holder	S.F.Nos	Extent (in Hecs)	Lease Period	Remarks
-Nil-					

STANDARD CONDITIONS

Part-A: Conditions to be Complied before commencing mining operations: -

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

III. Environmental Clearance may also be seen on the website of the SEIAA.

IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.

2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. **A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.**
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.

14. 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.
15. 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.
16. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
17. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
18. 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.
19. 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.
20. 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
21. 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.
22. 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.

23. 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.
24. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
25. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
26. 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.
27. 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.
28. 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.
29. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
30. 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.
31. 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.

32. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
33. 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.
34. 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.
35. 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.
36. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF&CC, GOI.
37. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF&CC, GOI.
38. Bunds to be provided at the boundary of the project site.
39. 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.
40. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
41. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
42. The Project Proponent shall provide solar lighting system to the nearby villages.
43. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
44. Safety equipments to be provided to all the employees.
45. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
46. 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.

47. 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.
48. 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.
49. 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.
50. 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.
51. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
52. 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.
53. 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.
54. 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.
55. All the commitment made by the project proponent in the proposal shall be strictly followed.
56. 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.
57. All required sanitary and hygienic measures should be in place before starting construction activities and they have to be maintained throughout the construction phase.
58. The company shall stress upon the preventive aspects of occupational health.
59. A separate environment and safety management cell with qualified staff shall be set up before commissioning of construction activities and shall be retained throughout the lifetime of the industry, for implementation of the stipulated environmental safeguards.

60. A scientific site/ ecological rehabilitation and restoration plan on long term basis should be drawn to carryout restoration with native species and Bio diversity.
61. The Green/Blue plan should guide the restoration of the site. The rehabilitation/restoration plan should be submitted to SEIAA-TN within one month. If applicable.
62. The existing water bodies should not be disturbed to ensure sustainable environment for aquatic life forms.
63. The proponent should completely implement all environmental pollution control measures as detailed in the EIA report and in the additional report.
64. Avenue plantation wherever needed has to be carried out along the route for dust suppression.
65. The green belt developed for the prevention of dust pollution should not form a part of the larger green belt development envisaged in the EIA report.
66. Regular monitoring and check up for pulmonary and carcinogenic diseases to be carried out regularly, not only for the workers involved in the mines but also to the people in the villages adjoining the mines. Interaction with the Primary Health Centre & district medical officer should be on regular basis to monitor the incidence of the diseases if any and to provide suitable medical facility for the patients.
67. Monitoring of well water levels and water quality of the wells in the locations furnished in the EIA report shall be done during pre-monsoon and post monsoon period and results submitted to the Regional Office of MoEF, Chennai and SEIAA.
68. Monitoring of water quality and air quality in and around the project site in the selected monitoring points as mentioned in the EIA report shall be continued regularly involving Academic Institutions.
69. Hydro geological study including infiltration test shall be conducted by any reputed agency to estimate leachate quantity.
70. Regular medical check-up for mine workers and nearby residents around the project site involving community medical centre/NIMH shall be conducted.
71. As per norms, the health study should be conducted through competent/approved health organization and report submitted for one year.
72. The effective safe guard measures shall be provided to control particulate dust level in critical areas, transfer points and haul road within the mine area.
73. NOC from the State GWA for drawing ground water shall be obtained, if ground water table is intersected.

74. Green belt shall be provided as per norms of MoEF&CC, GOI, in consultation with local DFO.
75. All the recommendations made in the EIA report of the project shall be effectively implemented.
76. A booklet containing the Dos and Don'ts shall be prepared in vernacular languages for the use of the mine engineers/ managers and the workers to ensure that all necessary environmental, safety and health measures are undertaken.
77. All the environmental protection measures and safeguards as recommended in the EIA report shall be complied with.
78. Hydro geological study of the area shall be reviewed annually and report submitted to the Authority. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the operation of the Mining activity.
79. A separate Environmental Management Cell equipped with full fledged laboratory facilities to carry out the various Environmental Management and Monitoring functions shall be set up under the control of a Senior Executive.
80. The project proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF at Chennai, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; RSPM, SO₂, NO_x or critical sector parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

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.
 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.
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 any stage, the Environmental Clearance issued to the project will be deemed to be revoked/cancelled.

Signature Not Verified

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

Date: 11/03/2025 ☐

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ1 -Core Zone-1
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9527,9553,9732,9769,10228,10264,10503,10519,10881,10925,11238,11265,11591,11645,12148,12236,12658,12715,13190,13233,13610,13688,14205,14275,14490,14549.		
Location Coordinates	10°53'12.01"N 78°18'36.71"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	7:15-7:15	44.1	25.4	5.0	19.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	7:30-7:30	45.1	22.4	4.5	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	7:15-7:15	42.7	24.9	5.2	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	7:30-7:30	42.2	22.0	5.8	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	7:20-7:20	41.2	20.4	5.5	19.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	7:30-7:30	45.8	23.7	BDL(DL:4.0)	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	7:15-7:15	42.2	22.0	5.1	22.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	7:25-7:25	42.8	20.8	5.0	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	7:15-7:15	42.4	21.6	4.2	20.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	7:30-7:30	43.8	22.5	4.6	21.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	7:15-7:15	42.3	20.4	5.8	19.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	7:30-7:30	45.0	24.5	4.9	22.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	7:05-7:05	44.3	21.6	5.5	19.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	7:15-7:15	43.1	21.6	5.8	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	7:15-7:15	43.2	21.6	4.6	20.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	7:25-7:25	41.8	21.2	4.4	20.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	7:15-7:15	42.4	20.8	5.7	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	7:25-7:25	45.3	23.7	5.5	21.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	7:05-7:05	42.1	22.0	4.1	21.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	7:15-7:15	45.9	25.4	5.5	22.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	7:30-7:30	44.4	22.5	5.0	19.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	7:40-7:40	42.6	21.6	7.4	21.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	7:20-7:20	45.8	24.5	6.3	20.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	7:30-7:30	42.2	21.2	5.7	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	7:30-7:30	44.6	24.5	4.9	22.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	7:40-7:40	42.8	23.3	5.5	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kalliammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ1 -Core Zone-1
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9527,9553,9732,9769,10228,10264,10503,10519,10881,10925,11238,11265,11591,11645,12148,12236,12658,12715,13190,13233,13610,13688,14205,14275,14490,14549.		
Location Coordinates	10°53'12.01"N 78°18'36.71"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	7:20-7:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	7:25-7:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	7:05-7:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	7:25-7:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	7:25-7:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	7:05-7:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	7:15-7:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	7:40-7:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	7:20-7:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	7:40-7:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ ² Standard		<20	<6.0	<5.0	<1.0	<1.0



Verified by 
L. SUDHAPRIYA
Technical Manager

*****End of Report*****
Page 2 of 2

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 2 - Core Zone-2
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9528,9554,9733,9770,10229,10265,10504,10520,10882,10926,11239,11266,11592,11646,12149,12237,12659,12716,13191,13234,13611,13689,14206,14276,14491,14550.		
Location Coordinates	10°53'28.44"N 78°18'40.71"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	7:45-7:45	43.3	20.8	4.6	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	7:50-7:50	41.7	22.9	5.8	20.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	7:45-7:45	45.3	25.8	4.9	23.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	7:50-7:50	42.8	21.2	6.0	19.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	7:50-7:50	43.7	21.6	5.7	18.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	8:00-8:00	45.2	24.5	4.4	22.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	7:30-7:30	41.8	20.8	5.3	19.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	7:50-7:50	43.3	22.0	5.5	21.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	7:45-7:45	41.5	20.4	4.8	19.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	7:50-7:50	45.2	23.3	5.9	22.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	7:45-7:45	43.5	22.9	5.5	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	7:50-7:50	47.2	23.3	5.9	22.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	7:35-7:35	40.9	19.1	4.6	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	7:45-7:45	44.3	23.3	4.9	20.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	7:45-7:45	44.5	23.3	6.3	22.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	7:55-7:55	44.9	23.7	6.0	20.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	7:45-7:45	41.8	20.4	5.8	20.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	7:55-7:55	41.6	21.2	5.6	20.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	7:35-7:35	46.2	24.5	5.9	23.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	7:45-7:45	43.2	23.7	5.3	23.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	8:00-8:00	43.9	22.0	6.4	20.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	8:05-8:05	44.0	22.5	5.9	21.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	7:50-7:50	42.9	21.2	5.9	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	8:00-8:00	43.3	22.5	5.0	21.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	8:00-8:00	42.9	22.9	5.4	20.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	8:05-8:05	45.5	24.9	5.0	22.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

[Signature]

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kalammani Koil Street , Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area – 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veerampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 2 – Core Zone-2
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9528,9554,9733,9770,10229,10265,10504,10520,10882,10926,11239,11266,11592, 11646,12149,12237,12659,12716,13191,13234,13611,13689,14206,14276,14491,14550.		
Location Coordinates	10°53'28.44"N 78°18'40.71"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	7:30-7:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	7:35-7:35	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	7:55-7:55	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	7:55-7:55	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	7:35-7:35	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	7:45-7:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	8:05-8:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	8:05-8:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0



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*****End of Report*****
Page 2 of 2

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kalliammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 3 - Near Habitation
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9529,9555,9734,9771,10230,10266,10505,10521,10883,10927,11240,11267,11593,11647,12150,12238,12660,12717,13192,13235,13612,13690,14207,14277,14492,14551.		
Location Coordinates	10°52'59.75"N 78°18'22.59"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	8:15-8:15	45.7	24.5	4.4	21.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	8:25-8:25	43.9	24.1	5.3	21.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	8:15-8:15	44.1	24.1	5.3	23.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	8:25-8:25	45.1	23.3	5.3	19.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	8:20-8:20	41.9	19.9	5.1	18.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	8:30-8:30	43.8	22.5	4.5	21.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	7:50-7:50	45.4	23.3	5.8	22.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	8:00-8:00	42.5	21.2	6.0	20.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	8:15-8:15	43.5	22.0	5.3	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	8:25-8:25	42.7	21.6	5.2	21.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	8:15-8:15	44.6	23.3	5.5	22.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	8:25-8:25	43.6	21.6	6.4	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	8:05-8:05	42.1	21.2	5.8	20.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	8:20-8:20	46.2	24.1	5.1	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	8:20-8:20	46.1	24.5	5.7	22.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	8:30-8:30	43.2	22.0	6.2	21.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	8:20-8:20	43.7	22.0	6.9	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	8:30-8:30	43.6	22.9	6.6	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	8:00-8:00	43.6	23.7	6.1	22.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	8:10-8:10	44.3	22.5	4.9	21.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	8:30-8:30	42.4	21.2	4.6	21.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	8:40-8:40	42.9	21.2	5.2	20.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	8:20-8:20	46.4	24.1	4.5	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	8:30-8:30	44.5	23.3	5.1	22.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	8:30-8:30	41.7	21.6	5.7	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	8:40-8:40	43.8	23.7	6.5	22.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.





Committed to Precision

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GLOBAL LAB AND CONSULTANCY SERVICES LLP

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SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 3 - Near Habitation
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9529,9555,9734,9771,10230,10266,10505,10521,10883,10927,11240,11267,11593, 11647,12150,12238,12660,12717,13192,13235,13612,13690,14207,14277,14492,14551.		
Location Coordinates	10°52'59.75"N 78°18'22.59"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	8:15-8:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	8:25-8:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	8:15-8:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	8:25-8:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	8:20-8:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	7:50-7:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	8:15-8:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	8:25-8:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	8:15-8:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	8:25-8:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	8:05-8:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	8:20-8:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	8:20-8:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	8:20-8:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	8:10-8:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	8:40-8:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	8:20-8:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	8:40-8:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0



Verified by

L. SUDHAPRIYA
Technical Manager*****End of Report*****
Page 2 of 2

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kalliammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 4 - Devasingampatti (School)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9530,9556,9735,9772,10231,10267,10506,10522,10884,10928,11241,11268,11594,11648,12151,12239,12661,12718,13193,13236,13613,13691,14208,14278,14493,14552.		
Location Coordinates	10°51'23.38"N 78°20'25.82"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	8:45-8:45	41.9	22.0	4.7	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	9:00-9:00	42.2	21.2	6.3	20.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	8:45-8:45	46.3	26.6	5.8	24.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	9:00-9:00	43.9	20.8	6.1	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	8:50-8:50	44.6	24.1	5.2	22.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	9:00-9:00	41.7	21.2	4.9	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	8:00-8:00	43.9	22.5	6.1	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	8:15-8:15	44.9	22.5	5.1	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	8:45-8:45	44.7	19.9	4.8	19.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	9:00-9:00	43.9	21.2	4.3	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	8:45-8:45	43.9	23.7	6.2	23.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	9:00-9:00	46.5	24.1	5.0	21.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	8:35-8:35	43.9	22.5	6.0	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	9:00-9:00	40.7	19.5	5.6	19.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	9:00-9:00	43.8	22.5	8.2	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	9:10-9:10	40.9	19.9	BDL(DL:4.0)	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	9:00-9:00	44.4	23.3	5.6	22.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	9:10-9:10	46.2	24.1	5.9	22.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	8:30-8:30	41.6	21.2	5.9	21.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	8:40-8:40	42.5	21.2	5.6	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	9:00-9:00	43.1	23.3	5.4	21.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	9:10-9:10	40.7	19.1	6.5	18.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	8:50-8:50	42.2	19.5	6.3	21.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	9:00-9:00	45.1	24.5	5.7	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	9:00-9:00	46.6	25.8	5.3	22.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	9:10-9:10	45.0	25.8	5.7	23.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veerampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 4 - Devasingampatti(School)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9530,9556,9735,9772,10231,10267,10506,10522,10884,10928,11241,11268,11594,11648,12151,12239,12661,12718,13193,13236,13613,13691,14208,14278,14493,14552.		
Location Coordinates	10°51'23.38"N 78°20'25.82"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	8:45-8:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	8:45-8:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	8:50-8:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	8:00-8:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	8:15-8:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	8:45-8:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	8:45-8:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	8:35-8:35	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	9:10-9:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	9:10-9:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	8:40-8:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	9:10-9:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	8:50-8:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	9:10-9:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0



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

Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 5 - Cholapuram (Residential)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9531,9557,9736,9773,10232,10268,10507,10523,10885,10929,11242,11269,11595,11649,12152,12240,12662,12719,13194,13237,13614,13692,14209,14279,14494,14553.		
Location Coordinates	10°55'11.79"N 78°17'7.82"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	9:15-9:15	44.3	22.5	4.3	18.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	9:25-9:25	44.6	23.3	7.1	20.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	9:15-9:15	42.3	21.2	4.4	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	9:25-9:25	42.1	21.2	5.6	20.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	9:20-9:20	39.8	19.5	5.1	19.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	9:30-9:30	44.6	24.1	5.7	23.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	8:30-8:30	43.6	21.2	5.5	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	8:40-8:40	43.4	21.6	5.4	20.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	9:15-9:15	39.9	18.7	4.7	16.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	9:25-9:25	44.4	22.5	4.7	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	9:15-9:15	44.7	22.0	5.3	21.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	9:25-9:25	43.0	22.5	5.9	21.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	9:05-9:05	45.2	22.9	5.4	20.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	9:30-9:30	42.3	21.6	5.4	20.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	9:30-9:30	44.7	21.6	4.4	20.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	9:40-9:40	45.4	24.5	6.2	22.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	9:30-9:30	43.4	21.6	6.7	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	9:40-9:40	40.8	21.2	4.9	21.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	9:00-9:00	42.7	23.3	4.8	23.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	9:10-9:10	42.6	20.8	5.9	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	9:30-9:30	42.9	22.5	5.7	21.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	9:40-9:40	44.3	23.7	BDL(DL:4.0)	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	9:20-9:20	45.3	24.5	5.0	19.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	9:30-9:30	42.9	21.6	5.6	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	9:30-9:30	42.6	21.2	4.8	20.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	9:40-9:40	43.8	20.8	6.2	21.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 5 -Cholapuram (Residential)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9531,9557,9736,9773,10232,10268,10507,10523,10885,10929,11242,11269,11595,11649,12152,12240,12662,12719,13194,13237,13614,13692,14209,14279,14494,14553.		
Location Coordinates	10°55'11.79"N 78°17'7.82"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	9:15-9:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	9:25-9:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	9:15-9:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	9:25-9:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	9:20-9:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	8:30-8:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	8:40-8:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	9:15-9:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	9:25-9:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	9:15-9:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	9:25-9:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	9:05-9:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	9:10-9:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	9:20-9:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0



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

Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 6 - Palapatti (Residential)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9532,9558,9737,9774,10233,10269,10508,10524,10886,10930,11243,11270,11596,11650,12153,12241,12663,12720,13195,13238,13615,13693,14210,14280,14495,14554.		
Location Coordinates	10°54'14.48"N 78°20'44.50"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	9:40-9:40	42.7	24.9	4.4	22.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	9:50-9:50	42.2	20.4	5.5	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	9:40-9:40	46.8	24.1	5.6	20.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	9:50-9:50	44.9	25.4	5.7	20.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	9:45-9:45	43.5	22.0	4.6	20.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	9:55-9:55	41.1	21.2	5.9	19.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	9:00-9:00	44.5	22.9	5.8	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	9:10-9:10	42.0	19.9	4.9	20.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	9:40-9:40	42.4	20.4	5.6	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	9:50-9:50	46.2	24.1	5.6	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	9:40-9:40	45.6	24.1	6.5	23.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	9:50-9:50	44.3	21.6	4.7	20.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	9:35-9:35	43.1	21.6	5.2	20.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	10:00-10:00	44.5	23.3	5.4	21.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	10:00-10:00	45.6	24.9	5.8	24.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	10:10-10:10	46.5	25.8	7.3	22.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	10:00-10:00	42.1	22.9	4.6	21.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	10:10-10:10	43.3	22.5	6.5	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	9:25-9:25	43.6	23.7	5.5	22.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	9:35-9:35	44.1	24.5	5.1	23.5	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	10:10-10:10	45.2	24.5	4.9	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	10:15-10:15	43.4	22.9	5.2	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	9:45-9:45	42.9	22.9	5.1	22.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	9:55-9:55	43.7	23.3	4.8	21.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	10:00-10:00	43.3	22.0	4.5	20.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	10:15-10:15	44.8	22.0	6.3	21.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.





Committed to Precision

LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP

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SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street , Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area – 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 6 – Palapatti (Residential)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9532,9558,9737,9774,10233,10269,10508,10524,10886,10930,11243,11270,11596,11650,12153,12241,12663,12720,13195,13238,13615,13693,14210,14280,14495,14554.		
Location Coordinates	10°54'14.48"N 78°20'44.50"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	9:50-9:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	9:50-9:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	9:45-9:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	9:55-9:55	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	9:00-9:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	9:10-9:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	9:50-9:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	9:50-9:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	9:35-9:35	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	10:00-10:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	10:00-10:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	10:10-10:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	10:00-10:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	10:10-10:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	9:25-9:25	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	9:35-9:35	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	10:10-10:10	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	10:15-10:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	9:45-9:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	9:55-9:55	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	10:00-10:00	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	10:15-10:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



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

Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kalliammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veerampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 7 -Pappayampatti(School)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9533,9559,9738,9775,10234,10270,10509,10525,10887,10931,11244,11271,11597,11651,12154,12242,12664,12721,13196,13239,13616,13694,14211,14281,14496,14555.		
Location Coordinates	10°51'48.10"N 78°16'19.43"E		
Report Date	08.01.2026		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
29.09.2025	10:15-10:15	44.6	21.6	4.8	19.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
30.09.2025	10:30-10:30	43.4	21.2	5.0	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
06.10.2025	10:15-10:15	43.9	24.1	5.2	20.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
07.10.2025	10:30-10:30	43.7	21.6	5.4	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
13.10.2025	10:20-10:20	45.1	24.5	4.9	23.1	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
14.10.2025	10:30-10:30	43.6	22.5	7.1	21.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
20.10.2025	9:30-9:30	44.8	21.6	5.5	19.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
21.10.2025	9:40-9:40	44.1	22.9	4.2	20.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
27.10.2025	10:15-10:15	40.7	21.2	5.5	19.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
28.10.2025	10:30-10:30	43.0	20.4	7.1	19.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
03.11.2025	10:15-10:15	44.1	22.5	5.3	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
04.11.2025	10:30-10:30	44.0	24.1	5.7	23.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
10.11.2025	10:05-10:05	44.4	23.3	5.2	20.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
11.11.2025	10:30-10:30	47.3	24.5	6.1	22.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
17.11.2025	10:30-10:30	43.2	23.7	5.8	22.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
18.11.2025	10:40-10:40	46.1	24.1	7.6	22.7	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
24.11.2025	10:30-10:30	44.3	23.3	5.9	21.4	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
25.11.2025	10:40-10:40	43.9	24.1	5.8	22.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
01.12.2025	9:50-9:50	44.3	22.5	6.5	21.3	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.12.2025	10:05-10:05	46.3	22.9	5.0	21.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
08.12.2025	10:30-10:30	43.8	21.2	5.5	21.6	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
09.12.2025	10:45-10:45	41.8	20.4	5.2	19.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
15.12.2025	10:20-10:20	41.5	19.9	5.4	22.2	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
16.12.2025	10:30-10:30	46.8	24.5	5.4	21.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
22.12.2025	10:30-10:30	40.9	19.5	8.1	18.9	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
23.12.2025	10:45-10:45	41.1	19.5	6.3	19.0	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



SUMMARY REPORT

Issued To	Tmt. D. RANI W/o E. Dhanapal, Old No. D/364, New. No. D/11, Ukkia Kaliyammani Koil Street, Annanagar, Thernur, Trichy District - 620 017.		
Site Location	Tmt. D. RANI Granite Quarry, Lease Area - 2.93.0 Ha. 75/1B (0.38.0 Ha) 75/3A (0.02.0 Ha), 76/1(1.16.0), 78/1(0.16.0 Ha), and 78/2 (0.21.0 Ha), Veeriampalayam village, Krishnarayapuram Taluk, Karur District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 7 - Pappayampatti(School)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9533,9559,9738,9775,10234,10270,10509,10525,10887,10931,11244,11271,11597,11651,12154,12242,12664,12721,13196,13239,13616,13694,14211,14281,14496,14555.		
Location Coordinates	10°51'48.10"N 78°16'19.43"E		
Report Date	08.01.2026		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
29.09.2025	10:15-10:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.09.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.10.2025	10:15-10:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2025	10:20-10:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2025	9:30-9:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2025	9:40-9:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2025	10:15-10:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2025	10:15-10:15	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2025	10:05-10:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2025	10:40-10:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2025	10:40-10:40	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2025	9:50-9:50	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2025	10:05-10:05	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2025	10:45-10:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2025	10:20-10:20	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2025	10:30-10:30	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2025	10:45-10:45	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0



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

Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager



TEST REPORT

ULR-TC606025000015136F

Report Number : GLCS/TR11246/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -1	Attention	-
Location Name	Core Zone	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11246/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	07.20 - 07.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'13.35"N 78°18'37.29"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	08.20	40.2	49.9	47.33
2	09.20	41.8	49.3	47.00
3	10.20	42.3	50.7	48.28
4	11.20	43.9	49.2	47.31
5	12.20	44.2	50.6	48.49
6	13.20	43.9	52.4	49.96
7	14.20	43.1	52.1	49.60
8	15.20	45.5	53.3	50.96

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



Page 1 of 3

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015136F

Report Number : GLCS/TR11246/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -1	Attention	-
Location Name	Core Zone	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11246/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	07.20 - 07.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'13.35"N 78°18'37.29"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	16.20	44.1	51.7	49.39
10	17.20	42.6	52.2	49.64
11	18.20	44.2	50.9	48.73
12	19.20	45.6	51.4	49.40
13	20.20	44.1	52.1	49.73
14	21.20	43.7	53.9	51.29
15	22.20	33.6	39.5	37.48
16	23.20	35.6	38.8	37.49

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

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TEST REPORT

ULR-TC606025000015136F

Report Number : GLCS/TR11246/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -1	Attention	-
Location Name	Core Zone	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11246/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	07.20 - 07.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'13.35"N 78°18'37.29"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	00.20	33.5	36.1	34.99
18	01.20	34.6	39.5	37.71
19	02.20	33.4	39.5	37.44
20	03.20	32.9	38.4	36.47
21	04.20	33.7	39.1	37.19
22	05.20	33.6	39.7	37.64
23	06.20	38.9	51.5	48.72
24	07.20	39.5	48.7	46.18
		Day Mean dB(A)		48.9
		Night Mean dB(A)		37.1
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager



GLOBAL LAB AND CONSULTANCY SERVICES LLP

S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem - 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in



TEST REPORT

ULR-TC606025000015137F

Report Number : GLCS/TR11247/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veeriampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -2	Attention	-
Location Name	Core Zone	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11247/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	07.50 - 07.50	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'27.33"N 78°18'39.40"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	08.50	40.1	48.6	46.16
2	09.50	41.8	49.5	47.17
3	10.50	42.4	50.3	47.94
4	11.50	42.2	51.7	49.15
5	12.50	43.6	52.1	49.66
6	13.50	44.7	53.2	50.76
7	14.50	44.1	55.2	52.51
8	15.50	43.6	54.5	51.83

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



TEST REPORT

ULR-TC606025000015137F

Report Number : GLCS/TR11247/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -2	Attention	-
Location Name	Core Zone	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11247/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	07.50 - 07.50	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'27.33"N 78°18'39.40"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	16.50	42.3	52.3	49.70
10	17.50	42.7	51.7	49.20
11	18.50	41.1	49.1	46.73
12	19.50	40.6	50.7	48.09
13	20.50	39.4	48.3	45.82
14	21.50	39.9	46.7	44.51
15	22.50	35.5	39.5	37.95
16	23.50	35.1	40.1	38.28

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

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TEST REPORT

ULR-TC606025000015137F

Report Number : GLCS/TR11247/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -2	Attention	-
Location Name	Core Zone	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11247/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	07.50 - 07.50	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'27.33"N 78°18'39.40"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	00.50	33.1	39.5	37.39
18	01.50	33.9	40.1	38.02
19	02.50	34.8	38.9	37.32
20	03.50	33.5	38.1	36.38
21	04.50	34.1	38.7	36.98
22	05.50	35.5	39.1	37.66
23	06.50	38.2	45.5	43.23
24	07.50	39.6	45.8	43.72
		Day Mean dB(A)		47.9
		Night Mean dB(A)		37.5
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				Day Time : 75 dB (A)
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

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GLOBAL LAB AND CONSULTANCY SERVICES LLP

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Salem - 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in



TEST REPORT

ULR-TC606025000015138F

Report Number : GLCS/TR11248/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veeriampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -3	Attention	-
Location Name	Near Habitation	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11248/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	08.25 - 08.25	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°52'59.78"N 78°18'24.01"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	09.25	41.1	55.6	52.74
2	10.25	43.8	55.1	52.40
3	11.25	42.3	53.2	50.53
4	12.25	45.7	53.5	51.16
5	13.25	44.2	54.3	51.69
6	14.25	44.9	53.6	51.14
7	15.25	45.6	54.2	51.75
8	16.25	44.2	53.8	51.24

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



TEST REPORT

ULR-TC606025000015138F

Report Number : GLCS/TR11248/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -3	Attention	-
Location Name	Near Habitation	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11248/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	08.25 - 08.25	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°52'59.78"N 78°18'24.01"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	17.25	45.8	53.6	51.26
10	18.25	43.3	52.5	49.98
11	19.25	42.2	51.7	49.15
12	20.25	41.7	50.8	48.29
13	21.25	40.2	49.9	47.33
14	22.25	39.9	45.5	43.55
15	23.25	38.6	43.6	41.78
16	00.25	37.2	42.5	40.61

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



Page 2 of 3

Authorised Signatory
L.Sudha Priya
Technical Manager

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for Accreditation

TEST REPORT

ULR-TC606025000015138F

Report Number : GLCS/TR11248/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -3	Attention	-
Location Name	Near Habitation	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11248/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	08.25 - 08.25	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°52'59.78"N 78°18'24.01"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	01.25	36.3	43.9	41.59
18	02.25	34.6	41.6	39.38
19	03.25	34.2	39.1	37.31
20	04.25	33.9	38.5	36.78
21	05.25	33.1	36.9	35.40
22	06.25	38.5	50.1	47.38
23	07.25	39.9	55	52.12
24	08.25	40.3	56.6	53.69
		Day Mean dB(A)		50.7
		Night Mean dB(A)		39.6
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

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GLOBAL LAB AND CONSULTANCY SERVICES LLP

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Salem - 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in



TEST REPORT

ULR-TC606025000015139F

Report Number : GLCS/TR11249/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -4	Attention	-
Location Name	"Devasingampatti (School)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11249/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	08.50 - 08.50	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'23.75"N 78°20'26.23"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	09.50	41.8	49.5	47.17
2	10.50	42.4	50.3	47.94
3	11.50	42.2	51.7	49.15
4	12.50	43.6	52.1	49.66
5	13.50	44.7	53.2	50.76
6	14.50	44.1	55.2	52.51
7	15.50	43.6	54.5	51.83
8	16.50	42.3	52.3	49.70

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



TEST REPORT

ULR-TC606025000015139F

Report Number : GLCS/TR11249/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -4	Attention	-
Location Name	"Devasingampatti (School)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11249/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	08.50 - 08.50	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'23.75"N 78°20'26.23"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	17.50	42.7	51.7	49.20
10	18.50	41.1	49.1	46.73
11	19.50	40.6	50.7	48.09
12	20.50	39.4	48.3	45.82
13	21.50	39.9	46.7	44.51
14	22.50	38.2	47.2	44.70
15	23.50	37.7	44.1	41.99
16	00.50	37.1	43.8	41.63

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Note:The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept 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.



for Accreditation

TEST REPORT

ULR-TC606025000015139F

Report Number : GLCS/TR11249/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -4	Attention	-
Location Name	"Devasingampatti (School)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11249/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	08.50 - 08.50	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'23.75"N 78°20'26.23"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	01.50	36.9	42.1	40.24
18	02.50	35.1	41.4	39.30
19	03.50	34.9	40.5	38.55
20	04.50	34.1	39.9	37.90
21	05.50	35.5	41.4	39.38
22	06.50	38.2	45.5	43.23
23	07.50	39.6	45.8	43.72
24	08.50	40.1	48.6	46.16
		Day Mean dB(A)		47.9
		Night Mean dB(A)		40.5
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

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GLOBAL LAB AND CONSULTANCY SERVICES LLP

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Salem - 636 016. Tamil Nadu. India.

Phone Nos.: +91 427 2970 989 / 70944 52628

E-Mail: lab@glcs.in; Web: www.glcs.in



for Accreditation



TEST REPORT

ULR-TC606025000015140F

Report Number : GLCS/TR11250/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veeriampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -5	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11250/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	09.20 - 09.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.31"N 78°17'7.56"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	10.20	41.3	52.6	49.90
2	11.20	42.7	53.1	50.47
3	12.20	43.5	54.9	52.19
4	13.20	44.9	55.1	52.49
5	14.20	44.2	56.7	53.93
6	15.20	45.6	54.1	51.66
7	16.20	43.8	55.9	53.15
8	17.20	42.1	53.7	50.98

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



TEST REPORT

ULR-TC606025000015140F

Report Number : GLCS/TR11250/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -5	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11250/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	09.20 - 09.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.31"N 78°17'7.56"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	18.20	41.5	55.6	52.76
10	19.20	40.9	51.9	49.22
11	20.20	39.2	48.2	45.70
12	21.20	38.8	46.6	44.26
13	22.20	37.3	40.5	39.19
14	23.20	36.6	42.8	40.72
15	00.20	35.2	41.3	39.24
16	01.20	34.9	40.9	38.86

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

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TEST REPORT

ULR-TC606025000015140F

Report Number : GLCS/TR11250/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -5	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11250/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	09.20 - 09.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.31"N 78°17'7.56"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	02.20	33.1	45.3	42.54
18	03.20	33.9	43.6	41.03
19	04.20	34.4	42.1	39.77
20	05.20	33.6	43.3	40.73
21	06.20	34.5	42.9	40.48
22	07.20	40.7	49.2	46.76
23	08.20	39.8	49.6	47.02
24	09.20	40.1	49.2	46.69
		Day Mean dB(A)		49.2
		Night Mean dB(A)		40.3
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

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GLOBAL LAB AND CONSULTANCY SERVICES LLP

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Salem - 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in



TEST REPORT

ULR-TC606025000015141F

Report Number : GLCS/TR11251/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veeriampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -6	Attention	-
Location Name	"Palapatti (Residential)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11251/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	09.45 - 09.45	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'14.33"N 78°20'44.51"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	10.45	40.8	50.3	47.75
2	11.45	41.2	51.7	49.06
3	12.45	42.4	52.9	50.26
4	13.45	41.9	53.1	50.41
5	14.45	43.7	52.9	50.38
6	15.45	43.5	52.8	50.27
7	16.45	44.3	53.2	50.72
8	17.45	42.2	51.1	48.62

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



For Global Lab and Consultancy Services LLP

Page 1 of 3

Authorised Signatory
L.Sudha Priya
Technical Manager



TEST REPORT

ULR-TC606025000015141F

Report Number : GLCS/TR11251/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -6	Attention	-
Location Name	"Palapatti (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11251/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	09.45 - 09.45	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'14.33"N 78°20'44.51"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	18.45	41.5	50.9	48.36
10	19.45	40.9	48.7	46.36
11	20.45	40.8	46.6	44.60
12	21.45	39.6	46.4	44.21
13	22.45	37.5	45.6	43.22
14	23.45	36.4	43.2	41.01
15	00.45	35.1	41.5	39.39
16	01.45	34.9	40.1	38.24

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

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TEST REPORT

ULR-TC606025000015141F

Report Number : GLCS/TR11251/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -6	Attention	-
Location Name	"Palapatti (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11251/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	09.45 - 09.45	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'14.33"N 78°20'44.51"E
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	02.45	34.2	39.5	37.61
18	03.45	35.6	38.9	37.56
19	04.45	33.3	36.8	35.39
20	05.45	34.8	35.8	35.33
21	06.45	39.1	43.1	41.55
22	07.45	38.9	45.5	43.35
23	08.45	40.5	46.9	44.79
24	09.45	39.6	48.1	45.66
		Day Mean dB(A)		47.3
		Night Mean dB(A)		38.5
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

Note:The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions.



GLOBAL LAB AND CONSULTANCY SERVICES LLP

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Salem - 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in



TEST REPORT

ULR-TC606025000015142F

Report Number : GLCS/TR11252/2025-26

Report Date : 22-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veeriampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -7	Attention	-
Location Name	"Pappayampadi (School)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11252/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	10.20 - 10.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Avg Temperature	- °C
Location Co-ordinates	10°51'47.70"N 78°16'19.59"E	Avg Humidity	- %
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	11.20	38.8	59.1	56.13
2	12.20	36.1	59.5	56.51
3	13.20	35.7	60.7	57.70
4	14.20	37.9	52.9	50.02
5	15.20	38.2	59.1	56.12
6	16.20	36.6	56.6	53.63
7	17.20	35.7	54.1	51.15
8	18.20	34.1	55.5	52.52

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



TEST REPORT

ULR-TC606025000015142F

Report Number : GLCS/TR11252/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -7	Attention	-
Location Name	"Pappayampadi (School)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11252/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	10.20 - 10.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Avg Temperature	- °C
Location Co-ordinates	10°51'47.70"N 78°16'19.59"E	Avg Humidity	- %
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	19.20	36.2	53.9	50.96
10	20.20	35.8	54.1	51.15
11	21.20	34.1	49.5	46.61
12	22.20	35.6	46.2	43.55
13	23.20	36.2	44.3	41.92
14	00.20	34.8	42.1	39.83
15	01.20	33.4	41.5	39.12
16	02.20	32.8	40.9	38.52

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

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TEST REPORT

ULR-TC606025000015142F

Report Number : GLCS/TR11252/2025-26

Report Date : 22-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District-620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District-
Sample Name	AMBIENT NOISE LEVEL MONITORING -7	Attention	-
Location Name	"Pappayampadi (School)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3258/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11252/2025-26	Sampling Method	GLCS/SOP/N/014
Sample Description	-	Sample Receipt Date	05-11-2025
Sampling Date	03-11-2025 - 04-11-2025	Date of Analysis	20-11-2025
Sampling Hours	10.20 - 10.20	Date of Completion	20-11-2025
Sample Receipt Condition	Good	Avg Temperature	- °C
Location Co-ordinates	10°51'47.70"N 78°16'19.59"E	Avg Humidity	- %
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	03.20	33.3	39.1	37.10
18	04.20	32.8	38.6	36.60
19	05.20	31.2	37.7	35.57
20	06.20	32.9	38.2	36.31
21	07.20	35.6	46.3	43.64
22	08.20	36.5	47.8	45.10
23	09.20	37.7	49.2	46.69
24	10.20	38.5	50.6	47.85
		Day Mean dB(A)		50.1
		Night Mean dB(A)		39.0
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				Day Time : 55 dB (A)
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, CPCB - Central Pollution Control Board,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 3

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

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BRANCH OFFICES : CHENNAI (Mobile : 7094453636) & COIMBATORE (Mobile : 7094454646)



TEST REPORT

ULR-TC606025000015244F

Report Number : GLCS/TR11617/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 1	Attention	-
Location Name	CORE ZONE	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11617/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.10	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'20.46"N 78°18'37.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	301.1
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	11.7
3	Boron	USEPA-6010D:2014	mg/kg	BDL(DL: 0.5)
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.04
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL(DL: 0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	36.78
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.7
8	Chromium	USEPA-6010D-2014	mg/kg	0.78

Note : BDL - Below Detection Limit, DL - Detection Limit,



Page 1 of 4

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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ULR-TC606025000015244F

Report Number : GLCS/TR11617/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
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Sample Name	SOIL - 1	Attention	-
Location Name	CORE ZONE	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11617/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.10	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'20.46"N 78°18'37.89"E
Other Details (If any)	NA		

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	1.8
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	0.9
12	Iron	USEPA-6010 D-2014	mg/kg	180.3
13	Lead	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	2.34
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.30
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.52

Note : BDL - Below Detection Limit, DL - Detection Limit,



Page 2 of 4

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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Report Date : 25-11-2025

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Sample Name	SOIL - 1	Attention	-
Location Name	CORE ZONE	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11617/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.10	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'20.46"N 78°18'37.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.10
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.32
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	413
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	3.31
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.62
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.32
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	39.06
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	51.60

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 4

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for Accreditation

TEST REPORT

ULR-TC606025000015244F

Report Number : GLCS/TR11617/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 1	Attention	-
Location Name	CORE ZONE	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11617/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.10	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'20.46"N 78°18'37.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 4 of 4

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

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TEST REPORT

ULR-TC606025000015245F

Report Number : GLCS/TR11618/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL -2	Attention	-
Location Name	NEAR HABITATION	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11618/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.30	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'0.66"N 78°18'22.01"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	351.2
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	12.9
3	Boron	USEPA-6010D:2014	mg/kg	BDL(DL: 0.5)
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.13
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL(DL: 0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	39.01
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.5
8	Chromium	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)

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-TC606025000015245F

Report Number : GLCS/TR11618/2025-26

Report Date : 25-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL -2	Attention	-
Location Name	NEAR HABITATION	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11618/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.30	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'0.66"N 78°18'22.01"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	3.56
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.9
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.3
12	Iron	USEPA-6010 D-2014	mg/kg	3.27
13	Lead	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	6.88
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.38
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.66

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 2 of 4

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Report Date : 25-11-2025

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Sample Name	SOIL -2	Attention	-
Location Name	NEAR HABITATION	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11618/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.30	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'0.66"N 78°18'22.01"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.84
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	548
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	3.76
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	32.19
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	29.16
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	38.65
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	50.60

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 4

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for Accreditation

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ULR-TC606025000015245F

Report Number : GLCS/TR11618/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL -2	Attention	-
Location Name	NEAR HABITATION	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11618/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.30	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°53'0.66"N 78°18'22.01"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	10.1

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 4 of 4

*****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-TC606025000015246F

Report Number : GLCS/TR11619/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 3	Attention	-
Location Name	"Devasingampatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11619/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'21.25"N 78°20'24.25"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	275.97
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	13.4
3	Boron	USEPA-6010D:2014	mg/kg	12.29
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.11
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL(DL: 0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	42.73
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.2
8	Chromium	USEPA-6010D-2014	mg/kg	5.42

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-TC606025000015246F

Report Number : GLCS/TR11619/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 3	Attention	-
Location Name	"Devasingampatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11619/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'21.25"N 78°20'24.25"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	4.23
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	3.4
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.5
12	Iron	USEPA-6010 D-2014	mg/kg	187.54
13	Lead	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	5.42
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.38
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.66

Note : BDL - Below Detection Limit, DL - Detection Limit,



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For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015246F

Report Number : GLCS/TR11619/2025-26

Report Date : 25-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 3	Attention	-
Location Name	"Devasingampatti (Agriculture)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11619/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'21.25"N 78°20'24.25"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.90
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.18
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	503
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	4.9
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	23.18
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.31
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	41.51
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	49.60

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 4

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TEST REPORT

ULR-TC606025000015246F

Report Number : GLCS/TR11619/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 3	Attention	-
Location Name	"Devasingampatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11619/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'21.25"N 78°20'24.25"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	8.66

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

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-TC606025000015247F

Report Number : GLCS/TR11620/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 4	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11620/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.37"N 78°17'8.03"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	476.67
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	14.1
3	Boron	USEPA-6010D:2014	mg/kg	3.34
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.18
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL(DL: 0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	49.48
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	1.40

Note : BDL - Below Detection Limit, DL - Detection Limit,



Page 1 of 4

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015247F

Report Number : GLCS/TR11620/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 4	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11620/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.37"N 78°17'8.03"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	1.05
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.1
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	21.05
13	Lead	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	1.35
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.43
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.74

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 2 of 4

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TEST REPORT

ULR-TC606025000015247F

Report Number : GLCS/TR11620/2025-26

Report Date : 25-11-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 4	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11620/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.37"N 78°17'8.03"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.69
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.06
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	355
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	3.83
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.62
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	32.82
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	41.56
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	52.60

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 4

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TEST REPORT

ULR-TC606025000015247F

Report Number : GLCS/TR11620/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 4	Attention	-
Location Name	"Cholapuram (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11620/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.00	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°55'12.37"N 78°17'8.03"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	2.24

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

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-TC606025000015248F

Report Number : GLCS/TR11621/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 5	Attention	-
Location Name	"Palapatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11621/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.20	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'12.70"N 78°20'45.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	388.86
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	12.0
3	Boron	USEPA-6010D:2014	mg/kg	2.20
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.05
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL(DL: 0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	36.86
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.2
8	Chromium	USEPA-6010D-2014	mg/kg	3.19

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-TC606025000015248F

Report Number : GLCS/TR11621/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 5	Attention	-
Location Name	"Palapatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11621/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.20	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'12.70"N 78°20'45.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	2.85
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	3.0
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.3
12	Iron	USEPA-6010 D-2014	mg/kg	45.12
13	Lead	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	3.59
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.33
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.57

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-TC606025000015248F

Report Number : GLCS/TR11621/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 5	Attention	-
Location Name	"Palapatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11621/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.20	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'12.70"N 78°20'45.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.56
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.20
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	μS/cm	396
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.73
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.62
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	32.82
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	41.56
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	53.6

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 4

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TEST REPORT

ULR-TC606025000015248F

Report Number : GLCS/TR11621/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 5	Attention	-
Location Name	"Palapatti (Agriculture)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11621/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.20	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°54'12.70"N 78°20'45.89"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	2.75

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP

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L.Sudha Priya
Technical Manager

Page 4 of 4

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

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TEST REPORT

ULR-TC606025000015249F

Report Number : GLCS/TR11622/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 6	Attention	-
Location Name	"Pappayampadi (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11622/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.50	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'47.28"N 78°16'19.96"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ; Issue no:02: 2024	kg/ha	413.95
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	11.7
3	Boron	USEPA-6010D:2014	mg/kg	2.14
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.20
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL(DL: 0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	40.69
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.0
8	Chromium	USEPA-6010D-2014	mg/kg	1.45

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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ULR-TC606025000015249F

Report Number : GLCS/TR11622/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
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Sample Name	SOIL - 6	Attention	-
Location Name	"Pappayampadi (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11622/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.50	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'47.28"N 78°16'19.96"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	1.45
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	3.7
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.4
12	Iron	USEPA-6010 D-2014	mg/kg	2.84
13	Lead	USEPA-6010D-2014	mg/kg	BDL(DL: 0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	3.44
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.23
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.40

Note : BDL - Below Detection Limit, DL - Detection Limit,



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L.Sudha Priya
Technical Manager

Page 2 of 4

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Report Date : 25-11-2025

Customer Provided Details:

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Sample Name	SOIL - 6	Attention	-
Location Name	"Pappayampadi (Residential)"	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11622/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.50	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'47.28"N 78°16'19.96"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.04
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.14
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	388
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.26
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	23.18
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.31
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	41.51
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	54.40

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 3 of 4

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ULR-TC606025000015249F

Report Number : GLCS/TR11622/2025-26

Report Date : 25-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SOIL - 6	Attention	-
Location Name	"Pappayampadi (Residential)"	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11622/2025-26	Sampling Method	GLCS/SOP/S/014
Sample Description	Powder	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.50	Date of Completion	24-11-2025
Sample Receipt Condition	Good	Location Co-ordinates	10°51'47.28"N 78°16'19.96"E
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	4.09

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

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-TC606025000014911F

Report Number : GLCS/TR11623/2025-26

Report Date : 17-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 1	Attention	-
Location Name	Panjpatty Lake	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11623/2025-26	Sampling Method	GLCS/M/SOP/05
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.15	Date of Completion	16-11-2025
Sample Receipt Condition	Good	Avg Temperature	25.4 °C
Location Co-ordinates	10°49'43.65"N 78°17'56.30"E	Avg Humidity	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



for Report

Page 1 of 1

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

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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TEST REPORT

ULR-TC606025000015601F

Report Number : GLCS/TR11623/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 1	Attention	-
Location Name	Panjapatty Lake	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11623/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.15	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.4 °C
Location Co-ordinates	10°49'43.65"N 78°17'56.30"E	Avg Humidity	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.032
2	Ammoniacal Nitrogen as NH3-N	IS 3025 (Part 34)/Sec 1: 2023	mg/l	1.60
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	0.082
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	9.6
6	Boron as B	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	0.391
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	67.3

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-TC606025000015601F

Report Number : GLCS/TR11623/2025-26

Report Date : 01-12-2025

Customer Provided Details:

Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 1	Attention	-
Location Name	Panjapatty Lake	Other Details (If any)	NA

Laboratory Provided Details:

TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11623/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.15	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.4 °C
Location Co-ordinates	10°49'43.65"N 78°17'56.30"E	Avg Humidity	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	30.0
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	142.0
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
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL: 0.01)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	4.8
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	μS/cm	947

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 2 of 5

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TEST REPORT

ULR-TC606025000015601F

Report Number : GLCS/TR11623/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 1	Attention	-
Location Name	Panjapatty Lake	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11623/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.15	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.4 °C
Location Co-ordinates	10°49'43.65"N 78°17'56.30"E	Avg Humidity	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	BDL (DL: 0.1)
18	Free Residual Chlorine as Cl ₂	IS 3025 (Part 26): 2021	mg/l	BDL (DL: 1.0)
19	Iron as Fe	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
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	25.3
22	Manganese as Mn	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015601F

Report Number : GLCS/TR11623/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	SURFACE WATER - 1	Attention	-
Location Name	Panjapatty Lake	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11623/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.15	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.4 °C
Location Co-ordinates	10°49'43.65"N 78°17'56.30"E	Avg Humidity	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	4.0
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	7.46
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	21.9
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	238.4

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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for Accreditation

TEST REPORT

ULR-TC606025000015601F

Report Number : GLCS/TR11623/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 1	Attention	-
Location Name	Panjapatty Lake	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11623/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.15	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.4 °C
Location Co-ordinates	10°49'43.65"N 78°17'56.30"E	Avg Humidity	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	547
34	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	272.0
35	Total Suspended Solids	IS 3025 PART 17: 2022	mg/l	5.0
36	Turbidity	IS 3025 (Part 10): 2023	NTU	4.0
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.015

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

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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for Accreditation

TEST REPORT

ULR-TC606025000014912F

Report Number : GLCS/TR11624/2025-26

Report Date : 17-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 2	Attention	-
Location Name	Cauvery River	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11624/2025-26	Sampling Method	GLCS/M/SOP/05
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.40	Date of Completion	16-11-2025
Sample Receipt Condition	Good	Avg Temperature	25.8 °C
Location Co-ordinates	10°57'19.65"N 78°19'39.03"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

Page 1 of 1

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

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Report Date : 01-12-2025

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Sample Name	SURFACE WATER - 2	Attention	-
Location Name	Cauvery River	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11624/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.8 °C
Location Co-ordinates	10°57'19.65"N 78°19'39.03"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.038
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	0.032
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	14.4
6	Boron as B	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.067
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	81.8

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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Report Number : GLCS/TR11624/2025-26

Report Date : 01-12-2025

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Sample Name	SURFACE WATER - 2	Attention	-
Location Name	Cauvery River	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11624/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.8 °C
Location Co-ordinates	10°57'19.65"N 78°19'39.03"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	40.0
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	161.9
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	7
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL: 0.01)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	4.4
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1074

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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Sample Name	SURFACE WATER - 2	Attention	-
Location Name	Cauvery River	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11624/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.8 °C
Location Co-ordinates	10°57'19.65"N 78°19'39.03"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	BDL (DL: 0.1)
18	Free Residual Chlorine as Cl ₂	IS 3025 (Part 26): 2021	mg/l	BDL (DL: 1.0)
19	Iron as Fe	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
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	24.32
22	Manganese as Mn	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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ULR-TC606025000015602F

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Report Date : 01-12-2025

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Sample Name	SURFACE WATER - 2	Attention	-
Location Name	Cauvery River	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11624/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.8 °C
Location Co-ordinates	10°57'19.65"N 78°19'39.03"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	3.7
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	7.64
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	30.0
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	274.7

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-TC606025000015602F

Report Number : GLCS/TR11624/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	SURFACE WATER - 2	Attention	-
Location Name	Cauvery River	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11624/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	11.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.8 °C
Location Co-ordinates	10°57'19.65"N 78°19'39.03"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	630
34	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	304.0
35	Total Suspended Solids	IS 3025 PART 17: 2022	mg/l	7.0
36	Turbidity	IS 3025 (Part 10): 2023	NTU	4.6
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC606025000014913F

Report Number : GLCS/TR11625/2025-26

Report Date : 17-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11625/2025-26	Sampling Method	GLCS/M/SOP/05
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.05	Date of Completion	16-11-2025
Sample Receipt Condition	Good	Avg Temperature	26.1 °C
Location Co-ordinates	10°53'15.67"N 78°18'47.85"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000015603F

Report Number : GLCS/TR11625/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11625/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.1 °C
Location Co-ordinates	10°53'15.67"N 78°18'47.85"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.013
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	0.045
5	Boron as B	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
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	56.1
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	124.0

Note : BDL - Below Detection Limit, DL - Detection Limit,



Page 1 of 5

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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for Accreditation

TEST REPORT

ULR-TC606025000015603F

Report Number : GLCS/TR11625/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11625/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.1 °C
Location Co-ordinates	10°53'15.67"N 78°18'47.85"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL: 0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	763
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.12
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL: 1.0)
16	Iron as Fe	GLCS/SOP/W/62 Issue No:1: Date: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 2 of 5

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TEST REPORT

ULR-TC606025000015603F

Report Number : GLCS/TR11625/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11625/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.1 °C
Location Co-ordinates	10°53'15.67"N 78°18'47.85"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	22.4
19	Manganese as Mn	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
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	2.2
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.12

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-TC606025000015603F

Report Number : GLCS/TR11625/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11625/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.1 °C
Location Co-ordinates	10°53'15.67"N 78°18'47.85"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL: 0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	23.5
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL: 1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	141.4
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	462
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	232.0
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



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015603F

Report Number : GLCS/TR11625/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11625/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.1 °C
Location Co-ordinates	10°53'15.67"N 78°18'47.85"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC606025000014914F

Report Number : GLCS/TR11626/2025-26

Report Date : 17-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 2	Attention	-
Location Name	Cholapuram	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11626/2025-26	Sampling Method	GLCS/M/SOP/05
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.30	Date of Completion	16-11-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°55'8.78"N 78°17'8.06"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



for Report

Page 1 of 1

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

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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TEST REPORT

ULR-TC606025000015604F

Report Number : GLCS/TR11626/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 2	Attention	-
Location Name	Cholapuram	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11626/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.30	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°55'8.78"N 78°17'8.06"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.012
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	0.069
5	Boron as B	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	0.024
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	48.1
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	138.0

Note : BDL - Below Detection Limit, DL - Detection Limit,




Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015604F

Report Number : GLCS/TR11626/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 2	Attention	-
Location Name	Cholapuram	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11626/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.30	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°55'8.78"N 78°17'8.06"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL: 0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	840
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	BDL (DL: 0.1)
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL: 1.0)
16	Iron as Fe	GLCS/SOP/W/62 Issue No:1: Date: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

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TEST REPORT

ULR-TC606025000015604F

Report Number : GLCS/TR11626/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	WELL WATER - 2	Attention	-
Location Name	Cholapuram	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11626/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.30	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°55'8.78"N 78°17'8.06"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	17.5
19	Manganese as Mn	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
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	2.1
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.35

Note : BDL - Below Detection Limit, DL - Detection Limit,



Page 3 of 5

For Global Lab and Consultancy Services LLP



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015604F

Report Number : GLCS/TR11626/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	WELL WATER - 2	Attention	-
Location Name	Cholapuram	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11626/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.30	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°55'8.78"N 78°17'8.06"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL: 0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	24.1
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	206.0
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	492
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	192.0
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



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015604F

Report Number : GLCS/TR11626/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	WELL WATER - 2	Attention	-
Location Name	Cholapuram	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11626/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	12.30	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°55'8.78"N 78°17'8.06"E	Avg Humidity	50.2 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP

(Signature)

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC606025000014915F

Report Number : GLCS/TR11627/2025-26

Report Date : 17-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11627/2025-26	Sampling Method	GLCS/M/SOP/05
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.05	Date of Completion	16-11-2025
Sample Receipt Condition	Good	Avg Temperature	25.1 °C
Location Co-ordinates	10°53'23.19"N 78°18'52.60"E	Avg Humidity	51.7 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



for Report

Page 1 of 1

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

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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for Accreditation

TEST REPORT

ULR-TC606025000015605F

Report Number : GLCS/TR11627/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11627/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.1 °C
Location Co-ordinates	10°53'23.19"N 78°18'52.60"E	Avg Humidity	51.7 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL: 1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.020
5	Boron as B	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.024
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	75.4
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	167.9

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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ULR-TC606025000015605F

Report Number : GLCS/TR11627/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	BOREWELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11627/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.1 °C
Location Co-ordinates	10°53'23.19"N 78°18'52.60"E	Avg Humidity	51.7 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL: 0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1190
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.19
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL: 1.0)
16	Iron as Fe	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

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ULR-TC606025000015605F

Report Number : GLCS/TR11627/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	BOREWELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11627/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.1 °C
Location Co-ordinates	10°53'23.19"N 78°18'52.60"E	Avg Humidity	51.7 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	30.2
19	Manganese as Mn	GLCS/SOP/W/62 Issue No:1: Date:10.09.2022	mg/l	BDL (DL: 0.01)
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	3.5
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	6.96

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-TC606025000015605F

Report Number : GLCS/TR11627/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	BOREWELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11627/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.1 °C
Location Co-ordinates	10°53'23.19"N 78°18'52.60"E	Avg Humidity	51.7 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL: 0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	28.9
28	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL: 1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	278.8
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	697
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	312.0
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



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015605F

Report Number : GLCS/TR11627/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 1	Attention	-
Location Name	Near Project Area	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11627/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	1.05	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	25.1 °C
Location Co-ordinates	10°53'23.19"N 78°18'52.60"E	Avg Humidity	51.7 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Page 5 of 5

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

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TEST REPORT

ULR-TC606025000014916F

Report Number : GLCS/TR11628/2025-26

Report Date : 17-11-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 2	Attention	-
Location Name	Devasingampatti	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11628/2025-26	Sampling Method	GLCS/M/SOP/05
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	01.40	Date of Completion	16-11-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°51'20.61"N 78°20'23.64"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present



for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

Page 1 of 1

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

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TEST REPORT

ULR-TC606025000015606F

Report Number : GLCS/TR11628/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 2	Attention	-
Location Name	Devasingampatti	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11628/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	01.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°51'20.61"N 78°20'23.64"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.013
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	0.081
5	Boron as B	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.386
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	83.4
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	171.9

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-TC606025000015606F

Report Number : GLCS/TR11628/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 2	Attention	-
Location Name	Devasingampatti	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11628/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	01.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°51'20.61"N 78°20'23.64"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL: 0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1102
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.20
15	Free Residual Chlorine as Cl ₂	IS 3025 (Part 26): 2021	mg/l	BDL (DL: 1.0)
16	Iron as Fe	GLCS/SOP/W/62 Issue No:1: Date: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

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TEST REPORT

ULR-TC606025000015606F

Report Number : GLCS/TR11628/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 2	Attention	-
Location Name	Devasingampatti	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11628/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	01.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°51'20.61"N 78°20'23.64"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	21.4
19	Manganese as Mn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.01)
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	3.1
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.41

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-TC606025000015606F

Report Number : GLCS/TR11628/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
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Sample Name	BOREWELL WATER - 2	Attention	-
Location Name	Devasingampatti	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11628/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	01.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°51'20.61"N 78°20'23.64"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL: 0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL: 0.005)
27	Sulphate as SO ₄	IS 3025 (Part 24) Section 1: 2022	mg/l	28.9
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	282.8
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	649
31	Total Hardness as CaCO ₃	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	296.0
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



Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000015606F

Report Number : GLCS/TR11628/2025-26

Report Date : 01-12-2025

Customer Provided Details:			
Issued To	Tmt.D.RANI W/o.E.Dhanapal, Old No:D/364, New No:D/11, Ukkiakaliammani Koil Street, Anna Nagar, Thernur Trichy District 620017	Site Address	Tmt.D.RANI GRANITE QUARRY Lease Area: 2.93.0Ha, SF.No:75/1B(0.38.0Ha), 75/3A(0.02.0Ha), 76/1(1.16.0Ha), 78/1(0.16.0Ha) & 78/2(0.21.0 Ha), Veerampalayam Village, Krishnarayapuram Taluk Karur District
Sample Name	BOREWELL WATER - 2	Attention	-
Location Name	Devasingampatti	Other Details (If any)	NA
Laboratory Provided Details:			
TRF No.	TRF/3354/2025-26	Sampled by	Laboratory
Sample Code	GLCS/11628/2025-26	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Sample Receipt Date	12-11-2025
Sampling Date	10-11-2025	Date of Analysis	12-11-2025
Sampling Hours	01.40	Date of Completion	01-12-2025
Sample Receipt Condition	Good	Avg Temperature	26.4 °C
Location Co-ordinates	10°51'20.61"N 78°20'23.64"E	Avg Humidity	50.9 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.021

Note : BDL - Below Detection Limit, DL - Detection Limit,



for Report

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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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.