DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

&

ENVIRONMENT MANAGEMENT PLAN

FOR OBTAINING

Environmental Clearance under EIA Notification – 2006
Schedule Sl. No. 1 (a) (i): Mining Project
"B1" CATEGORY – MINOR MINERAL – CLUSTER –GOVERNMENT PORAMBOKE LAND –
EXISTING QUARRY

THIRU. R. JAFFER ALI ROUGH STONE AND GRAVEL QUARRY

Cluster Extent – 8.51.5 Ha

Project Proponent

Thiru. R. Jaffer Ali,
S/o. Raja Mohammed,
T.S.No. 9884, Kalif Nagar 4th Street,
Pudukkottai District – 622 001.

Mining period – 3 Years

PROJECT LOCATION	PROPOSED PRODUCTION
S.F.Nos. 216/1 **Extent: 1.47.5Ha** Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State	**Reserves =** 73,185m^3 of Rough stone **Peak Production** = 27,185m^3 of Rough Stone **Proposed Depth =53m BGL** **Existing Depth =40m BGL**

ToR obtained vide
File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025

Environmental Consultant
GEO EXPLORATION AND MINING SOLUTIONS
Old No. 260-B, New No. 17,
Advaitha Ashram Road, Alagapuram,
Salem – 636 004, Tamil Nadu, India
Accredited for sector 1 Cat 'A', sector 31 & 38 Cat 'B'
Certificate No : NABET/EIA/25-28/RA 0424
Valid Till: 06.08.2028
Phone: 0427-2431989,
Email: ifthiahmed@gmail.com, geothangam@gmail.com
Web: www.gemssalem.com

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

Baseline Monitoring Period
MARCH TO MAY 2025

SEPTEMBER 2025

UNDERTAKING

I Thiru. R. Jaffer Ali given undertaking that this EIA & EMP report prepared for our Rough stone and Gravel quarry situated in S.F.Nos. 216/1 over an extent of 1.47.5Ha Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025.

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

Signature of the Project Proponent



R.Jaffer Ali

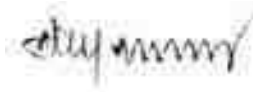
Place: Pudukkottai
Dated:

DECLARATION

I Dr. P. Thangaraju – EIA Co Ordinator declare that this EIA & EMP report for the Rough stone and Gravel quarry in S.F.Nos. 216/1 over an extent of 1.47.5Ha Melur Village, Kulathur Taluk, Pudukkottai 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



Dr. P. Thangaraju

M/s. Geo Exploration and Mining Solutions

Place: Salem
Dated:

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

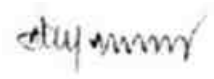
Declaration by experts contributing to the EIA/EMP for Thiru.R. Jaffer Ali Rough Stone Quarry over an Extent of **1.47.5 Ha** in Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

Name**:** **Dr. P. Thangaraju**

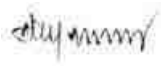
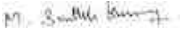
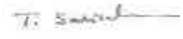
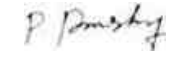
Designation**:** **EIA Coordinator**

Date & Signature:



Period of Involvement: **Nov 2023 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	Dr. P. Thangaraju	
4	GEO	▪ Field Survey for assessing the regional and local geology of the area. ▪ Preparation of mineral and geological maps. ▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology.	Mr. M. Santhoshkumar	
5	SE	▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility.	Dr. T. Sasikala	
6	EB	▪ Collection of Baseline data of Flora and Fauna. ▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list. ▪ Impact of the project on flora and fauna. ▪ Suggesting species for greenbelt development.	Mr. Panneer Selvam	
7	RH	▪ Identification of hazards and hazardous substances ▪ Risks and consequences analysis ▪ Vulnerability assessment ▪ Preparation of Emergency Preparedness Plan ▪ Management plan for safety.	Mr. J. R. Vikram Krishna	
8	LU	▪ Construction of Land use Map ▪ Impact of project on surrounding land use	Mr.P. Viswanathan	

		▪ Suggesting post closure sustainable land use and mitigative measures.		
9	NV	▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP.	Mr. 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 this EIA/EMP for R. Jaffer Ali Rough Stone Quarry Project over an Extent of 1.47.5 ha in Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature& Date: 

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

Designation: **Managing Partner**

Name of the EIA Consultant Organization: **M/s. Geo Exploration and Mining Solutions**

NABET Certificate No & Issue Date: **NABET/EIA/25-28/RA 0424 Dated: 25-8-2025**

Validity: **Valid till 06.08.2028**

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

CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
PROPOSED QUARRY					
P1	Thiru. P.Jaffer Ali, S/o. Raja Mohammed, T.S.No. 9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001.	Melur	216/1	1.47.5 Ha	File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025
P2	Thiru.Tamilselvan, S/ o.Thangarasa, No.591, Annanagar, Melur, Kulathur Taluk, Pudukkottai District	Melur	80/2 & etc.,	4.54.0 Ha	EC Granted
P3	Tvl.Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village, Kulathur Taluk, Pudukkottai District-	Melur	80/3,80/4, 80/5;80/6, 80/17& 80/19	1.68.0 Ha	EC Granted
	TOTAL EXTENT			**7.69.5**	
EXISTING QUARRY					
E-1	Thiru.R.Muthusamy, S/o.Rengasamy, No.663, Meta Muthudaiyanpatti village, Kulathur Taluk, Pudukkottai District	Melur	80/20, 80/21& 80/22	0.82.0Ha	28.11.2023 to 27.11.2028
	TOTAL EXTENT			**0.82.0 Ha**	
EXPIRED QUARRIES					
EX-1	N.Rengasamy, S/ o.Nadasakandiyar, Melur village, Kulathur Taluk, Pudukkottai District	Melur	216/6, 216/10 216/17 216/18	0.56.0	30.05.2009 to 29.05.2014
EX-2	Thiru.S.M.Sait, No.59, Charles Nagar, Pudukkottai	Melur	216/22 A	0.40.5	27.11.2013 to 26.11.2018
EX-3	Thiru.A.Periyasamy, S/o.Adaikkalam, T.S.No.6985, Thirukokarnam, Pudukkottai	Melur	216/15 B	0.75.0	19.02.16 to 18.02.2021
EX-4	Thiru.R.Muthusamy, S/o.Rengasamy, Melur, Sathiyamangalam. post, Kulathur Taluk, Pudukkottai District	Melur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
EX-5	S.M.Sait, S/o.MookaiahSolahar, No.51,52, Charlas Nagar,Pudukkottai	Melur	207/8	0.50.0	20.01.2017 to 19.01.2022
EX-6	Thiru.M.Velu, S/o.Muthiah, Echanari Thottiavayal, Melur, Kulathur Taluk, Pudukkottai	Melur	207/14B 207/15A	0.65.5	28.06.2017 to 27.06.2022
EX-7	Thiru.R.Natesan, S/o.Rengasamy, No.715A,Narkkeerar Vayal, Melur, Pudukkottai District	Melur	216/1	1.47.5	12.09.2017 to 11.09.2022
EX-8	M/s.Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai (Dt)	Melur	207/21 B 207/22 B2 207/23	1.30.5	31.07.2019 to 30.07.2024
	TOTAL CLUSTER EXTENT			**8.51.5 Ha**	

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

TERMS OF REFERENCE (ToR) COMPLIANCE

File No: 12313

ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025

SEAC CONDITIONS – SITE SPECIFIC		
1.1	1.A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.	**Noted & agreed.** Copy of affidavit agreement regarding forming CMC will be submitted during the appraisal meeting.
	2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	**Noted & agreed.** The boundary pillars were erected in accordance with the mining rules
	3. 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. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC	**Noted and Agreed** It is an existing quarry the maximum depth of the mining reached up to 40m. For this mining plan period it is proposed 53m bgl. The slope stability study will be carried out after lease execution and the report will be submit along with Half Yearly Compliance Report.
	4. 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 Project Proponent (PP) agreed to prepare a detailed conceptual working plan that incorporates haul road accessibility while maintaining the integrity of the working benches. The plan will ensure slope stability of both the proposed benches to be constructed and the existing quarry walls.
	5. Since waterbodies are situated nearby, the PP shall carry out the hydrological study including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies	**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. Page no.54

	6.The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III Page no.88
	7. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III Page no.88
	8. The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted & agreed Fencing & green belt photographs are enclosed in chapter 2. Page no.12 There are no trees in inside lease area.
	9. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report	Noted and agreed The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3, Page No. 73.
	10. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	Noted and Agreed Details are discussed in chapter no 10, Table no 10.9, Page No. 161 and the sworn affidavit will be submitted after obtaining Environmental Clearance.
	11.The P 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 study was detailed in chapter 7, Page No. 131.
	12.The PP shall install the CCTV camera for the continuous surveillance of mining activity & Furnish the photographic/videographic evidence along with the EIA report.	**Noted & agreed.** The Project Proponent agreed to the installation of CCTV cameras to facilitate ongoing monitoring of mining operations. The photographic and video evidence produced by the surveillance system will be methodically documented and submitted during the appraisal meeting.
SEAC STANDARD CONDITIONS		
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	Noted & agreed Lessee: Thiru. R. Natesan Lease Period: 12.09.2017 to 11.09.2022 **District Collector's & Proceeding No-** Rc. No. 2654/2016 (G&M), Dated: 14.06.2017 Existing Pit Dimension Pit I- 137m(L) * 78m(W)* 36m(D) Pit II- 70m(L) * 65m(W)* 40m(D)

	(v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	
	2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	**Noted and Agreed** Project Proponent obtained VAO certificate and there is no approved habitation within the radius of 300m & enclosed in Annexure.
	3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	Noted & agreed The enumeration of structure detailed in chapter 3 in Socio Economic Environment, Page No. 88.
	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, Page No. 54.
	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, Page No. 73.
	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: Northamalai RF – 3.7km – North West Nearest Sanctuary : Vettangudi Bird Sanctuary – 46.5km – South West
	7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept	Noted and Agreed It is an existing quarry the maximum depth of the mining reached up to 40m. For this mining plan period it is proposed 53m bgl. The slope stability study will be carried out after lease execution and the report will be submit along with Half Yearly Compliance Report.

	of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	
	8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level	Noted and Agreed It is an existing quarry the maximum depth of the mining reached up to 40m. For this mining plan period it is proposed 53m bgl. The slope stability study will be carried out after lease execution and the report will be submit along with Half Yearly Compliance Report.
	9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	Noted and agreed Proponent given under taking that the blasting will be carried out by the statutory person as per the MMR 1961.
	10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Noted and agreed Chapter-2 sub - 2.5.1Drilling & Blasting Parameters NONEL initiation based controlled blasting operation involving line drilling and muffle blasting in the proposed quarry Chapter-4, Sub 4.4.2 Common Mitigation Measures for Respective Individual Proposed Projects The blasting will be carried out during favorable atmospheric condition and less human activity timings by using nonelectrical initiation system
	11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	
	12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Noted & agreed Lessee: Thiru. R. Natesan Lease Period: 12.09.2017 to 11.09.2022 **District Collector's & Proceeding No-** Rc. No. 2654/2016 (G&M), Dated: 14.06.2017 Existing Pit Dimension Pit I- 137m(L) * 78m(W)* 36m(D) Pit II- 70m(L) * 65m(W)* 40m(D)
	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. There are no trees in inside lease area.
	18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	Noted and Agreed Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2, Table No.2.6 & 2.7, 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	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. Page no.54

	assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	
	21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	Noted and agreed Baseline Data were collected for pre-monsoon season March 2025 to May 2025. Details in Chapter No. 3, Page No. 34.
	22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Noted and agreed The Cumulative impact study due to mining operations are detailed in chapter 7, Page no. 131.
	23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Noted and agreed The lower part of the mine pit will act as temporary rainwater harvesting structure, besides Rainwater harvesting structure will be constructed near the mine office and labour shed after commencement of mining operation.
	24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3, Page no.: 19
	25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable There is no waste anticipated in this Rough Stone and gravel quarrying operation. The entire quarried out materials will be utilized (100%).
	26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.

	the effect that the proposed mining activities could be considered.	
	27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Noted and agreed The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
	28. Impact on local transport infrastructure due to the Project should be indicated.	Noted and agreed Traffic density survey was carried out to analyse the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Chapter No.2, Page No. 30.
	29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Noted and agreed It was proposed 750Nos of trees were planted as a part of greenbelt development programme all along the periphery of the lease applied area and approach roads and village roads.
	30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Noted and agreed After the completion of mining operation, the quarried-out land will be utilized as temporary storage reservoir. The details are given in the Chapter No.4
	31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Noted and Agreed
	32. The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the Appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Noted and agreed The varieties of plantations have been proposed as per the Appendix given in the ToR. It is a Proposed Lease. Around 750 trees are proposed to plant in the boundary area and in the village roads.
	33. Taller/one-year-old Saplings raised in appropriate size of bags; preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Noted and Agreed

	34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Noted and Agreed Disaster management Plan details in Chapter-7, Page No.129.
	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, Page No.127.
	36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Noted and Agreed Occupational Health impacts are given in the Chapter- 10. Page No.158.
	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, Page no. 88.
	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 750Nos of trees will be planted • The government will get revenue from the way of Seigniorage fee, royalty etc., Around 25 people will get direct employment through this project.
	41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional	Noted & agreed Lessee: Thiru. R. Natesan Lease Period: 12.09.2017 to 11.09.2022 **District Collector's & Proceeding No-** Rc. No. 2654/2016 (G&M), Dated: 14.06.2017 Existing Pit Dimension

	Office, Chennai (or) the concerned DEE/TNPCB.	Pit I- 137m(L) * 78m(W)* 36m(D) Pit II- 70m(L) * 65m(W)* 40m(D)
	42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	Noted and Agreed Details are discussed in chapter no 10, Table no 10.9, Page no. 153.
	43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and Agreed
SEIAA STANDARD CONDITION		
Cluster Management Committee		
1	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Noted and agreed Cluster management committee detailed in chapter 7, page no. 142. 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, Virudhunagar and the same will be update in every year.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	As per the committee agreement the blasting frequency will be discussed and carryout by the Mines Manager appointed by the proponents and the same will be updated in the committee minutes. Transport details in chapter-2.
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	The risk management plan and disaster management plan will be followed as per this EIA report.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the	Noted and agreed.

	committee in implementing the Environmental policy devised shall be given in detail in the EIA Report.	
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner	Noted and agreed A proper action plan regarding the restoration will be followed by the committee.
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	Noted and agreed.
Agriculture & Agro - Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	Noted and agreed As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present will be low. With proper mitigation measures, the project will be carried out to reduce the impact further to the level of negligence.
10	Impact on soil flora & vegetation around the project site.	Noted and agreed The vegetation details have been provided in chapter 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
11	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Noted and agreed The vegetation details have been provided in Chapter No 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
12	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem	Noted and agreed The EIA study has been carried out as per this ToR Condition. The details are given in the EIA report Chapter No.3
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted and agreed The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir.
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the all side of the lease area.
Forests		
15	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The nearest reserve forest, Northamalai R.F, is situated 3.7 km NW of 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,	Details of flora and fauna studies given in the Chapter No.3

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

26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Noted & agreed
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress.	Noted & agreed
Energy		
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	The mitigation measures to control the Noise, Air, Water and dust is given in the Chapter No.4.
Climate Change		
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and Temperature reduction including control of other emission and climate mitigation activities.	Details of carbon emission and mitigation activities are given int the Chapter No.4
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.	Noted & agreed
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	Noted & agreed
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Details in Chapter 2 mine closure plan
EMP		
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	The detailed Environmental Management plan has been prepared and given in the Chapter No.10
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan	Details in Green belt development in chapter 4
Risk Assessment		

35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	The risk assessment and its management plan for this project has been provided in Chapter No. 7.
Disaster Management Plan		
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	The disaster management plan for this project has been provided in Chapter No. 7.
Others		
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	The Project Proponent have obtained VAO certificate and it will be attached in the annexure.
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.lll dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and agreed
39	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Details of carbon emission and mitigation activities are given int the Chapter No.4

STANDARD TERMS OF REFERENCE		
1	Year-wise production details since 1994 should be given. clearly stating the highest production achieved in any one year prior to 1994.It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	Not applicable. This is Not a violation category project. This proposal falls under B1 Category (Cluster Condition)
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given	The applied land for quarrying is a Government Poramboke Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 1.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee	Noted & agreed.
4	All comer coordinates of the mine lease area, superimposed on a High-Resolution Imagery/topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)	Map showing – Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.4, page no. 15. Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3, page no. 6. Surface Features around the project area covering 10km radius – Figure No. 2.5, page no. 16. Geology map of the project area covering 10km radius - Figure No. 2.8, page no. 23 Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.9, page no. 24.
5	Information should be provided in Survey of India Topo sheet in l:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics	Map showing – Geology map of the project area covering 10km radius - Figure No. 2.8, page no. 23 Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.9, page no. 24.
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10, page no. 152.

	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	It is an opencast quarrying operation proposed to operate in Mechanized method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90^0 bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
9	The study area will comprise of l0 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	Noted & agreed. The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3, page No 20.
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	Not Applicable. There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, il any. in the project area. In the event of any contrary, claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees	Not Applicable. There is no Forest Land involved in the proposed project area. The proposed project area is a Government Poramboke Land.Approved Mining Plan is enclosed as Annexure Volume 1.
13	Status of forestry clearance for the broken-up area and virgin forest land involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not Applicable. The proposed project area does not involve any Forest Land.
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest fights) Act, 2006 should be indicated.	Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006.

15	The vegetation in the RF / PF areas in the study area, with necessary, details, should be given	No Reserve Forest within the Study Area.
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/ (existing as well as proposed), if any, within l0 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-l fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3 There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
20	Similarly. for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable. The project doesn't attract The C. R. Z. Notification, 2018.
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National	Not Applicable. There are no approved habitations within a radius of 300 meters.

	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 socioeconomic aspects should be discussed in the Report.	Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.
22	One season (non-monsoon) i.e., March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location ol sensitive receprors. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica. should be given.	Baseline Data were collected for One Season (Pre-Monsoon) March 2025 to May 2025 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3, Page no. 34.
23	Air quality modelling should be carried out lor prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly, indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view 9.6.1 Model. Details in Chapter No. 4, Page no. 107.
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total Water Requirement: 2.0KLD Discussed under Chapter 2, Table No 2.14, page no. 32.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project, should be provided.	Not Applicable. Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis. Drinking water will be sourced from the approved water vendors.

26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rain water harvesting proposed in the project, if any, should be provided.	Part of the working pit will be allowed to collect rain water during the spell of rain will be used for greenbelt development and dust suppression. The Mine Closure Plan is prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.
27	Impact of the Project on the water quality, both surface and groundwater. should be assessed and necessary safeguard measures, if any required, should be provided.	Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Chapter 4.
28	Based on actual monitored data, it may clearly be shown whether working will intersect. Ground water. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Not Applicable. The ground water table inferred 58-62m below ground level. The ultimate depth of quarry is 53m bgl. This proposal of 113m bgl will not intersect the ground water table, which is inferred from the hydro-geological studies carried out at the project site. Discussed under Chapter 3.
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Not Applicable. There is no stream, seasonal or other water bodies passing within the project area. Therefore, no modification/ diversion of water bodies is anticipated.
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Highest elevation of the project area is 113m (max) AMSL. The ultimate depth of quarry is 53m bgl. Water level of the area is 58-62m BGL
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	Greenbelt Development Plan is discussed under Chapter 4 & 7.
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be	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.

	covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No. 2.
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report	Discussed under Chapter 2, Mine Closure Plan is a part of Approved Mining Plan enclosed as Annexure Volume – 1.
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter 8.
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 38 people directly and 50 people indirectly. Details in Chapter 4.
38	Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Detailed Environment Management Plan for the project to mitigate the anticipated impacts described under Chapter 4 is discussed under Chapter 10.
39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the project.	The outcome of public hearing will be updated in the final EIA/AMP report
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending in any court against this project.
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	Project Cost is Rs. 1,02,87,000/- CER Cost is Rs.3,00,000/- The EMP budget detailed in chapter 10, table no. 10.9
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Details in Chapter 8.
44	Besides the above, the below mentioned general points are also to be followed: -	
a	Executive Summary of the EIA/EMP Report	Enclosed as separate booklet.

b	All documents to be properly referenced with index and continuous page numbering.	All the documents are properly referenced with index and continuous page numbering.
c	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	List of Tables and source of the data collected are indicated.
d	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project	Baseline monitoring reports are enclosed with This report in Chapter 3. Original Baseline monitoring reports will be submitted in the final EIA report during appraisal.
e	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
f	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA EMP Report.
g	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IAII(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted & agreed. Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IAII (I) Dated: 4th August, 2009 are followed.
h	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation	Noted & agreed.
i	As per the circular no. J-11011/618/2010-IAII(I) Dated: 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	Not Applicable.
j	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Surface Plan – Figure No. 2.5 – Page No. 16. Topography, Geological, Year-Wise Development Production Plan and Sections Plan - Figure No.2.10 – Page No. 26. Mine Closure Plan – Figure No.2.11 – Page No. 27.

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1.INTRODUCTION

1.0 PREAMBLE

The project proponent Thiru.R. Jaffer Ali applied for Rough stone and Gravel quarry over an extent of 1.47.5 Ha in S.F.Nos. 216/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State.

- Proponent applied for Rough stone and Gravel quarry lease on 16.11.2023
- Precise area communication letter was issued by the District Collector vide letter no. 1060/2023/Mines Dated: 11.01.2024
- The Mining plan has been prepared by the Qualified person and got approved by the Deputy Director vide letter no. 1060/23/(G&M) Dated: 22.03.2024
- The Mining plan has been approved for the quantity of 73,185m^3 of Rough stone up to a depth of 53m bgl for the period of Three years.

As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (Cluster quarries - 3 proposal and 1 Exiting quarry forming Cluster Category {Total Extent of the Cluster is 8.51.5Ha}- 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/540702/2025, Dated: 13.06.2025 and the ToR was Granted vide File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025

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

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

1.1 PURPOSE OF THE REPORT

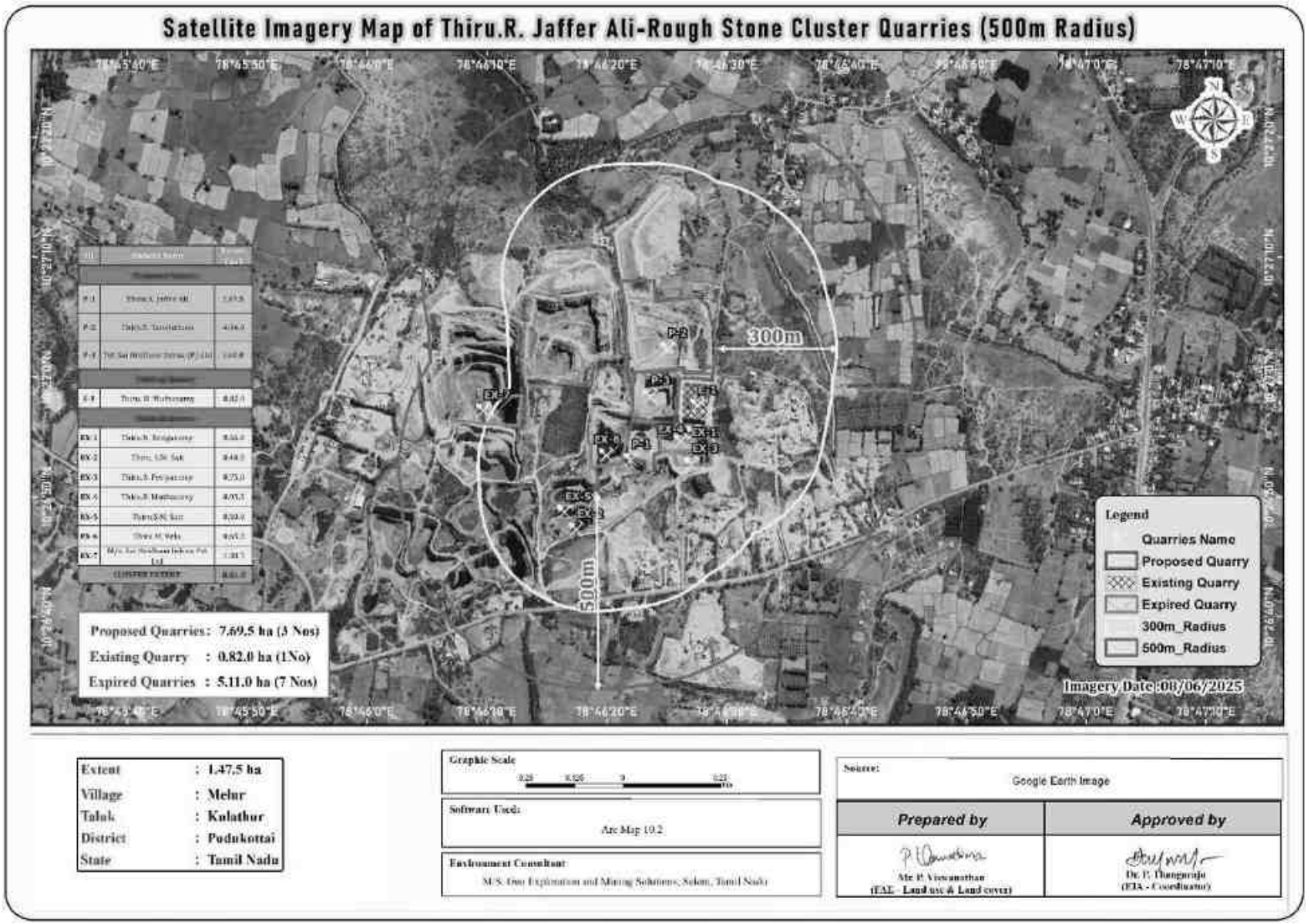
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1886 of 20thApril 2022, Mining Projects are classified under two categories i.e. A (>250 Ha) and B (≤ 250 Ha), and Schematic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

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

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

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

FIGURE 1.1: SATELLITE IMAGERY CLUSTER QUARRIES



1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.2.1 Identification of Project Proponent

TABLE 1.1: DETAILS OF PROJECT PROPONENT

Name of the Project Proponent	Thiru.R.Jaffer Ali
Address	S/o. Raja Mohammed, T.S.No. 9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001.
Mobile	+91 86430 88888 and 94431 65022
Email	rrbluemetals.pdkt.1@gmail.com
Status	Individual

1.2.2 Identification of Project

TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECT

Name of the Project	Thiru.R.Jaffer Ali Rough stone and Gravel quarry	
S.F. No.	216/1	
Extent	1.47.5 Ha	
Village Taluk and District	Melur Village, Kulathur Taluk, Pudukkottai District	
Land Type	It is a Government Poramboke land – The applicant has awarded tender cum auction from the Government.	
Toposheet No	58 – J/15	
Latitude between	10°26'50.2819"N to 10°26'56.2834"N	
Longitude between	78°46'19.1656"E to 78°46'24.5439"E	
Previous Lease Details	Lessee: Thiru. R.Natesan Lease Period: 12.09.2017 to 11.09.2022 Rc. No. 2654/2016 (G&M), Dated: 14.06.2017	
Existing Pit	40m (Avg)	
Elevation of the area	113m AMSL	
Mining Plan period	3 Years	
Proposed Depth of Mining	53m bgl	
	Rough Stone in m^3	
Geological Resources	2,89,920	
Mineable Reserves	73,185	
Year wise Production	73,185	
Peak Production	27,185	
Ultimate Pit Dimension	Pit I- 137m (L) X 78m (W) X 53m (D) bgl Pit II-70m (L) X 65m (W) X 48m (D)	
Water Level in the region	58m–62m bgl	
Method of Mining	Opencast Mechanized Mining Method is being carried out with 5.0-meter vertical bench with a bench width is not less than the bench height	
Topography	The lease applied area is flat terrain. The area has gentle sloping towards North-eastern side and altitude of the area is 113m (max) above Mean Sea level. The area is covered by 3m thickness of Top Soil and followed by Massive Charnockite which is clearly inferred from the existing quarry pit.	
Machinery proposed	Jack Hammer	4 Nos

	Compressor	1 No
	Excavator with Bucket and Rock Breaker	1 Nos
	Tippers	2 Nos
	Water sprinkler	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	25 Nos	
Project Cost	Rs. 1,04,93,000 /-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Tank	300m NE
	Tank	360m SW
	Tank	480m North
	Tank	740m NE
	Kavinaadu Kanmaai	7km South
	Vellaru River	9.6km South
Greenbelt Development Plan	Proposed to plant 750 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	670m – North East	
Nearest Reserve Forest	Northmalai RF – 3.7km – North West	
Nearest Wild Life Sanctuary	Vettangudi Bird Sanctuary –46.5km – South West	

Source: Approved Mining & Land Documents.

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 Nature and Size of the Project

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

The peak production of Rough stone is 27,185m^3 maximum in a year (91m^3 per day/ 8 Tippers per day considering 12m^3 per load). The depth of the mining is 53m bgl.

1.3.2 Location of the Project

- The project sites located in Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State.
- The lease applied area is located about 7km Northwest side of Pudukkottai, 12km Southern side of Kulathur town and 2km Southern side of Melur Village.

	19km		10km		2.0km	
Pudukkottai	⟶	Kulathur	⟶	Melur	⟶	Lease applied area
	North		South		South	

FIGURE 1.2: LOCATION MAP OF THE PROJECT SITE

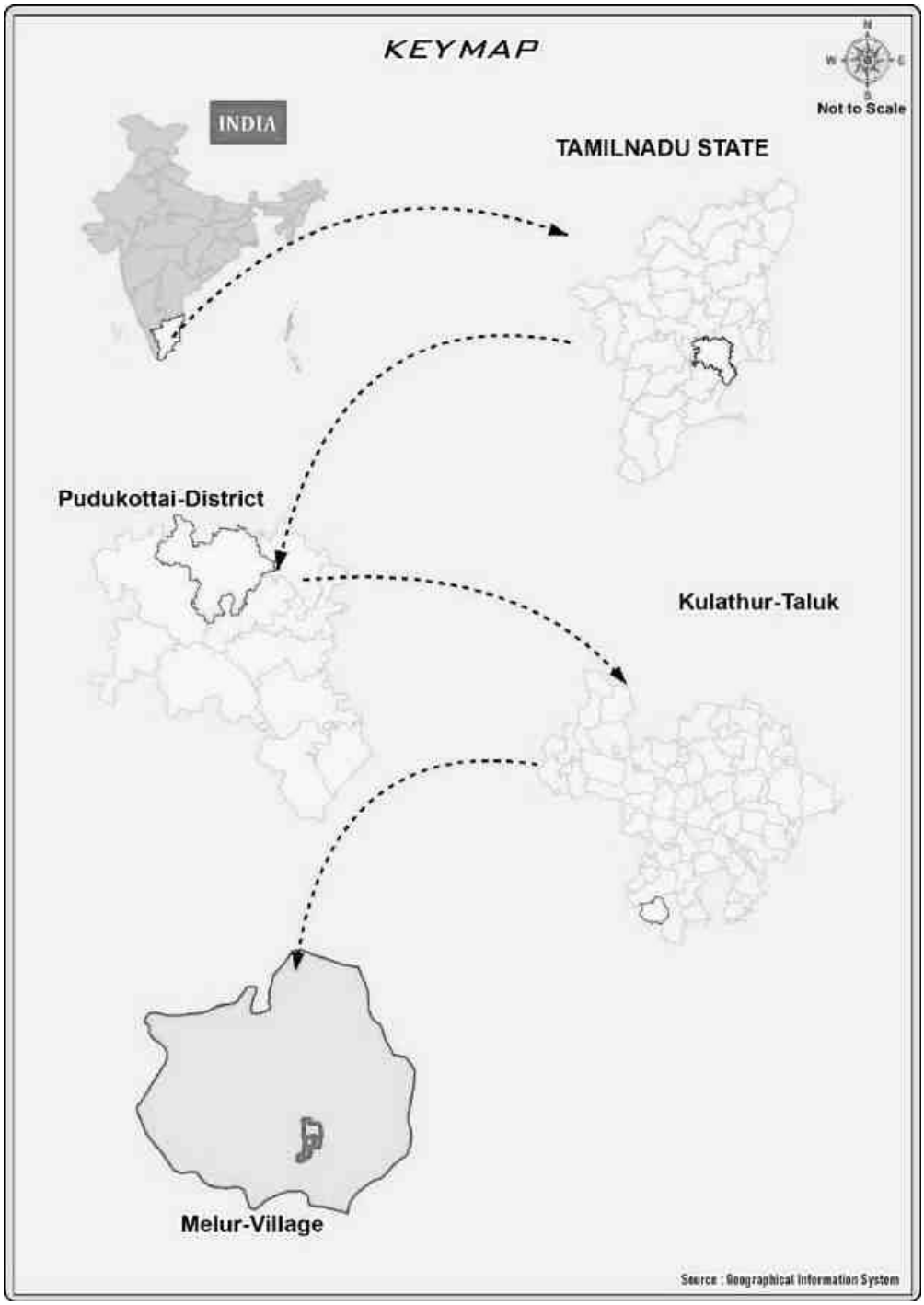


FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS

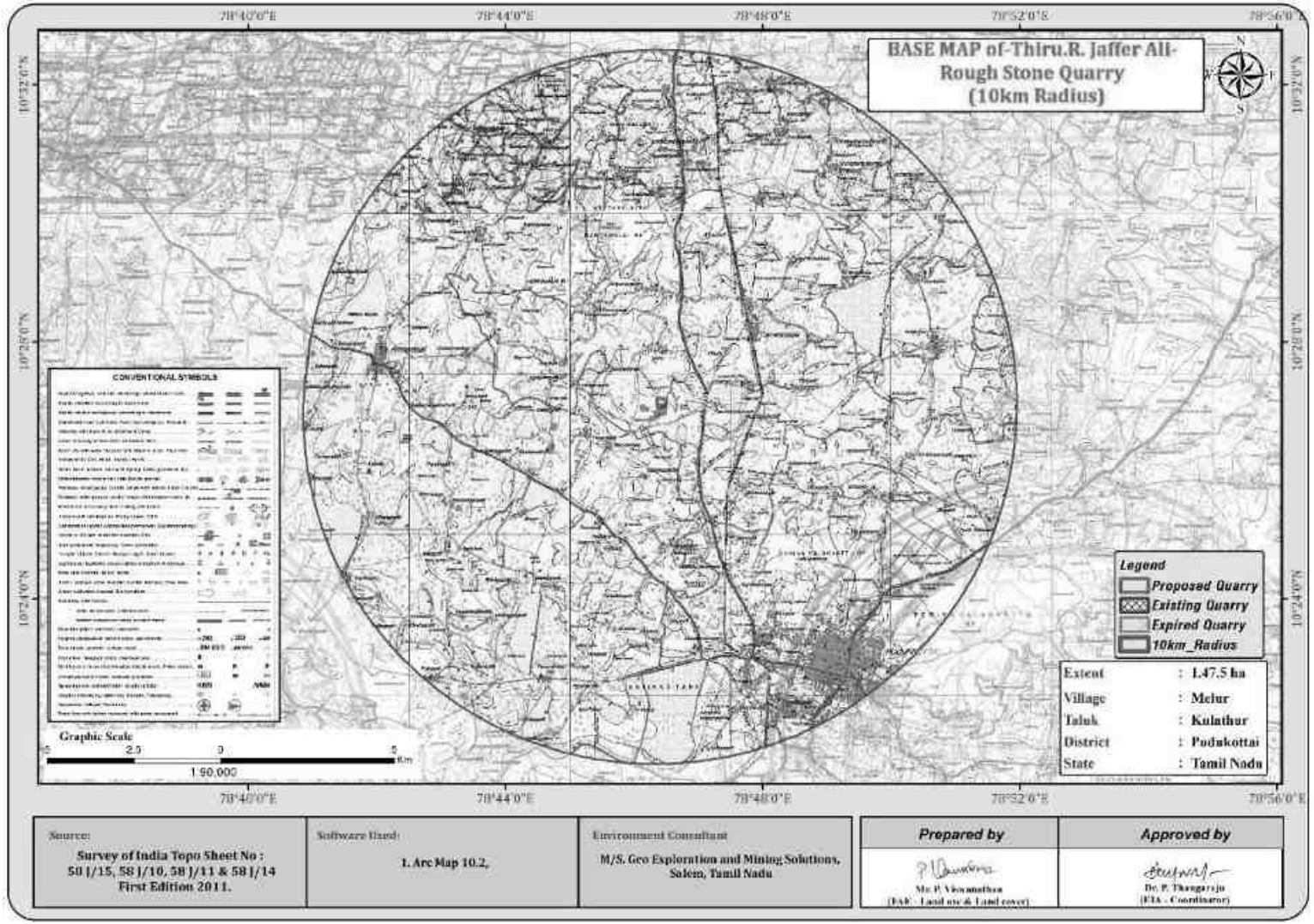
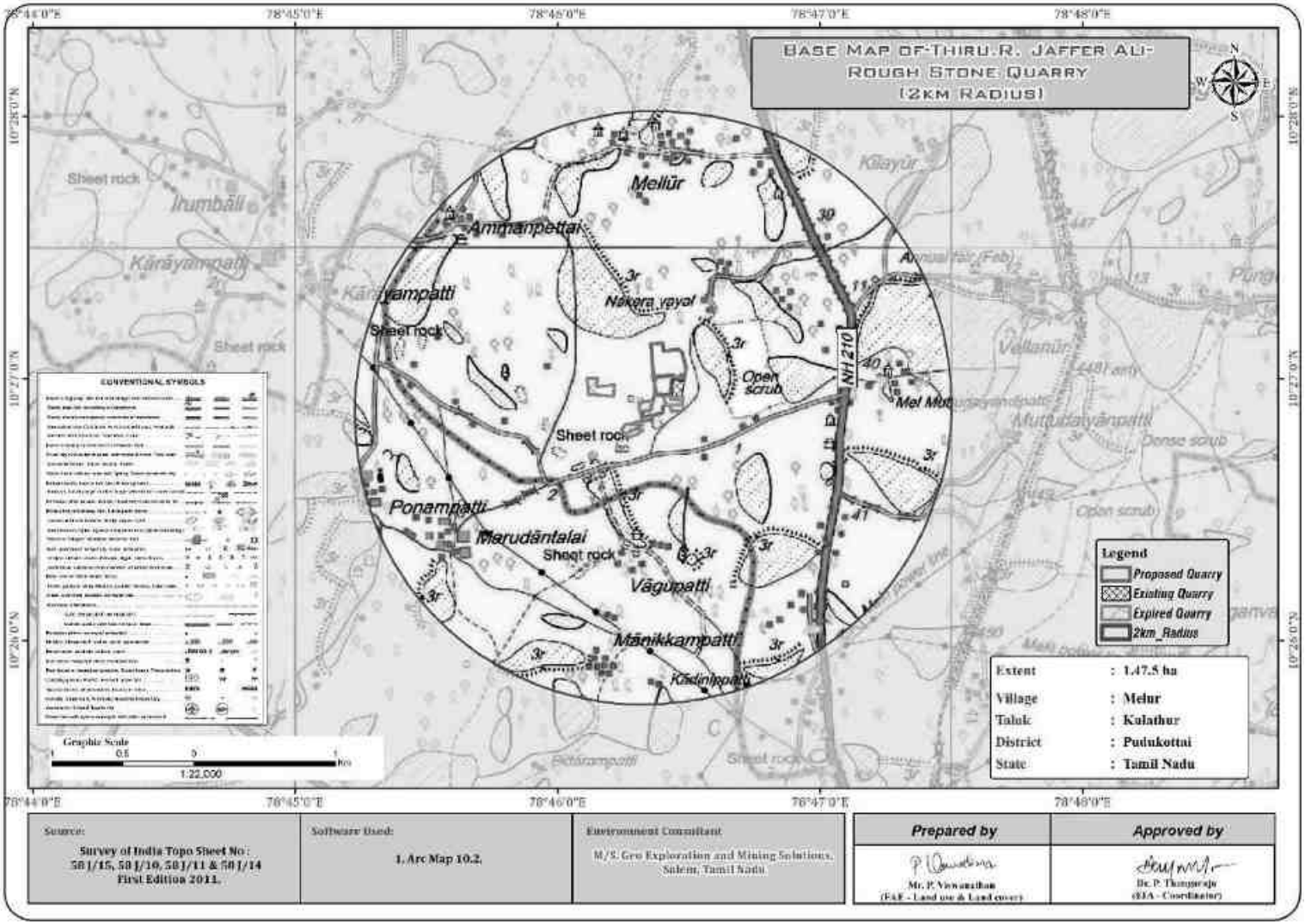


FIGURE 1.4: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS



1.4 ENVIRONMENTAL CLEARANCE

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

- Screening,
- Scoping
- Public consultation &
- Appraisal

SCREENING

- Proponent applied for Rough stone and Gravel quarry lease on 16.11.2023
- Precise area communication letter was issued by the District Collector vide letter no.Rc.No.1060/2023/Mines Dated: 11.01.2024
- The Mining plan has been prepared by the Qualified person and got approved by the Deputy Director vide letter no.Rc.No.1060/2023 (G&M) Dated: 22.03.2024
- The mining plan has been approved for the quantity of 73,185m^3 of Rough stone up to a depth of 53m bgl for the period of Three years.
- The proposed project falls under "B1" Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF& CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018

SCOPING:

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/540702/2025, Dated: 13.06.2025
- The proposal was placed in 585th SEAC meeting held on 03.07.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 856th SEIAA meeting held on 21.07.2025 and issued ToR vide File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025

PUBLIC CONSULTATION

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

APPRAISAL –

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

1.5 TERMS OF REFERENCE (ToR)

The ToR was issued by the SEIAA vide File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025. The Details of the ToR Compliance is given in the Page No. i-xx

1.6 POST ENVIRONMENT CLEARANCE MONITORING

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

1.7 GENERIC STRUCTURE OF EIA DOCUMENT

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

1.8 THE SCOPE OF THE STUDY

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

TABLE 1.3: ENVIRONMENT ATTRIBUTES

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

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

Source: Field Monitoring Data

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

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959.
- Obtained Precise Area Communication Letter asper Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance.
- The Mining Plan has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959.
- EIA Notification, 2006.
- ToR vide File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025

****

2. PROJECT DESCRIPTION

2.0 GENERAL

The Proposed Rough Stone and Gravel Quarry requires Environmental Clearance. There are 3 proposed, and 1 existing quarry forming a cluster; calculated as per MoEF& CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 8.51.5ha.

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

2.1 DESCRIPTION OF THE PROJECT

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

2.2 LOCATION OF THE PROJECT

- The project sites located in Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State.
- The lease applied area is located about 7km Northwest side of Pudukkottai, 12km Southern side of Kulathur town and 2km Southern side of Melur Village.

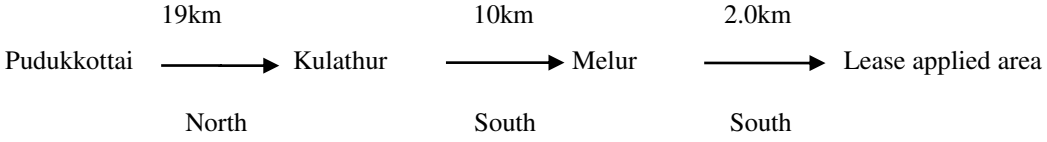


TABLE 2.1: SITE CONNECTIVITY

Nearest Roadway	National Highway – (NH-336) Pudukkottai - Trichy – 1.2km – East State Highway – (SH-71) Pudukottai- Manapparai – 3.3km – South West
Nearest Village	Panapatti – 1.20km – South West
Nearest Town	Pudukkottai – 7.5km – South East
Nearest Railway Station	Vellanur Railway Station – 3.3km – North East
Nearest Airport	Tiruchirappalli Airport – 35km – North West
Seaport	Thoothukudi Seaport – 198 km – South west

Source: Survey of India Toposheet

TABLE 2.2: CO-ORDINATES– PROJECT BOUNDARY

Corner Nos.	Latitude	Longitude
1	10°26'50.2819"N	78°46'19.3029"E
2	10°26'52.5162"N	78°46'19.1656"E
3	10°26'52.8397"N	78°46'21.2303"E
4	10°26'56.2834"N	78°46'22.1903"E
5	10°26'56.0227"N	78°46'24.2973"E
6	10°26'53.7387"N	78°46'24.5439"E
7	10°26'53.4327"N	78°46'24.0317"E
8	10°26'52.1347"N	78°46'23.9374"E
9	10°26'51.8366"N	78°46'22.6846"E
10	10°26'51.7632"N	78°46'22.4599"E
11	10°26'51.6848"N	78°46'21.3589"E
12	10°26'50.5344"N	78°46'21.6140"E

Source: Approved Mining Plan

FIGURE 2.1: TOPOGRAPHICAL VIEW OF PROJECT AREA



FIGURE 2.1-A: FENCING AND GREEN BELT PHOTOGRAPHS

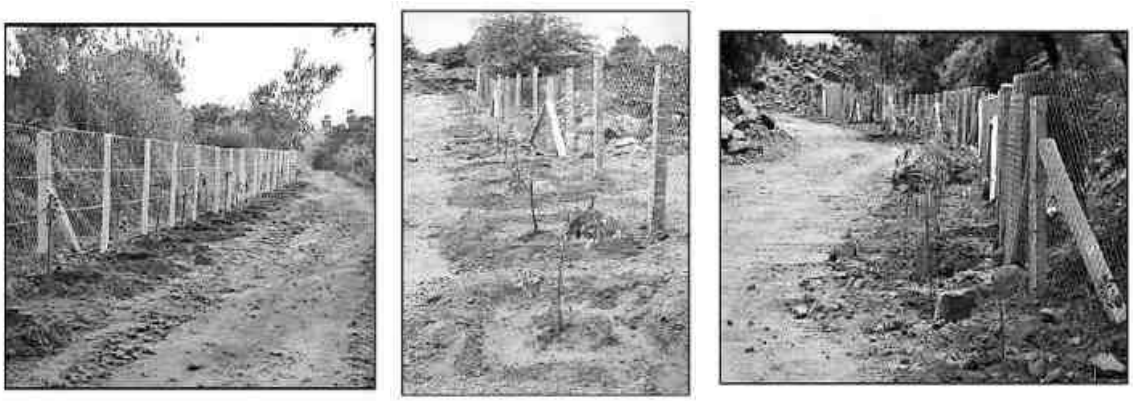
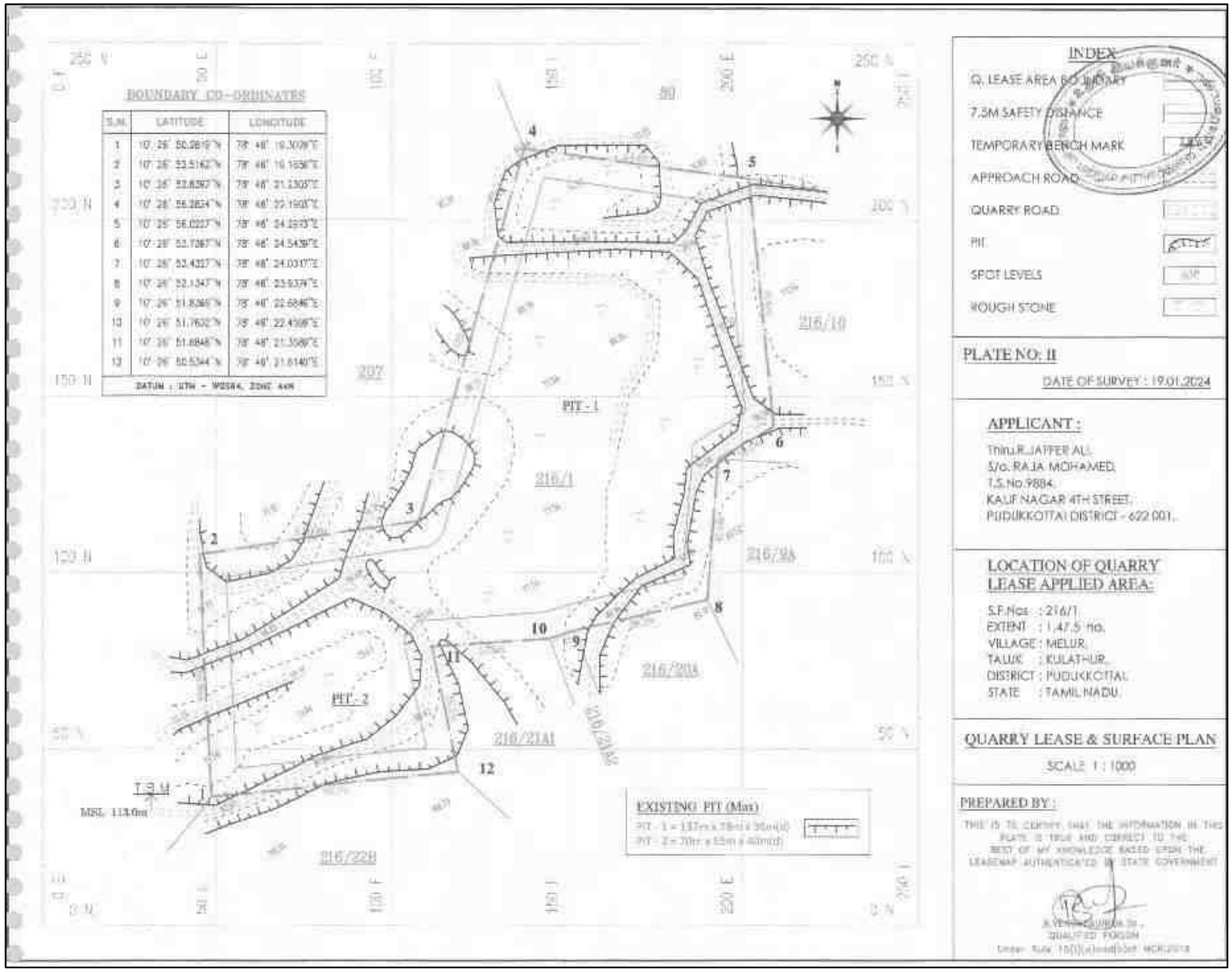


FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA



Source: Google Earth Imagery

FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN



Source: Approved Mining Plan

FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

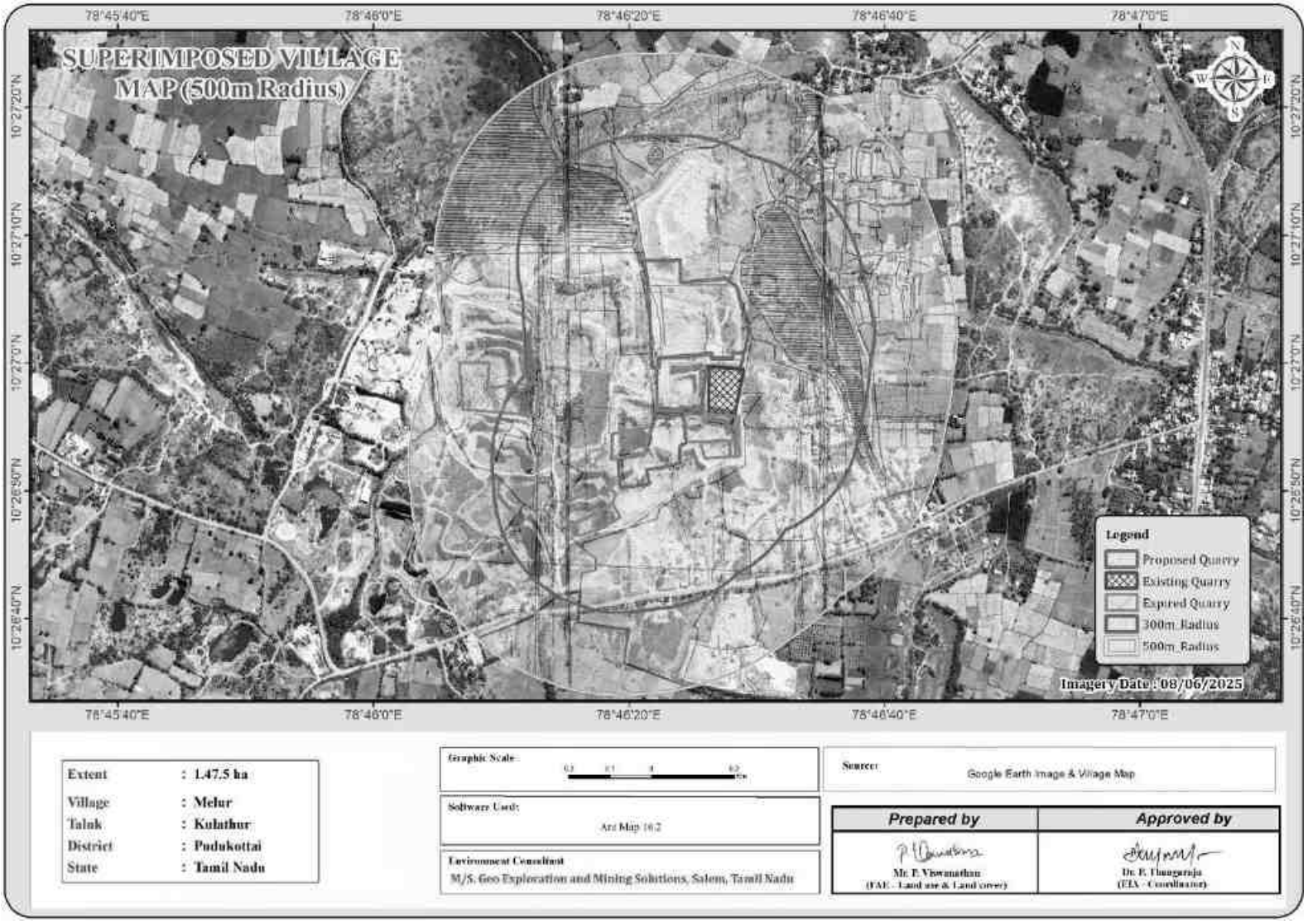


FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS

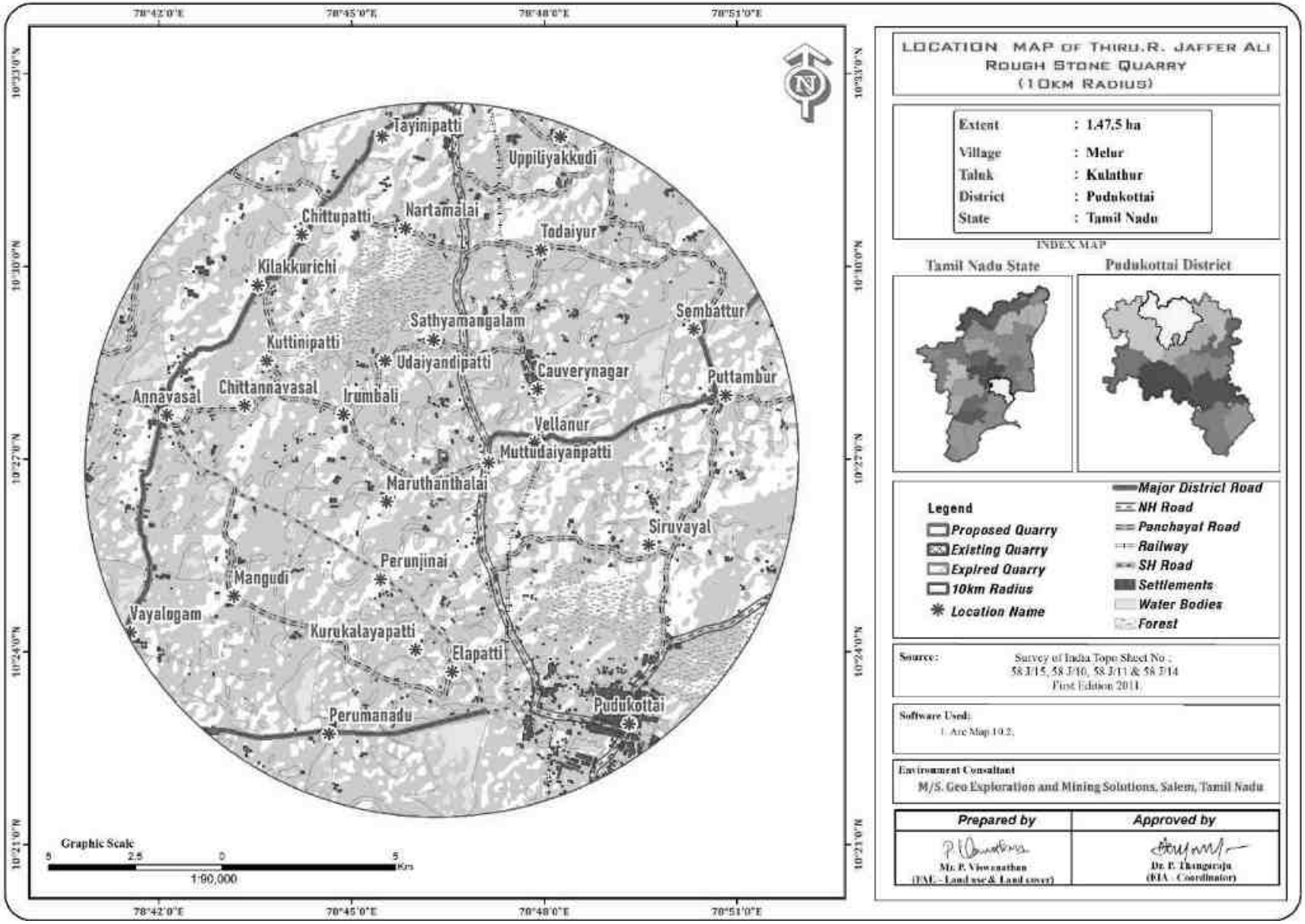


FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 5 KM RADIUS

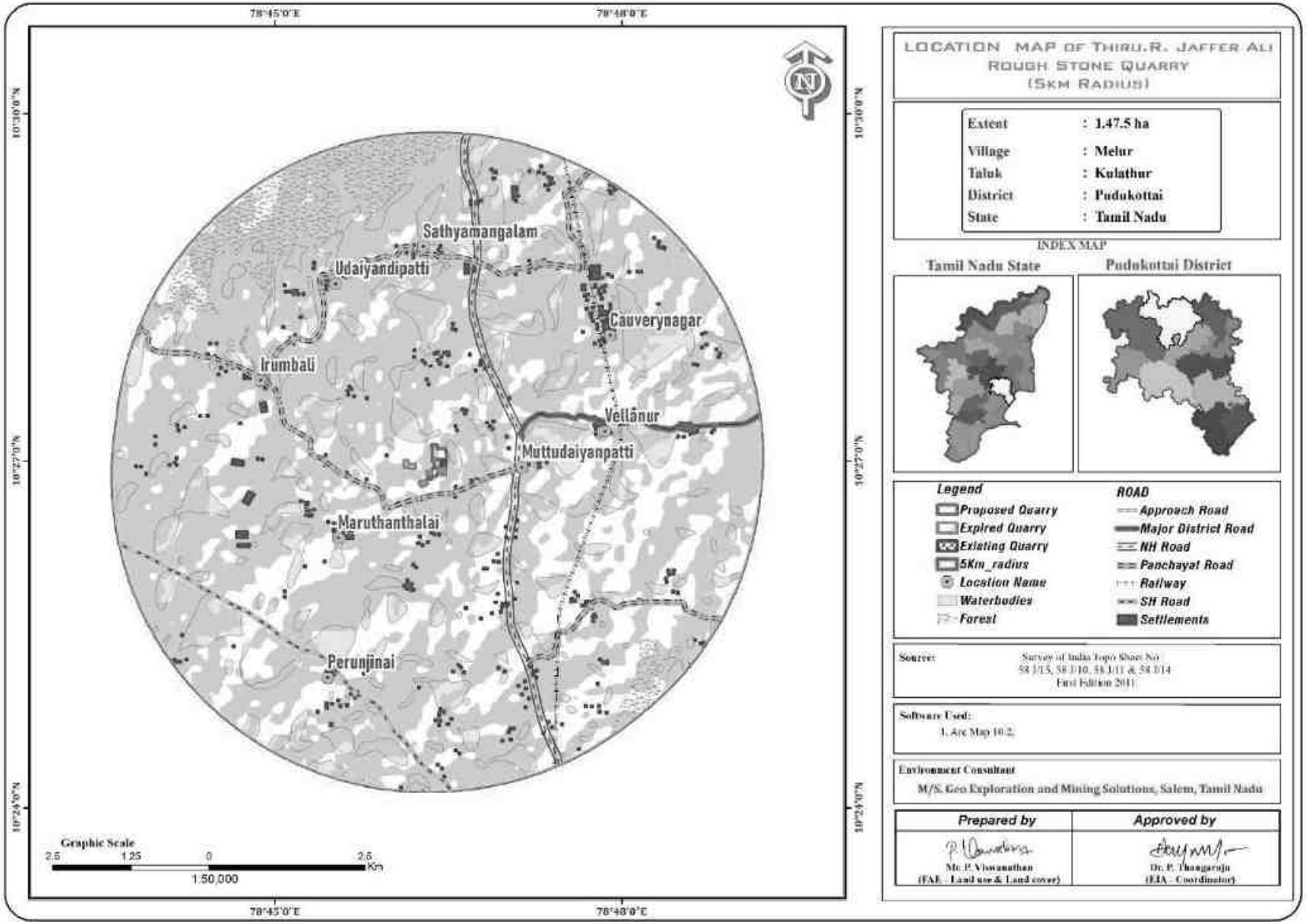
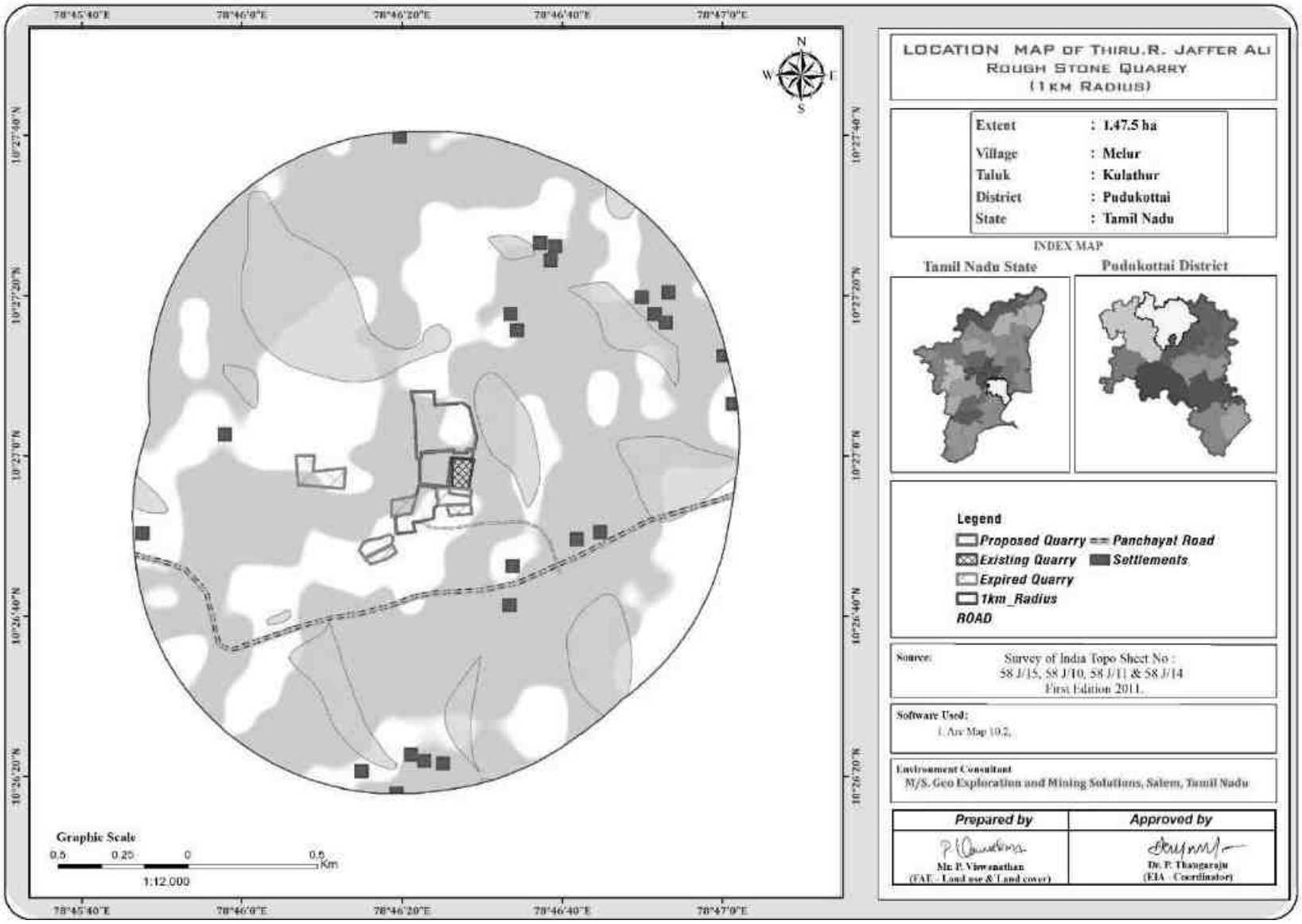


FIGURE 2.7: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS



2.2.1 Project Area

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

TABLE 2.3: LAND USE PATTERN

Description	Present area (Ha)	Area at the end of Lease period (Ha)
Area Under Quarrying	1.47.5	1.47.5
Site Services	Nil*	Nil@
Roads	Nil*(0.02.0)	Nil*(0.02.0)
Green Belt	Nil	Nil#
Unutilized Area	Nil	Nil
Grand Total	**1.47.5**	**1.47.5**

* - Quarry roads will be carried out in the quarry pit. Hence, the area ultilization is covered area under quarry

@Site service will be constructed to applicant own patta land

#Green Belt Development will be carried out in haul roads and panchayat roads.

Source: Approved Mining Plan

TABLE 2.4: PRODUCTION DETAILS

PARTICULARS	DETAILS
	Rough Stone in m^3
Geological Resources	2,89,920
Mineable Reserves	73,185
Year wise Production	73,185
Peak Production	27,185
Revised Scheme of Mining Period	3 Years
Number of Working Days	300 Days
Production per day	81
No of Lorry loads	7
Total Depth of Mining	53m BGL

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 N40°E – S40°W with dipping towards SE70°.

Regional stratigraphic sequence:

↑ AGE FORMATION

Recent - Quaternary formation (Gravel)

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

Archaean - Charnockite Peninsular Gneiss complex

The geological formation of Pudukkottai District comprises of the hard rocks formed in the Archean age to the sedimentary deposits of the Quaternary period. Geologically the entire study area can be divided into hard rock and sedimentary rock regions. The hard rocks are found on the western side and sedimentary formation towards the eastern direction of the study area. About 45 per cent of the study area is under hard massive formation of Archean age and the rest 55 per cent comprises of the sedimentary formation ranging from Pre-Cambrian to Quaternary period.

Source: https://pudukkottai.nic.in/document-category/mineral-survey-report/

Geomorphology

The district is characterized by an undulating topography with residual hills in the northern, western and southern parts of the district; where as in the eastern part of the district is a flat terrain consisting of alluvial plains. The elevation of the terrain of the western part of the area is about 125 m above MSL, whereas towards coast it is about 1m above MSL.

The geomorphic evolution of the area is mainly controlled by denudational, structural and fluvial processes. The evolution of various landforms has been governed mainly by the varying resistance of geological formations to these processes. Various landforms are occurring in the area, such as erosional plains, residual hills, pediments, buried pediments and deltaic plain. The shallow pediments possess poor to moderate yields with thin soil cover. The buried pediments and deltaic plain possess good ground water potential.

2.3.2 Local Geology:

The various types of hard rocks found here are Charnockites, Hornblende Gneiss, Biotite Gneiss, Granite and Quartzite's. Various types of Gneiss rocks are found in the western part of Pudukkottai District. Charnockites and granites rocks are mostly found in the central part including the blocks of Kunnandavarkoil, Thirumayam and the southern parts of Pudukkottai Block. The various types of Gneiss rocks are found in the western part of the study area, consisting the blocks of Viralimalai, Annavasal and Ponamaravathy. Quartzite deposits are found in small quantity in some parts of Annavasal and Thirumayam Blocks. In the Blocks of Kulathur, Thirumayam and parts of Pudukkottai crystalline rocks are found.

The sedimentary deposits found in this region consist of shaly sandstone, sand, clay and gravels. The sedimentary deposits formed during the Tertiary period consist of laterite, arenaceous and argillaceous sandstone clay. These deposits are found in the Blocks of Arantangi, Gandarvakottai, Alangudi and Thiruvarankulam. Crecateous deposits consisting of clay, limestone, sand stone and clayey sand stone are found in some parts of Gandarvakottai, Thirumayam and Pudukkottai. Unconsolidated coastal alluvial deposits consisting of sand gravel and silt are found along the river bed.

Source: https://pudukkottai.nic.in/document-category/mineral-survey-report/

2.3.3 Hydrogeology

Geology Geologically the entire district can be broadly classified into hard rock and sedimentary regions.

a) Hard rock regions Around 45% of this district is underlain by hard massive formations of Archaean age. Granitic gneiss, hornblende biotite gneiss, charnockites, pegmatites and quartzites are the various types of rocks encountered in the hard rock region. Kulathur, major part of Thirumayam and parts of Pudukottai taluk are occupied by crystalline rocks.

b) Sedimentary regions the area occupied by sedimentary formations belonging to 1. Cretaceous 2. Tertiary and 3. Recent ages fall on the eastern half of the district. The total extent occupied by sedimentary formations amounts to 55% of the total geographical area of the district.

c) Tertiary deposits of Pudukottai district consists of laterite, arenaceous and argillaceous sand stone and clay.

The State Ground and Surface Water Resources Data Centre, during the course of investigation has drilled more than 92 boreholes spread over the entire district to find out the nature and behaviour of the subsurface material and their water holding and water yielding capability. The weathering zone in the district varies from 7 to 22 metres below ground level.

Aquifer Systems:

a) Hard rock

The thickness of aquifer in Pudukottai district varies between 12 m to 45 m below G.L. The intensity and degree of weathering and fracture development in the crystalline 5 formations play a vital role in the development of intergranular porosity. Whenever gneissic formations occur deep and very high intensity of weathering is observed. While in charnockite area weathering is moderate. The aquifer parameter in hard rock region of the district is observed to be as follows:

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

Parameters	Range
Well yield in LPM	1-2 lpm
Transmissivity (T) m^2 /day	5-25 m^2 /day
Permeability (K) m/day	3-16 m/day

b) Sedimentary formations

i) *Cretaceous formations*

The cretaceous formations are the oldest among the sedimentary formations occurring in the district, cropping out along a narrow belt of 6-8 kms width adjoining the archaean complex. These formations are found in the eastern parts of Thirumayamtaluk and nearly in the half of pudukottai, alangudi and Gandarvakottai. Taluks, consists mainly of coarse-grained sand, clay, clayey sand stone associated with kankar and gravel. The aquifer parameter values of the cretaceous formations are given below.

Parameters	Range
Well yield in LPM	3-4 lpm
Transmissivity (T) m^2 /day	9-47 m^2 /day
Permeability (K) m/day	0.5-2.80 m/day

ii*) Tertiary formations:*

The tertiary formations encountered in this district are of Miocene and Pilocene ages and are found in the entire Aranthangiand Avudaiyarkoiltaluks and also along the eastern parts of the pudukottai and alanguditaluks consisting mainly of sandstones, clay bound sands, sandy clay, shales, etc., The aquifer parameters values of tertiary formations are given below:

Parameters	Range
Well yield in LPM	5-10 lpm
Transmissivity (T) m2 /day	89-157 m^2 /day

Permeability (K) m/day	1.5-3 m/day

TABLE 2.5 GROUND WATER LEVEL VARIATIONS OF PUDUKOTTAI DISTRICT

Jan 2017	May 2017	Jan 2018	May 2018	Jan 2019	May 2019	Jan 2020	May 2020	Jan 2021	May 2021	5 Years Pre Monsoon Average	5Years Post Monsoon Average
30.2	35.5	33.8	32.2	41.0	43.9	38.7	25.3	30.3	22.3	27.0	30.4

Source: **https://www.twadboard.tn.gov.in/content/Pudukottai**

FIGURE 2.8: REGIONAL GEOLOGY MAP

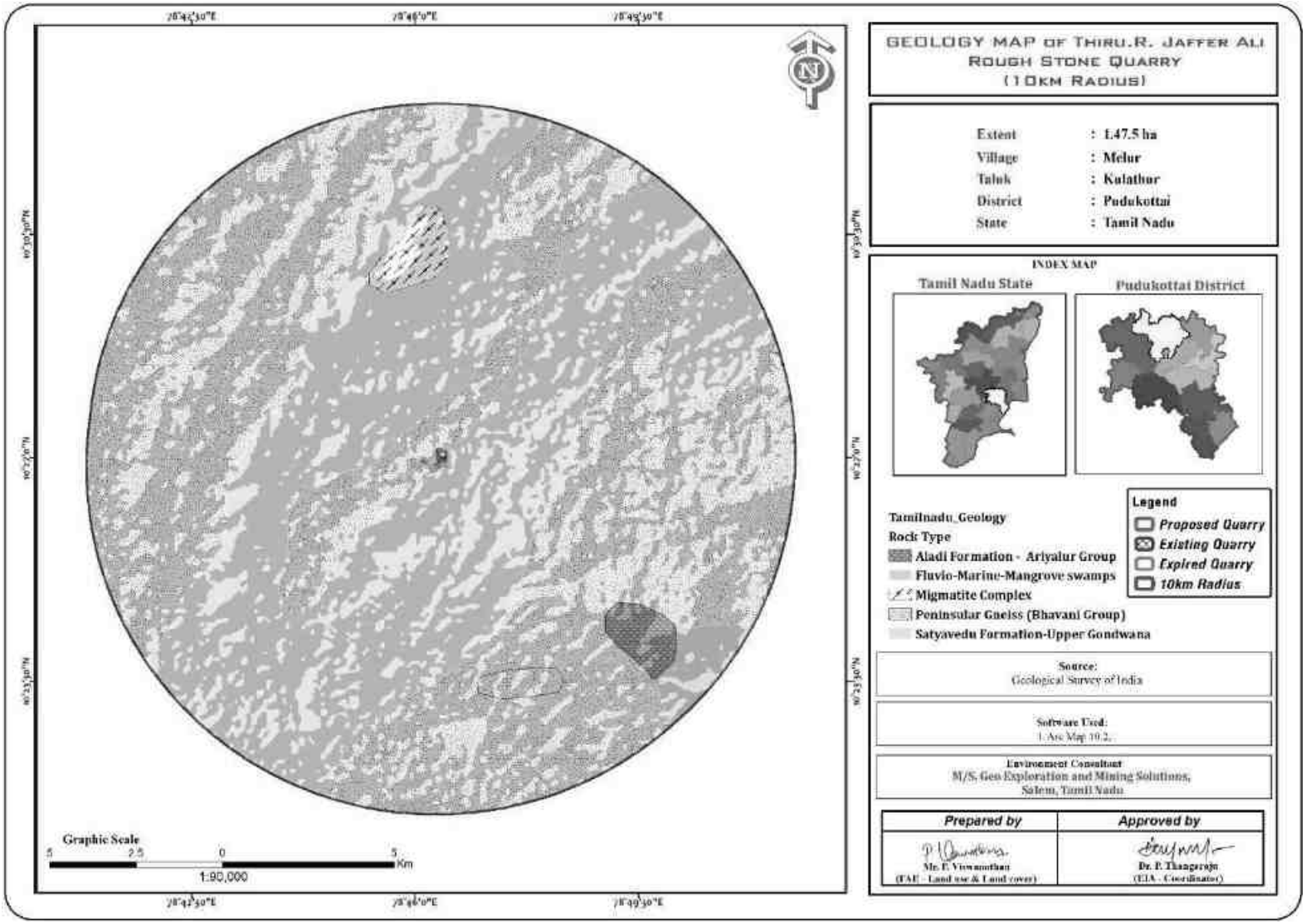
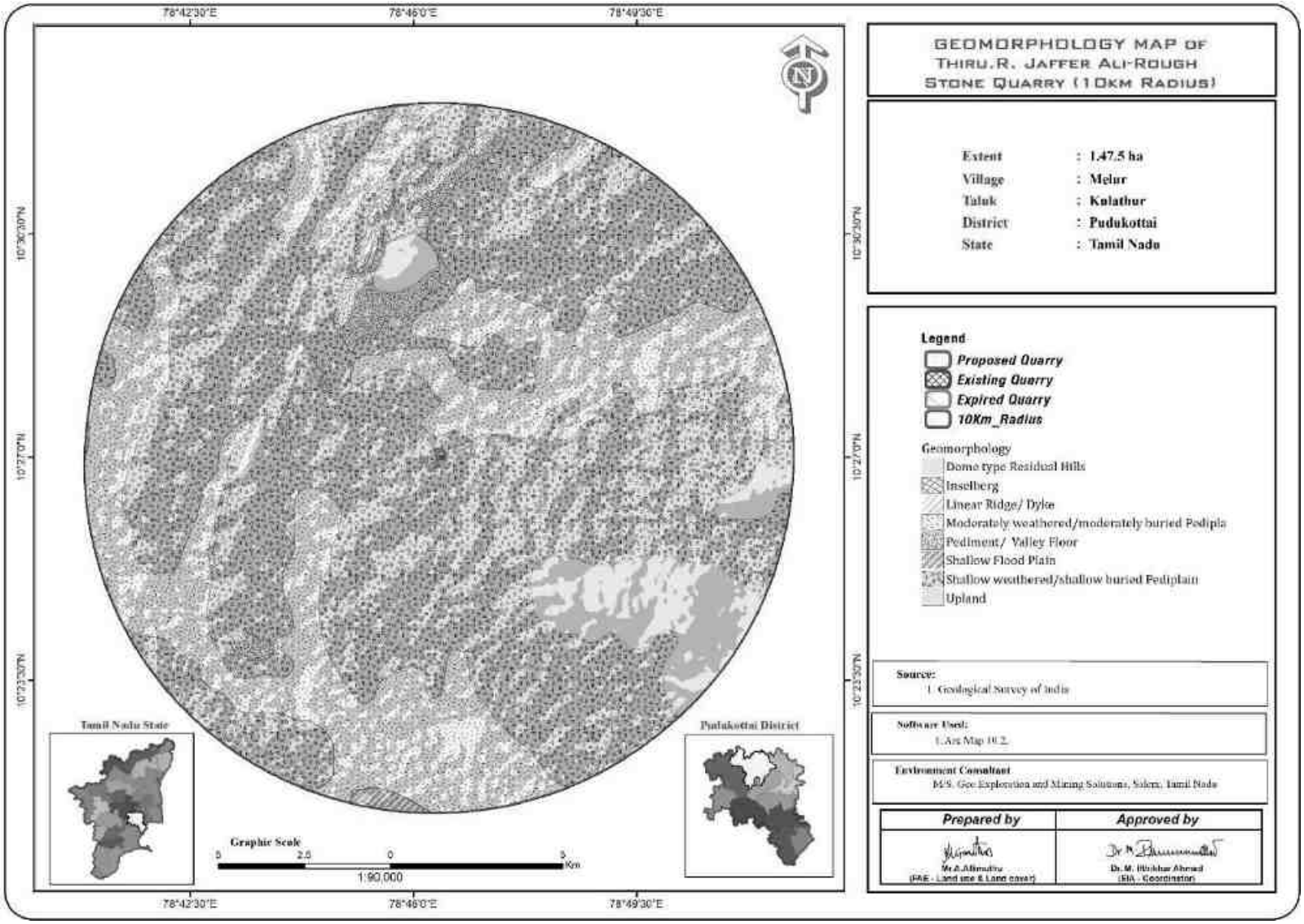


FIGURE 2.9: GEOMORPHOLOGY MAP



2.4 RESOURCES AND RESERVES

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

TABLE 2.6: RESOURCES AND RESERVES

Description	Rough Stone in m^3
Geological Resource in m^3	2,89,920
Mineable Resource in m^3	73,185

Source: Approved Mining Plan

TABLE 2.7: YEAR-WISE PRODUCTION PLAN

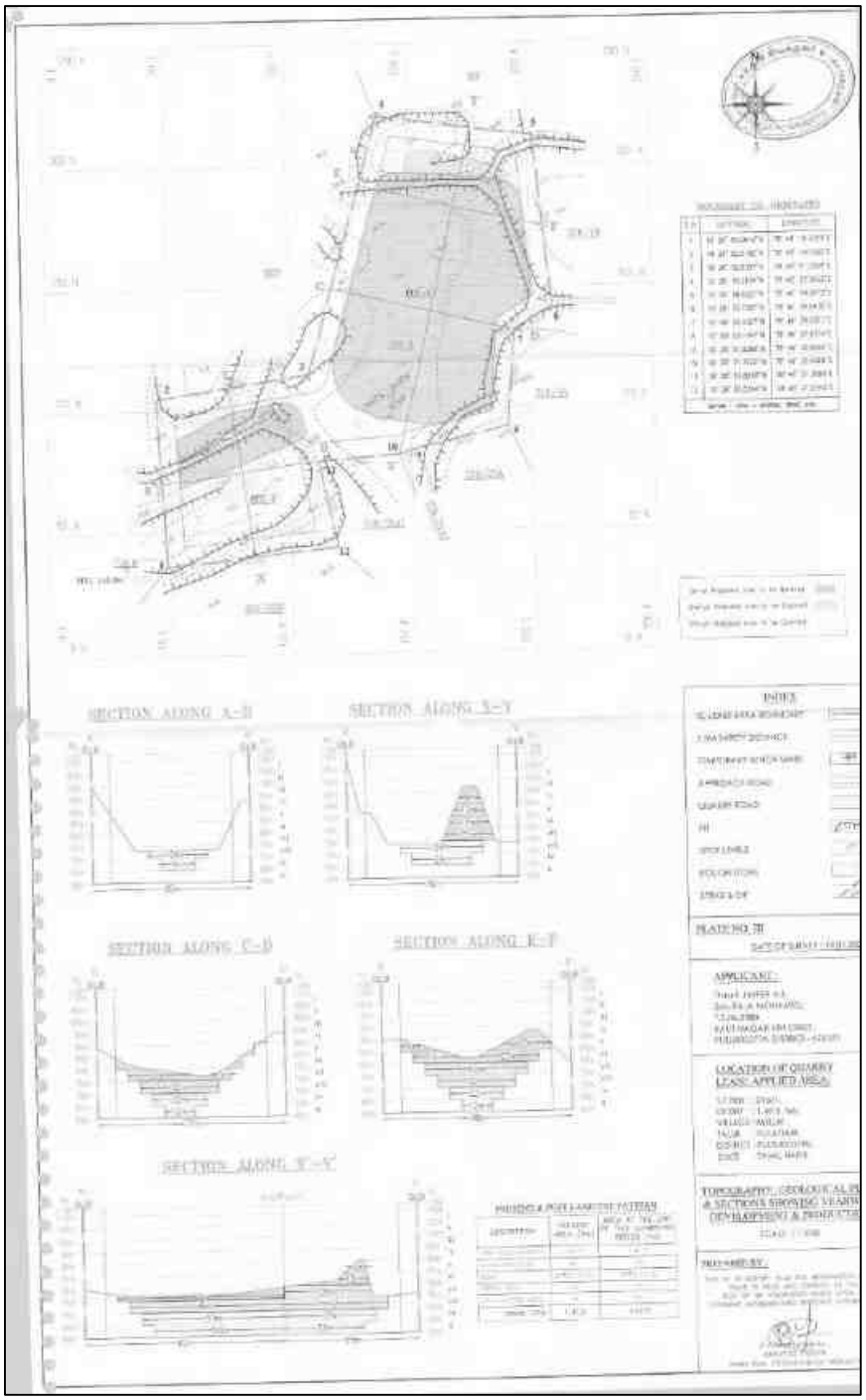
YEAR	Rough Stone in m^3
I	27,185
II	24,520
III	21,480
TOTAL	**73,185**

Source: Approved Mining Plan

Disposal of Waste

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

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



Source: Approved Mining Plan

Conceptual Mining Plan/ Final Mine Closure Plan

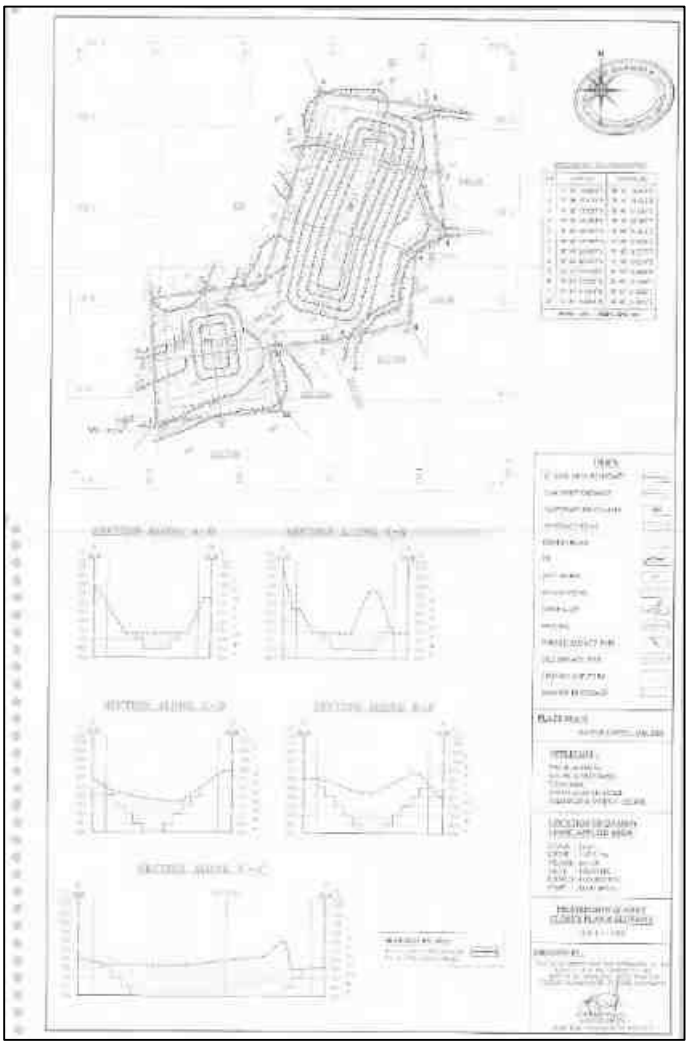
The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

TABLE 2.8: ULTIMATE PIT DIMENSION

Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max)
Pit- I	137	78	53m
Pit- II	70	65	48m

Source: Approved Mining Plan

FIGURE 2.11: CLOSURE PLAN AND SECTIONS

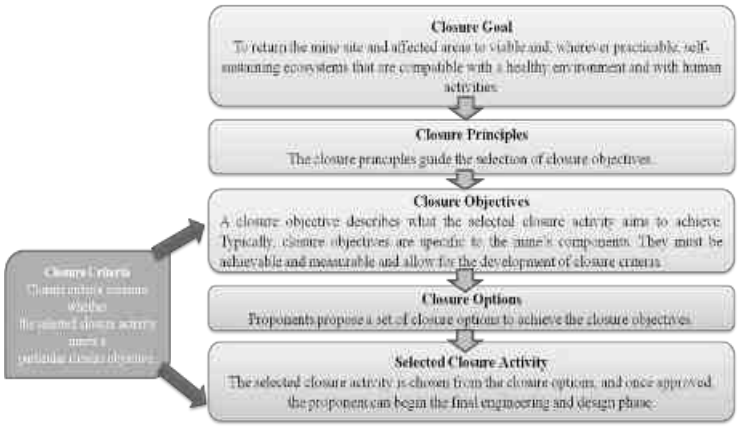


Source: Approved Mining Plan

- At the end of life of mine, the excavated mine pit / void will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt developed along the safety barrier and top benches and temporary water reservoir will enhance the ecosystem

- Mine Closure is a process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.
- The principal closure objectives are for rehabilitated mines to be physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/ non-contaminating, and capable of sustaining an agreed post-mining land use.

Closure Objectives –



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

Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents
- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD

- Native species will be planted in 3 row patterns on the boundary barriers and 1st bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved
- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure
- There will be a positive change in the environmental and ecology due to the mine closure

2.5 METHOD OF MINING

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

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

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

2.5.1 Drilling & Blasting Parameters

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

Spacing	–	1.0m
Burden	–	0.75 m
Depth of hole	–	1.5 m
Charge per hole	–	0.50 – 0.75kg
Powder factor	–	6.0 tonnes/kg
Diameter of hole	–	32 mm
Production Capacity	=	$81m^3$ of Rough stone per day
Spacing X Burden X Depth	=	1.0m X 0.75m X 1.5m = $1.125m^3$
		= $1.125m^3$ X 2.75 (Bulk Density) = 3.09Ts per hole

hence for the production of $81m^3$ (251Ts) = 41Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 19 kg of Explosives will be utilized maximum considering the peak production

Type of Explosives to be used –

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

Storage of Explosives

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

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

2.5.2 Extent of Mechanization

TABLE 2.9: PROPOSED MACHINERY DEPLOYMENT

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammer	4	1.2m to 2.0m	Compressed air
2	Compressor	1	400psi	Diesel Drive
3	Excavator with Bucket and Rock Breaker	1	300 HP	Diesel Drive
4	Tippers	2	20 Tonnes	Diesel Drive
6	Water Sprinkler	1	4000 ltrs	Diesel Drive

Source: Approved Mining Plan

2.6 GENERAL FEATURES

2.6.1 Existing Infrastructures

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

2.6.2 Drainage Pattern

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

2.6.3 Traffic Density

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

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

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

TABLE.2.10: TRAFFIC SURVEY LOCATIONS

Station Code	Road Name	Distance and Direction	Type of Road

TS-1	Muthadaiyanpatti-Maruthanthalai	700m SE	Panchayat Road
TS-2	Muthadaiyanpatti-Maruthanthalai	2km SW	Panchayat Road

Source: On-site monitoring by GEMS FAE & TM

TABLE 2.11: EXISTING TRAFFIC VOLUME

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	30	90	40	40	150	75	205
TS2	20	60	30	30	100	50	140

Source: On-site monitoring by GEMS FAE & TM

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

TABLE 2.12: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT

Transportation of Rough Stone & Gravel per day		
Capacity of trucks	No. of Trips per day	Volume in PCU
20 tonnes	15	45

FIGURE.2.12: MINERAL TRANSPORTATION ROUTE MAP

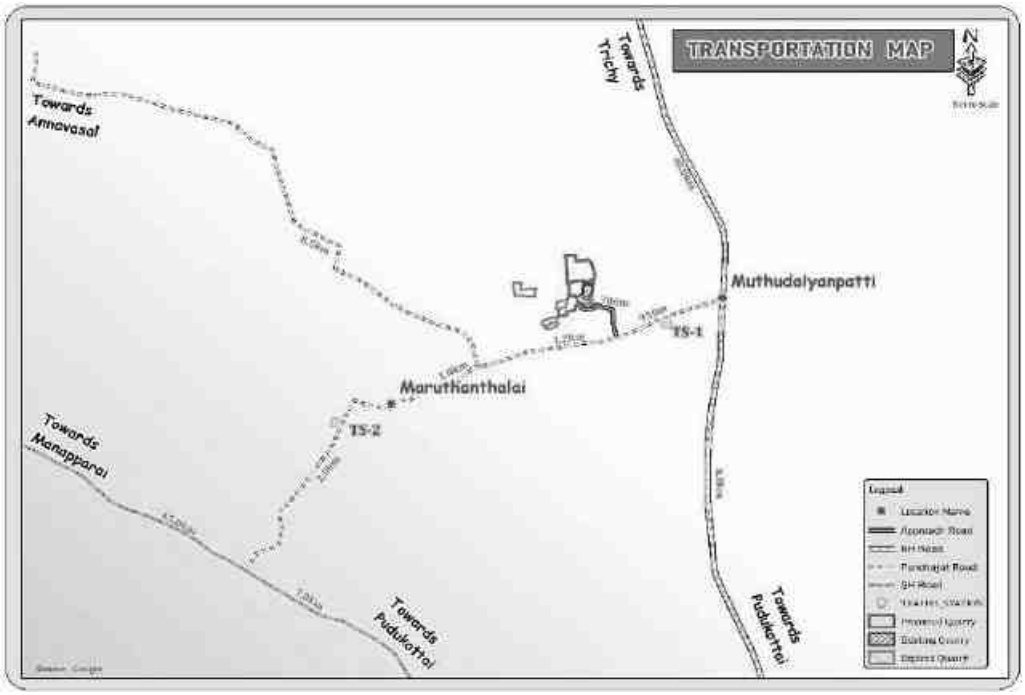


TABLE 2.13: SUMMARY OF TRAFFIC VOLUME

Route	Existing Traffic volume in PCU	Incremental traffic due to the project	Total traffic volume	Hourly Capacity in PCU as per IRC – 1960 guidelines
TS1	205	45	250	1500
TS2	140	45	185	1200

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

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

2.6.4 Mineral Beneficiation and Processing

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

2.7 PROJECT REQUIREMENT

2.7.1 Water Source & Requirement

Detail of water requirements in KLD as given below:

TABLE 2.14: WATER REQUIREMENT FOR THE PROJECT

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

Source: Prefeasibility report

2.7.2 Power and Other Infrastructure Requirement

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

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

2.7.3 Fuel Requirement

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

Rough stone:

Per hour Excavator will consume = 16 liters / hour

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

Rough stone quantity = 73185/20 = 3660hours

Diesel consume = 19,723hours x 16 liters

Total diesel consumption = **58,560** Liters of HSD will be utilized for Rough stone

Total diesel consumption = **58,560** Liters of HSD will be utilized for entire project life.

2.7.4 Project Cost

The Environmental Management plan has been prepared considering the mode of working, Safety of the employees and Monitoring periods the total Cost is Rs. 1,04,93,000/.

2.8 EMPLOYMENT REQUIREMENT:

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

TABLE 2.15: PROPOSED MANPOWER DEPLOYMENT

Designation	No of persons
a) Supervisory Category	
Geologist	1
b) Skilled Labour	
Mines Foreman	1
Mate/Blaster	1
Excavator Operator	1
Truck driver	3
Water sprinkler Driver	1
Jack hammer operator	8
c) Unskilled labour	
Security	2
Labour & Helper	2
Cleaner & Co-operator	5
Total	**25**

Source: Approved Mining Plan & Pre-Feasibility report.

2.9 PROJECT IMPLEMENTATION SCHEDULE

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

TABLE 2.16: EXPECTED TIME SCHEDULE

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

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

3. DESCRIPTION OF ENVIRONMENT

3.0 GENERAL

The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering **March to May 2025** by CHENNAI METTEX LAB PRIVATE LIMITED with CPCB guidelines for the following attributes-

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

Environmental data has been collected with reference to cluster quarries by CHENNAI METTEX LAB PRIVATE LIMITED

Study Area

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

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

Study Period

The baseline study was conducted during the Post monsoon season i.e., **March to May 2025**

Study Methodology

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

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

TABLE 3.1: MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING

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

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

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

3.1 LAND ENVIRONMENT

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

3.1.1 Land Use/ Land Cover

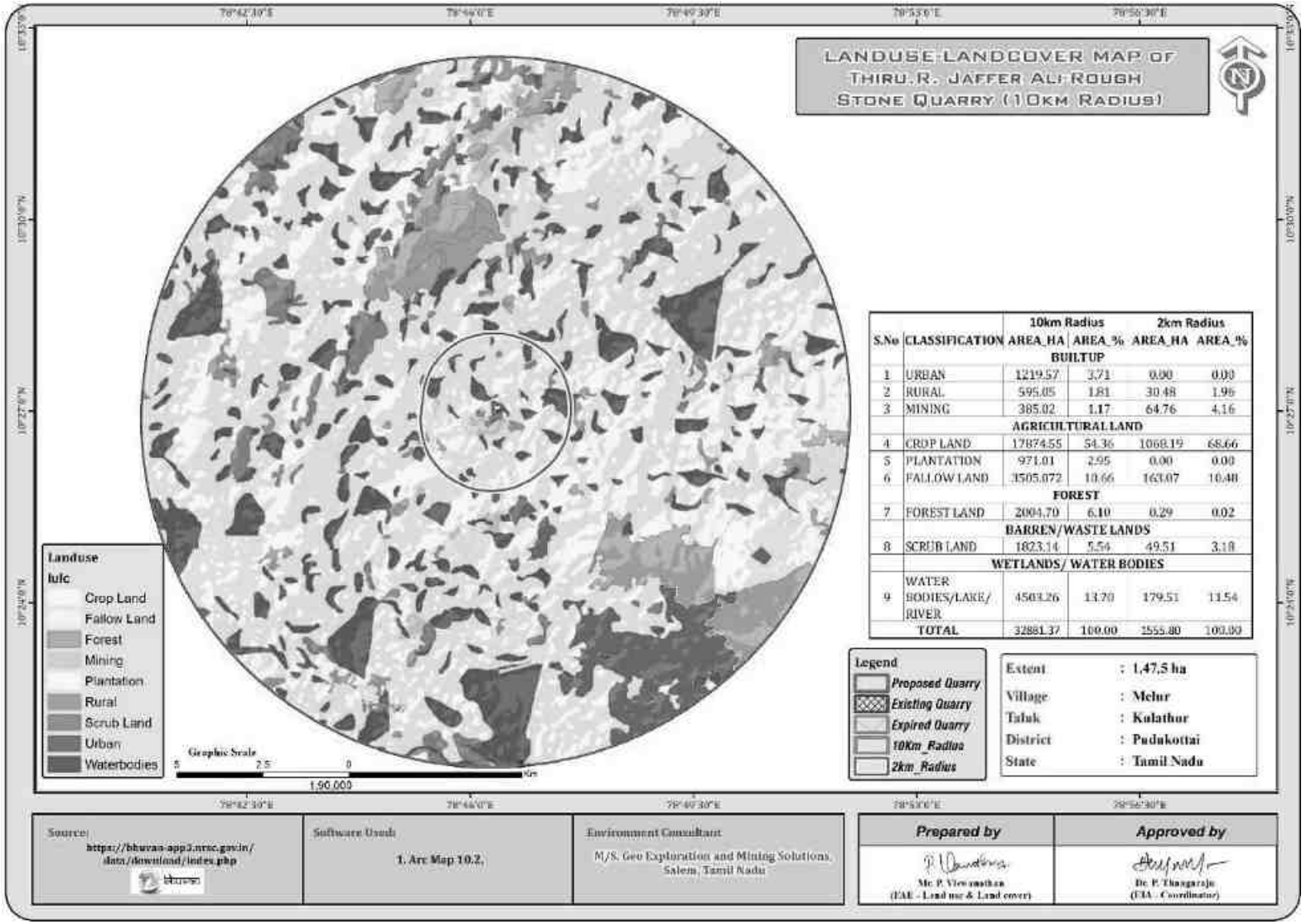
A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through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

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

S.No	CLASSIFICATION	10km Radius		2.0km Radius	
		AREA_HA	AREA_%	AREA_HA	AREA_%
BUILTUP					
1	URBAN	1219.57	3.71	0.00	0.00
2	RURAL	595.05	1.81	30.48	1.96
3	MINING	385.02	1.17	64.76	4.16
AGRICULTURAL LAND					
4	CROP LAND	17874.55	54.36	1068.19	68.66
5	PLANTATION	971.01	2.95	0.00	0.00
6	FALLOW LAND	3505.072	10.66	163.07	10.48
FOREST					
7	FOREST LAND	2004.70	6.10	0.29	0.02
BARREN/WASTE LANDS					
8	SCRUB LAND	1823.14	5.54	49.51	3.18
WETLANDS/ WATER BODIES					
9	WATER BODIES/LAKE/RIVER	4503.26	13.70	179.51	11.54
TOTAL		32881.37	100.00	1555.80	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

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



S.No	CLASSIFICATION	10km Radius AREA_HA	10km Radius AREA_%	2km Radius AREA_HA	2km Radius AREA_%
	BUILTUP				
1	URBAN	1219.57	3.71	0.00	0.00
2	RURAL	595.05	1.81	30.48	1.96
3	MINING	385.02	1.17	64.76	4.16
	AGRICULTURAL LAND				
4	CROP LAND	17874.55	54.36	1068.19	68.66
5	PLANTATION	971.01	2.95	0.00	0.00
6	FALLOW LAND	3505.072	10.66	163.07	10.48
	FOREST				
7	FOREST LAND	2004.70	6.10	0.29	0.02
	BARREN/WASTE LANDS				
8	SCRUB LAND	1823.14	5.54	49.51	3.18
	WETLANDS/ WATER BODIES				
9	WATER BODIES/LAKE/ RIVER	4503.26	13.70	179.51	11.54
	TOTAL	32881.37	100.00	2555.80	100.00

FIGURE 3.3: PHYSIOGRAPHIC MAP 10KM RADIUS

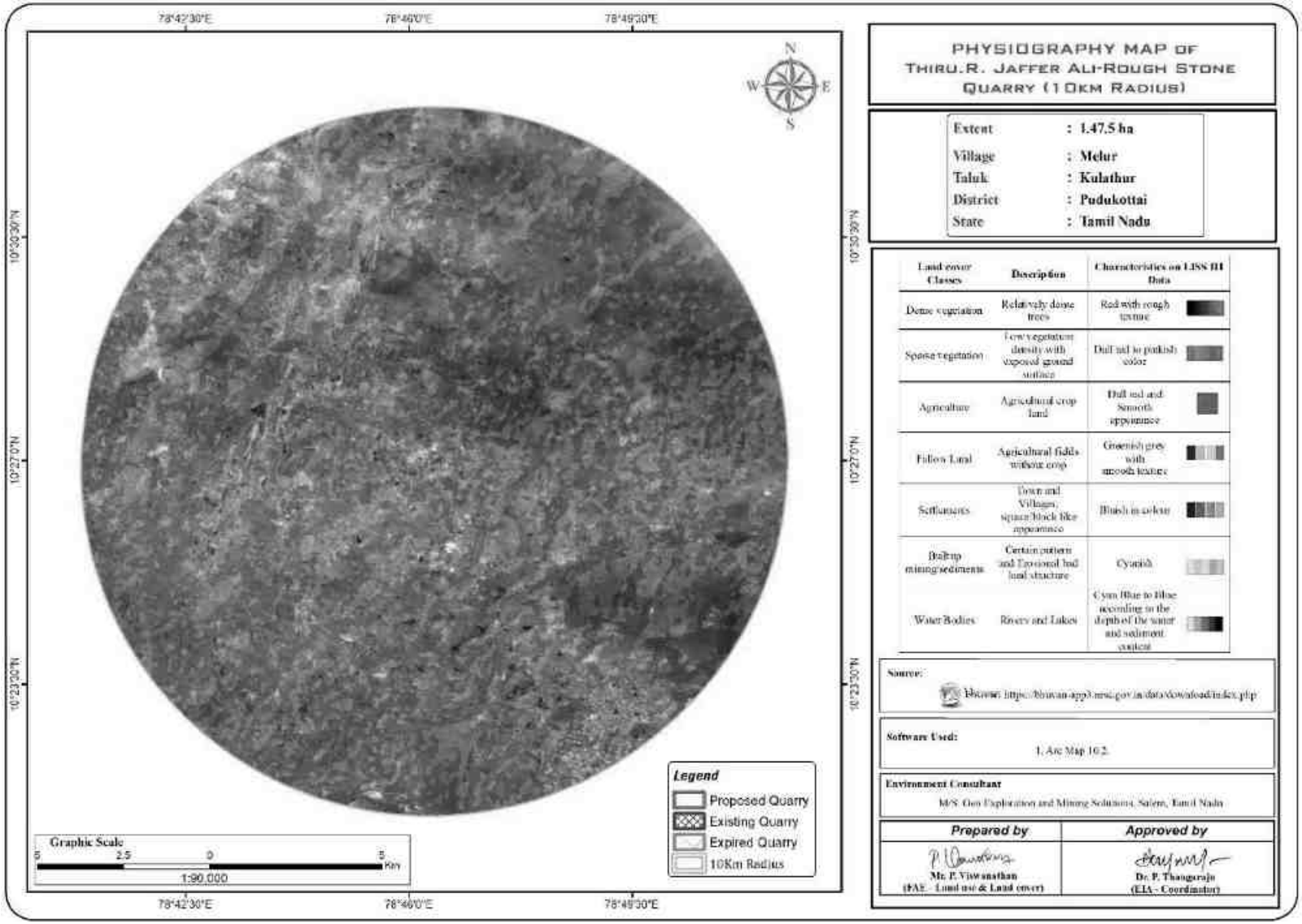
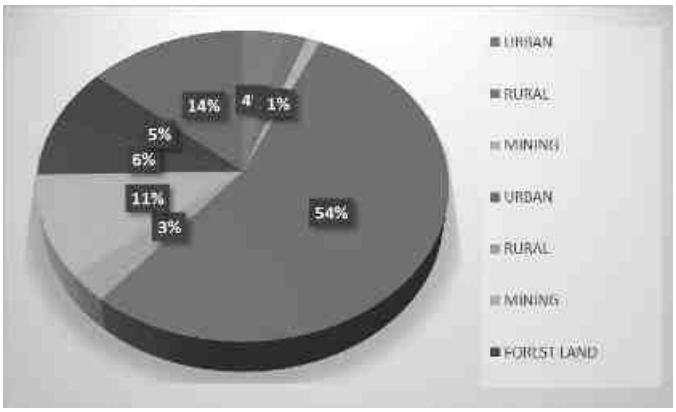


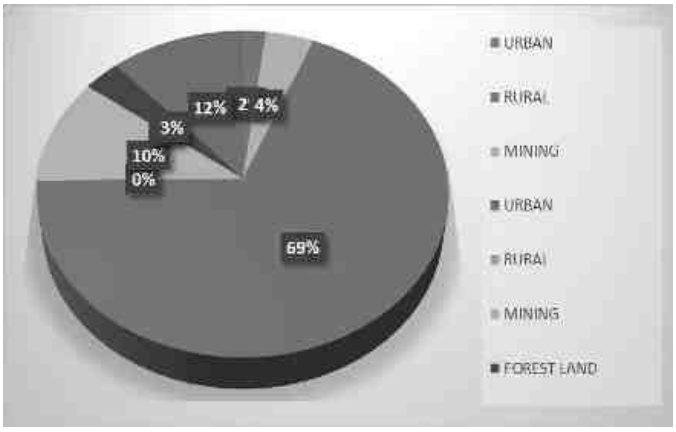
FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND COVER - 10KM RADIUS IN AREA_%



From the Table No.3.2, Pie Diagram 3.1 and Land Use Map (Fig No.3.2) is inferred that the majority of the land in the study area is Agriculture land (includes crop land – 67.97%, Forest – 6.10% and Baren land – 5.54% & in Build Up Land, mining area occupied 1.17%.

The total mining area within the study area is 385.02ha i.e., 1.17%. The cluster area of 8.51.5ha contributes about 2.21% of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment

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



From the Table No.3.2, Pie Diagram 3.1-A and Land Use Map (Fig No.3.2) is inferred that the majority of the land in the study area is Agriculture land (includes crop land – 79.14%, plantation – Nil and Scrub land – 3.18%) & in Build Up Land, mining area occupied 4.16%.

The total mining area within the study area is 64.76ha i.e., 4.16%. The cluster area of 8.51.5ha contributes about 13.14% of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment.

3.1.2 Topography

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

3.1.3 Drainage Pattern of the Area

The drainage pattern of the area is dendritic – sub dendritic. Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land. There are no streams, canals or water bodies crossing within the project area.

3.1.4 Seismic Sensitivity

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

3.1.5 Environmental Features in the Study Area

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

TABLE 3.3: DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE CLUSTER

Sl.No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	Vettangudi Bird Sanctuary	46.5km – South West
2	Reserved Forest	Northamalai RF	3.7km – North West
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10km Radius
4	Critically Polluted Areas	None	Nil within 10km Radius
5	Mangroves	None	Nil within 10km Radius
6	Mountains/Hills	None	Nil within 10km Radius
7	Notified Archaeological Sites	None	Nil within 10km Radius
8	Industries/ Thermal Power Plants	None	Nil within 10km Radius
9	Defence Installation	None	Nil within 10km Radius

Source: Survey of India Toposheet

TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE

Sl.No	NAME	DISTANCE & DIRECTION
1	Tank	300m NE
2	Tank	360m SW
3	Tank	480m North
4	Tank	740m NE
5	Kavinaadu Kanmaai	7km South
6	Vellaru River	9.6km South

Source: Village Cadastral Map and Field Survey

3.1.6 Soil Environment

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

The objective of the soil sampling is -

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

TABLE 3.5: SOIL SAMPLING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S-1	Near Project Area	100m NW	10°26'56.89"N 78°46'18.22"E
2	S-2	Muthudaiyanpatti	1.2km NE	10°27'1.66"N 78°47'7.03"E
3	S-3	Near Crusher	380m SE	10°26'42.16"N 78°46'30.78"E
4	S-4	Maruthanthalai	1.8km SW	10°26'23.95"N 78°45'25.91"E
5	S-5	Sathyamangalam	3.9km NW	10°29'3.88"N 78°46'11.96"E
6	S-6	Kurujalayapatti	4.6km South	10°24'20.68"N 78°46'12.92"E

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

Methodology –

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

TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION

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

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

Soil Testing Result –

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

FIGURE 3.4: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS

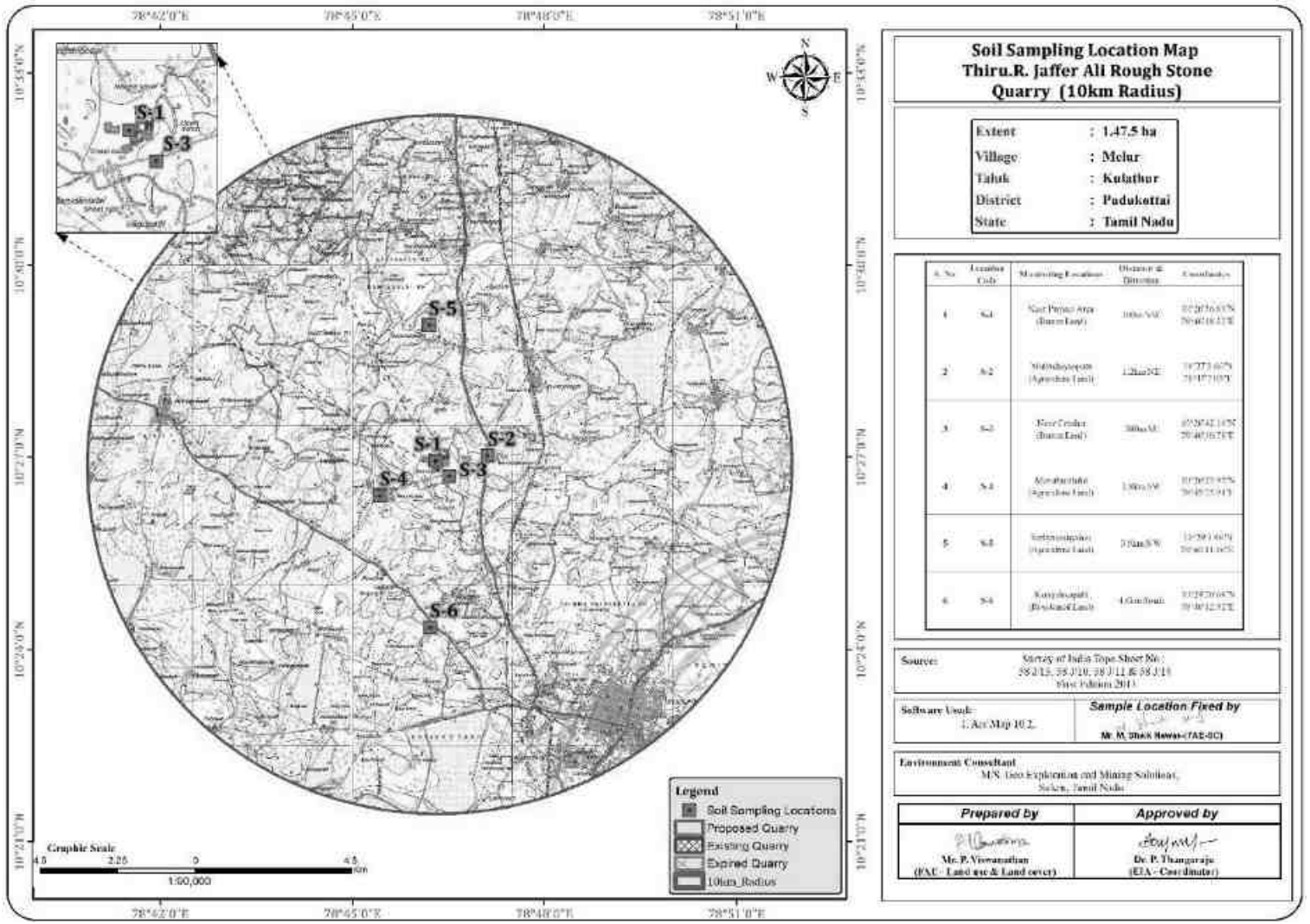


FIGURE 3.5: SOIL MAP

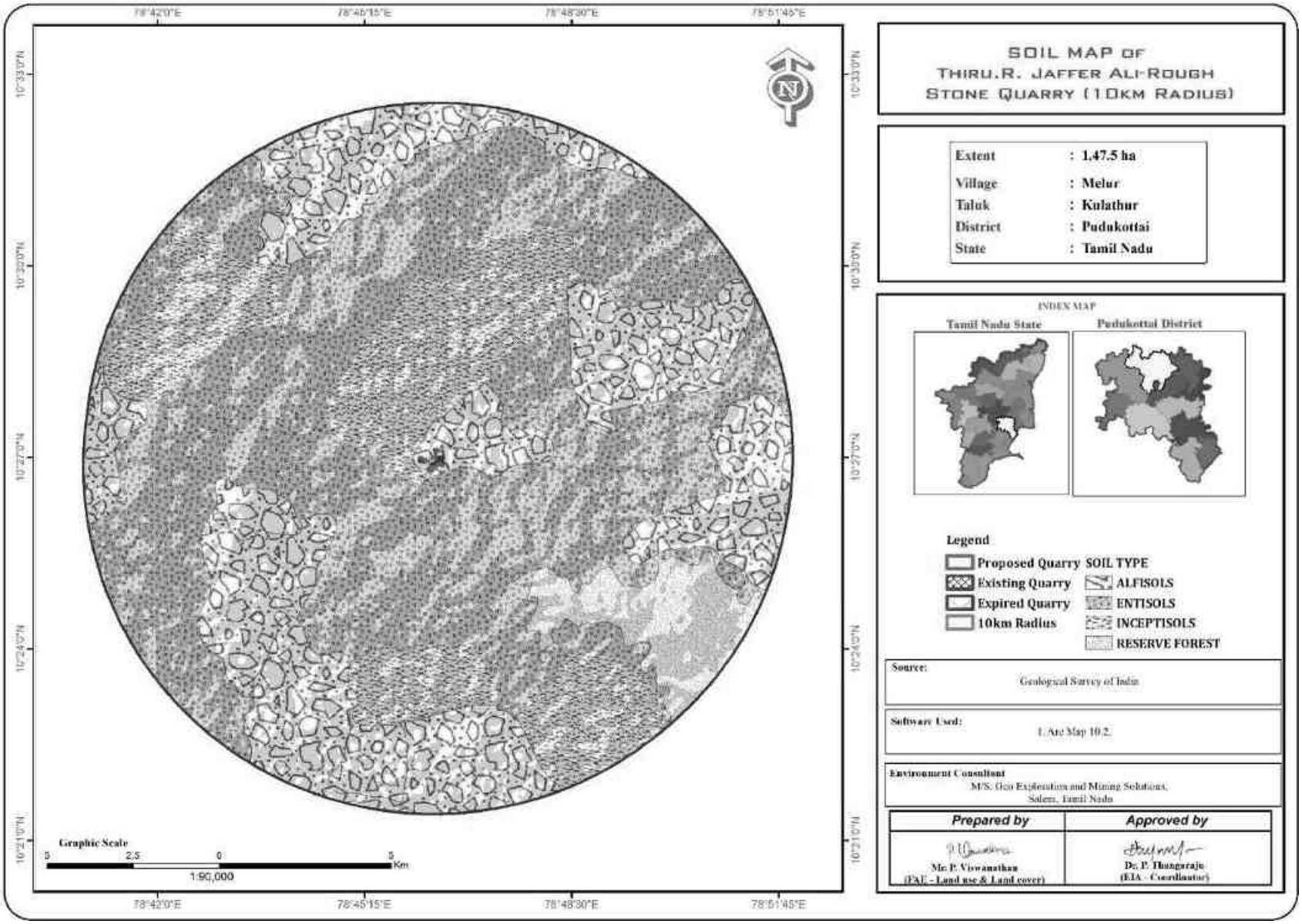


TABLE 3.7: SOIL QUALITY OF THE STUDY AREA

S. NO	TEST PARAMETERS	TEST METHOD	UNIT	S-1 Near Project Area	S-2 Muthudaiyanpatti	S-3 Near Crusher	S-4 Maruthanthalai	S-5 Sathyamangalam	S-6 Kurujalayapatti
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	-	7.02	7.13	7.02	6.86	5.89	6.96
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff: 2016)	µmhos/cm	356.8 µmhos/cm	325.6 µmhos/cm	335.6 µmhos/cm	253.4 µmhos/cm	286.5 µmhos/cm	325.8 µmhos/cm
03	**Texture:**								
	Clay	Gravimetric Method	%	30.9 %	31.9 %	31.0 %	27.3 %	31.5 %	30.7 %
	Sand		%	36.6 %	35.9 %	35.9 %	37.6%	34.6 %	37.2 %
	Silt		%	32.5 %	32.2 %	33.1 %	35.1 %	33.9%	32.1 %
04	Water Holding Capacity	By Gravimetric Method	%	41.3 %	40.6%	47.4 %	46.6 %	42.5 %	49.5 %
05	Bulk Density	By Cylindrical Method	g/cm^3	1.02 g/cm3	1.06 g/cm3	1.17 g/cm3	1.03 g/cm3	1.04 g/cm3	1.25 g/cm3
06	Porosity	By Gravimetric Method	%	37.1 %	43.1 %	45.3 %	40.6 %	43.2 %	41.6 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	mg/kg	98.7 mg/kg	98.6 mg/kg	146.9 mg/kg	136.5 mg/kg	102 mg/kg	129.8 mg/kg
08	Magnesium as Mg		mg/kg	40.2 mg/kg	41.9 mg/kg	85.8 mg/kg	80.5 mg/kg	52.6 mg/kg	60.8 mg/kg
09	Manganese as Mn		mg/kg	37.2 mg/kg	31.3 mg/kg	29.8 mg/kg	36.7 mg/kg	29.6 mg/kg	22.8 mg/kg
10	Zinc as Zn		mg/kg	1.07 mg/kg	2.03 mg/kg	1.89 mg/kg	1.18 mg/kg	1.66 mg/kg	1.92mg/kg
11	Boron as B		mg/kg	1.19mg/kg	1.26 mg/kg	2.63 mg/kg	1.42 mg/kg	1.25 mg/kg	2.24 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	mg/kg	168.5 mg/kg	198.5 mg/kg	198.5 mg/kg	187.8 mg/kg	195.5 mg/kg	191.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27: 1977 (Reaff:2015)	%	0.023 %	0.019 %	0.023 %	0.017 %	0.019 %	0.016 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	mg/kg	32.1 mg/kg	32.8 mg/kg	39.2 mg/kg	31.8 mg/kg	39.7 mg/kg	29.7 mg/kg
15	Total Phosphorus as P	IS 10158: 1982 (Reaff: 2019)	mg/kg	5.21mg/kg	3.62 mg/kg	6.63 mg/kg	5.24 mg/kg	6.41 mg/kg	4.12 mg/kg
16	Total Nitrogen as N	IS 14684: 1999 (Reaff:2019)	mg/kg	329.5 mg/kg	362.5 mg/kg	356.6 mg/kg	306.5 mg/kg	316.0 mg/kg	302.5 mg/kg

17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	mg/kg	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		mg/kg	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
19	Copper as Cu		mg/kg	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
20	Lead as Pb		mg/kg	0.99 mg/kg	1.20 mg/kg	0.89 mg/kg	0.93 mg/kg	0.89 mg/kg	0.97 mg/kg
21	Iron as Fe		mg/kg	6.63 mg/kg	4.18 mg/kg	6.98 mg/kg	4.64 mg/kg	3.03 mg/kg	2.98 mg/kg
22	Organic Matter	IS: 2720 Part 22: 1972 (Reaff: 2015)	%	2.27 %	2.34 %	2.89 %	3.29 %	3.32 %	2.68 %
23	Organic Carbon	IS: 2720 Part 22: 1972 (Reaff: 2015)	%	1.32 %	1.36 %	1.68 %	1.91 %	1.93 %	1.56 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	meq/100g of soil	39.7 meq/100g of soil	32.0 meq/100g of soil	40.1 meq/100g of soil	33.9 meq/100g of soil	37.8 meq/100g of soil	36.7 meq/100g of soil

Source: Sampling Results by CHENNAI METTEX LAB PRIVATE LIMITED in association with GEMS

Interpretation & Conclusion

Physical Characteristics –

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay varied between 27.3-31.9%, Sand varied between 34.6-37.6% and Silt varied between 32.1-35.1% and Bulk Density of Soils in the study area varied between 1.02-1.25g/cm^3. The Water Holding Capacity of the soil samples is found to be medium i.e., ranging from 40.6-49.5%.

Chemical Characteristics

- The nature of soil is slightly alkaline to strongly alkaline with pH range 5.89-7.13
- The available Nitrogen content range between 302.5 – 362.5mg/kg
- The available Phosphorus content range between 3.62–6.63mg/kg
- The available Potassium range between 29.7–39.7mg/kg

3.2 WATER ENVIRONMENT

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

3.2.1 Surface Water Resources:

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

3.2.2 Ground Water Resources:

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

3.2.3 Methodology

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

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

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

TABLE 3.8: WATER SAMPLING LOCATIONS

S.NO	CODE	LOCATIONS	DISTANCE & DIRECTION	CO-ORDINATES
SURFACE WATER				
1	SW-1	Tank Near Nakera Vayal	950m NW	10°27'24.11"N 78°46'11.18"E
2	SW-2	Tank Near Siruvayal	5.7km SE	10°25'32.70"N 78°49'15.46"E
GROUND WATER				
3	OW-1	Near Project Area	540m NE	10°27'1.64"N 78°46'41.23"E
4	OW-2	Sathyamangalam	4.0km NW	10°29'7.10"N 78°46'9.50"E
5	BW-1	Near Crusher	480m SE	10°26'37.65"N 78°46'30.77"E
6	BW-2	Kurujalayapatti	4.6km South	10°24'21.51"N 78°46'12.50"E

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

FIGURE 3.6: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

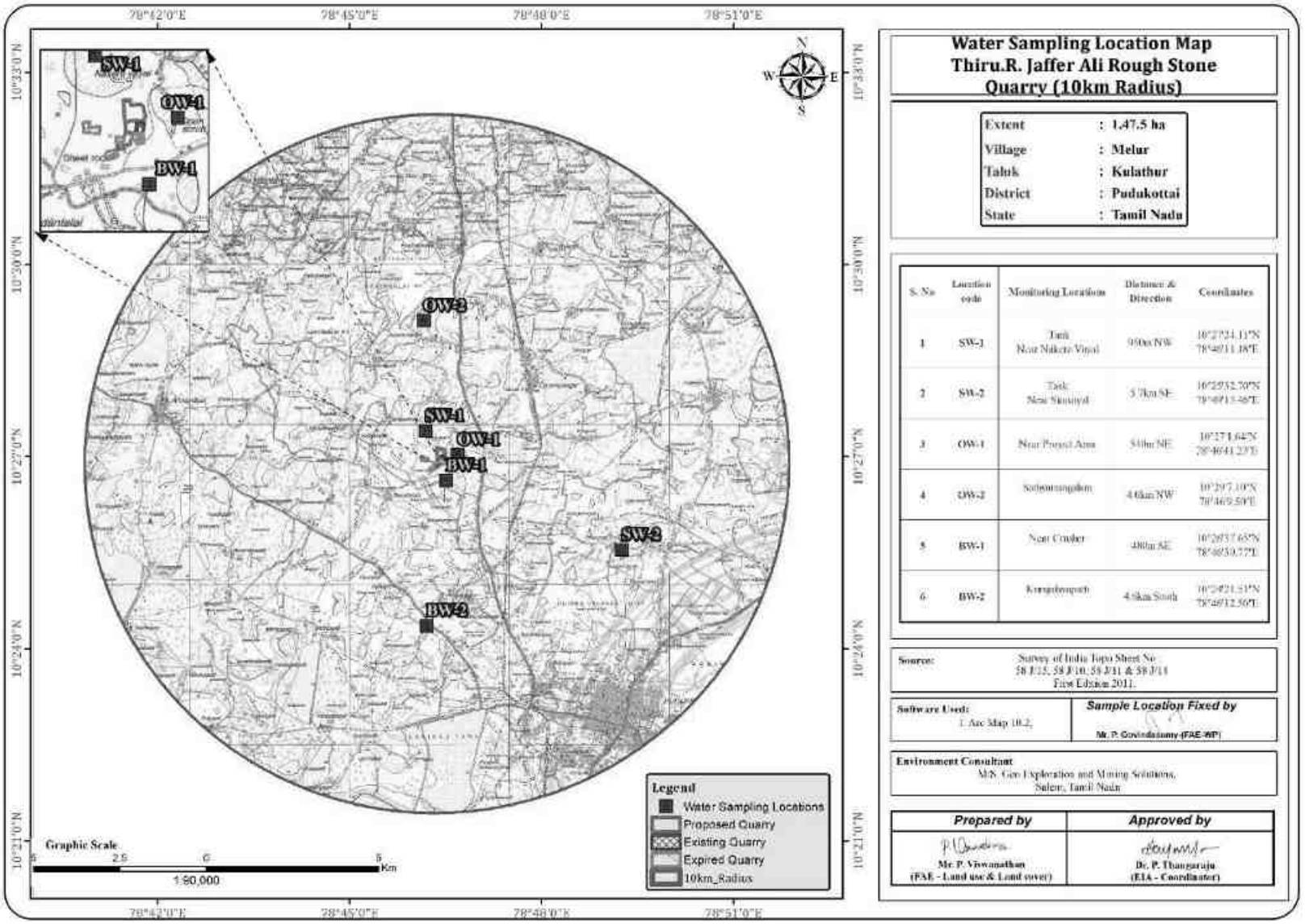


TABLE 3.9: SURFACE WATER SAMPLING RESULTS

TEST	TEST METHOD	UNIT	SW1- Tank Near Nakera Vayal	SW2- Tank Near Siruvayal
Discipline: Chemical				
Colour	IS 3025 Part 4:1983 (Reaff:2017)	Hazen	5 Hazen	5 Hazen
Odour	IS 3025 Part 5:2018	-	Agreeable	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	-	8.02	8.09
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	µmhos/cm	1549.0 µmhos/cm	1500.0µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	NTU	4 NTU	5 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	mg/l	914.0mg/l	885.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (Reaff:2019)	mg/l	260.0 mg/l	244.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	mg/l	69.3 mg/l	64.1 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	mg/l	22.3 mg/l	20.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:1986 (Reaff:2019)	mg/l	228.5 mg/l	218.0 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	mg/l	276.8 mg/l	268.5 mg/l
Sulphate as SO_4	IS 3025 Part 24:1986 (Reaff:2019)	mg/l	65.8 mg/l	62.5 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	mg/l	0.51 mg/l	0.59 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	mg/l	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23rd Edn. 2017:4500 F, D	mg/l	0.42 mg/l	0.41 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Reaff:2019)	mg/l	12.5 mg/l	18.5 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)

Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	mg/l	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43-1992(Reaff: 2019)	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	mg/l	13.2 mg/l	18.1 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	mg/l	40.0 mg/l	40.0 mg/l
Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	mg/l	6.5 mg/l	6.2 mg/l
Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-1986 (Reaff: 2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	mg/l	22.5 mg/l	23.2 mg/l
Discipline: Biological				
Total Coliform	APHA 23rd Edn. 2017:9221F	MPN/100ml	1352	1268
Escherichia coli	APHA 23rd Edn. 2017:9221F	MPN/100ml	210	215

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

TABLE 3.10: GROUND WATER SAMPLING RESULTS

TEST	PROTOCOL	Unit	OW1 - Near Project Area	OW2 - Sathyamangalam	BW1 - Near Project Area	BW2 – Kurujalayapatti
Discipline: Chemical						
Colour	IS 3025 Part 4:1983 (Reaff:2017)	-	1 Hazen	5 Hazen	1 Hazen	1 Hazen
Odour	IS 3025 Part 5:2018	-	Agreeable	Agreeable	Agreeable	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	-	7.42	7.15	7.24	7.32
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	µmhos/cm	1332.0µmhos/cm	1227.0 µmhos/cm	1130 µmhos/cm	1074.0µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	NTU	1 NTU	1 NTU	1 NTU	1 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	mg/l	786.0mg/l	724.0 mg/l	668.0mg/l	634.0mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (Reaff:2019)	mg/l	228.0mg/l	208.0 mg/l	196.4 mg/l	176.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	mg/l	52.9 mg/l	48.0 mg/l	44.2 mg/l	40.0 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	mg/l	23.3 mg/l	21.4 mg/l	20.4 mg/l	38.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:1986 (Reaff:2019)	mg/l	201.0mg/l	188.5 mg/l	175.8 mg/l	156.0 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	mg/l	256.4 mg/l	225.4 mg/l	226.5 mg/l	199.8 mg/l
Sulphate as SO_4	IS 3025 Part 24:1986 (Reaff:2019)	mg/l	52.3 mg/l	41.2 mg/l	42.5 mg/l	38.5 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	mg/l	0.40 mg/l	0.36 mg/l	0.33 mg/l	0.32mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	mg/l	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23rd Edn. 2017:4500 F,D	mg/l	0.38 mg/l	0.32mg/l	0.31 mg/l	0.29 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Reaff:2019)	mg/l	9.1 mg/l	8.3 mg/l	7.3 mg/l	7.6 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)

Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	mg/l	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43-1992(Reaff: 2019)	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	mg/l	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 38:1989 (Reaff:2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	mg/l	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)

Discipline: Biological						
Total Coliform	APHA 23rd Edn. 2017:9221B	MPN/100ml	156 MPN/100ml	124 MPN/100ml	134 MPN/100ml	118 MPN/100ml
Escherichia coli	APHA 23rd Edn. 2017:9221F	MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml

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

3.2.4 Interpretation& Conclusion

Surface Water

The pH varied from 8.02 to 8.09 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 885 to 914 mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

Other parameters:

Chloride content is 268.5 to 276.8mg/l, Nitrates content is 12.5 to 18.5mg/l and Sulphates varied from 62.5 to 65.8mg/l.

Ground Water

The pH of the water samples collected ranged from 7.15 to 7.42 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 634 to 786mg/l in all samples. Total hardness varied between 176 to 228mg/l for all samples.

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

3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 58-62m. The maximum depth proposed out of proposed projects is 53m BGL.

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

In general, the ground water movement is based on the gradient i.e., water moves from the highest static ground water elevation to lowest static ground water elevation point. The ground water movement is important aspect to locating the recharge and discharge areas. Therefore, the data has been collected in the study area. Water level measured in the 8 open wells and 6 borewells.

The average water level in the open well is varies from = 13.2m to 15.5m bgl

The water level in the bore well is varies from = 57.6m to 60.2m bgl

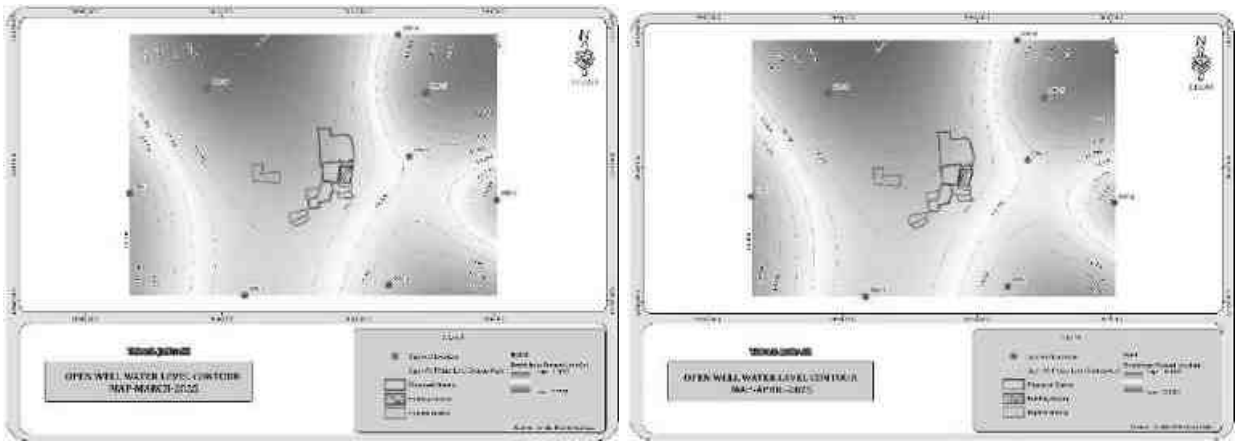
The water level in the area is above 58m-62m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

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

S.NO	LABEL	LONGITUDE	LATITUDE	MARCH-25	APRIL-25	MAY-25
1	OW-1	78° 46' 41.3809" E	10° 27' 01.7434" N	13.8	14.4	15
2	OW-2	78° 47' 00.6784" E	10° 26' 52.1817" N	13.5	14.1	14.7
3	OW-3	78° 46' 36.8810" E	10° 26' 33.5354" N	14	14.6	15.2
4	OW-4	78° 46' 05.1777" E	10° 26' 31.2318" N	13.6	14.2	14.8
5	OW-5	78° 45' 39.7076" E	10° 26' 53.6010" N	14.2	14.8	15.4
6	OW-6	78° 45' 56.8982" E	10° 27' 16.6922" N	13.2	13.8	14.4
7	OW-7	78° 46' 45.0619" E	10° 27' 15.6947" N	14.3	14.9	15.5
8	OW-8	78° 46' 38.9884" E	10° 27' 28.4717" N	13.9	14.5	15.1

Source: Onsite monitoring data

FIGURE 3.7: OPEN WELL CONTOUR MAP MARCH TO MAY 2025



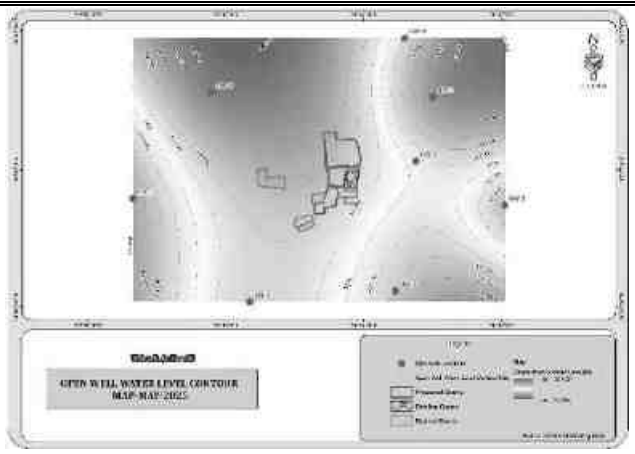


TABLE 3.12: PRE-MONSOON SEASON WATER LEVEL OF BOREWELLS 1 KM RADIUS

S.No	Name	LONGITUDE	LATITUDE	Mar-25	APPR-25	May-25
1	BW1	78° 46' 30.7709" E	10° 26' 37.6250" N	58.5	59.1	59.7
2	BW2	78° 46' 21.1036" E	10° 26' 24.2501" N	58.4	59	59.6
3	BW3	78° 46' 06.2492" E	10° 26' 37.6815" N	58	58.6	59.2
4	BW4	78° 45' 43.2607" E	10° 26' 48.5829" N	57.6	58.2	58.8
5	BW5	78° 46' 34.2709" E	10° 27' 16.9860" N	59	59.6	60.2
6	BW6	78° 46' 49.6712" E	10° 27' 19.3058" N	58.8	59.4	60

Source: Onsite monitoring data

FIGURE 3.8: BOREWELL CONTOUR MARCH TO MAY 2025

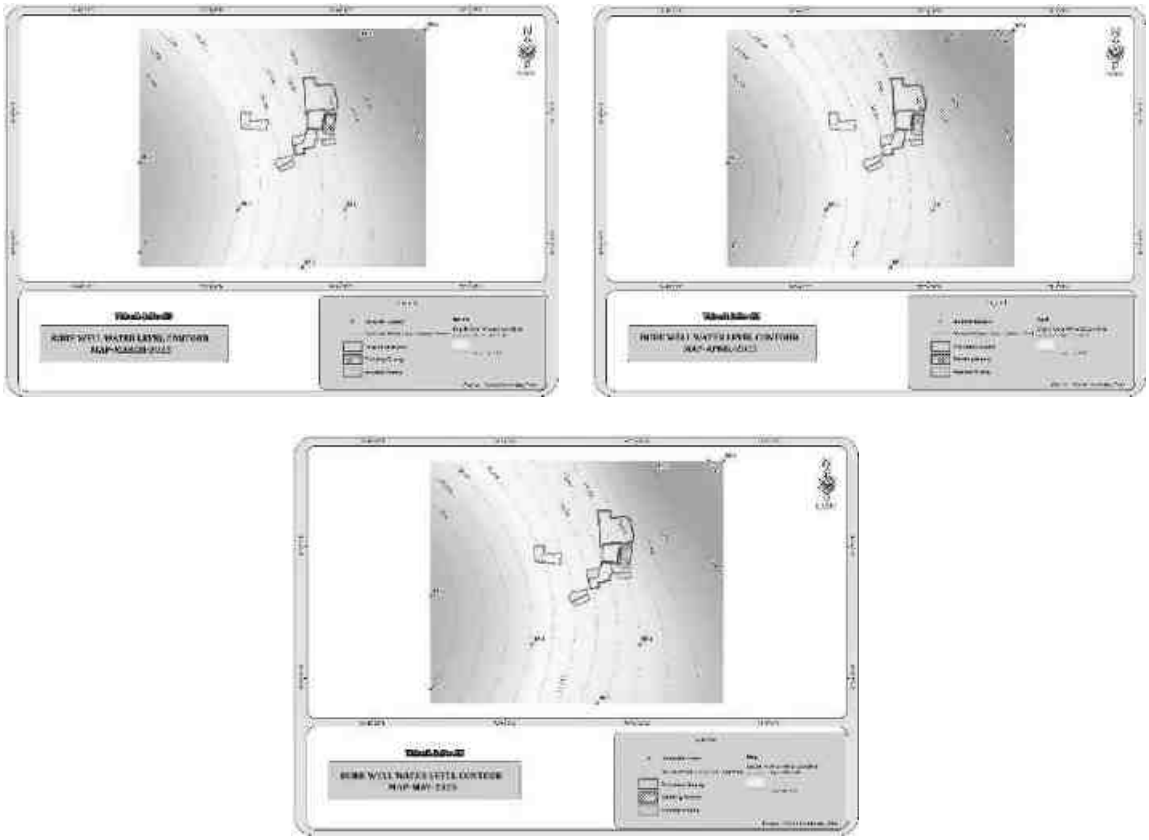


FIGURE 3.9: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE

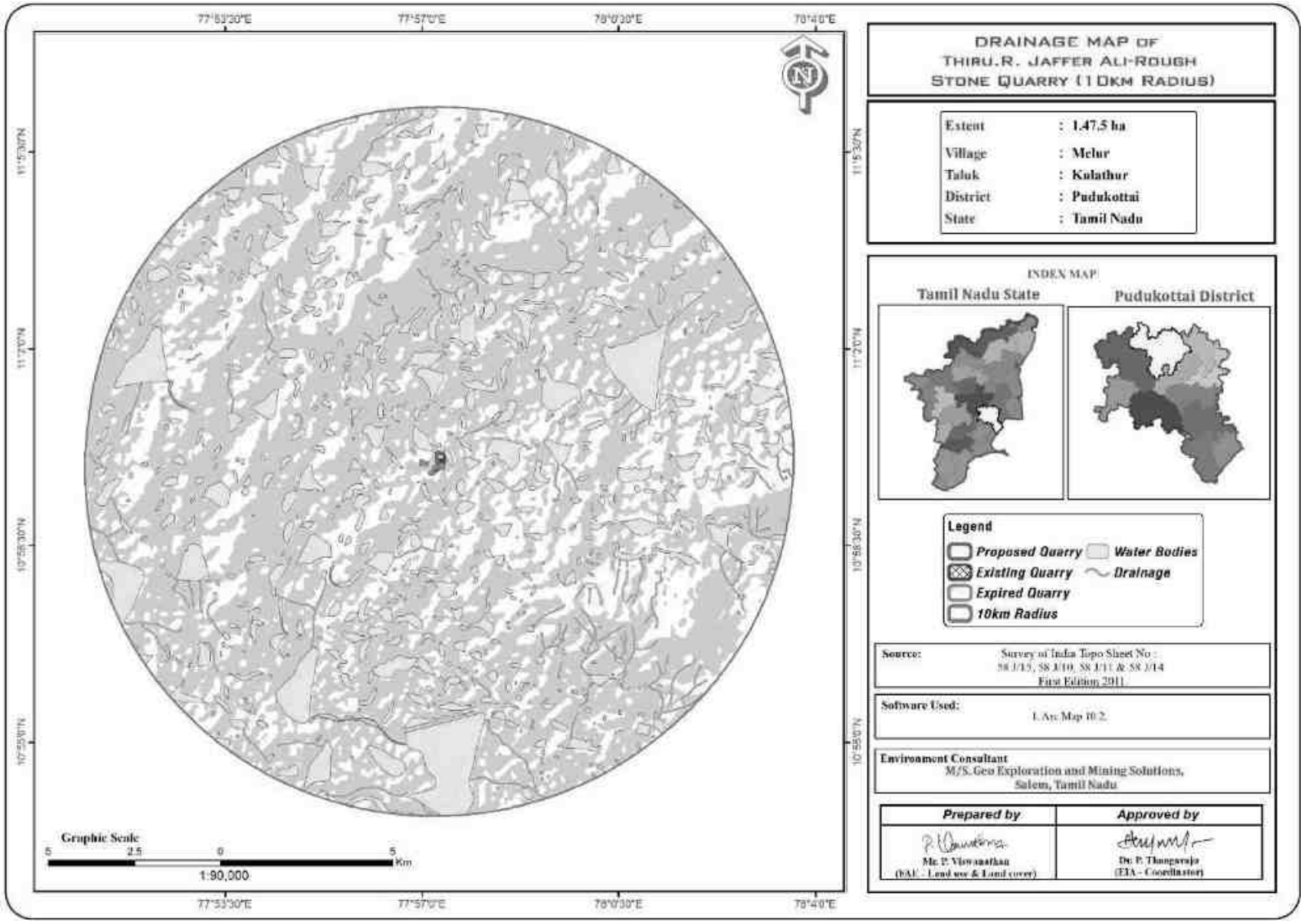
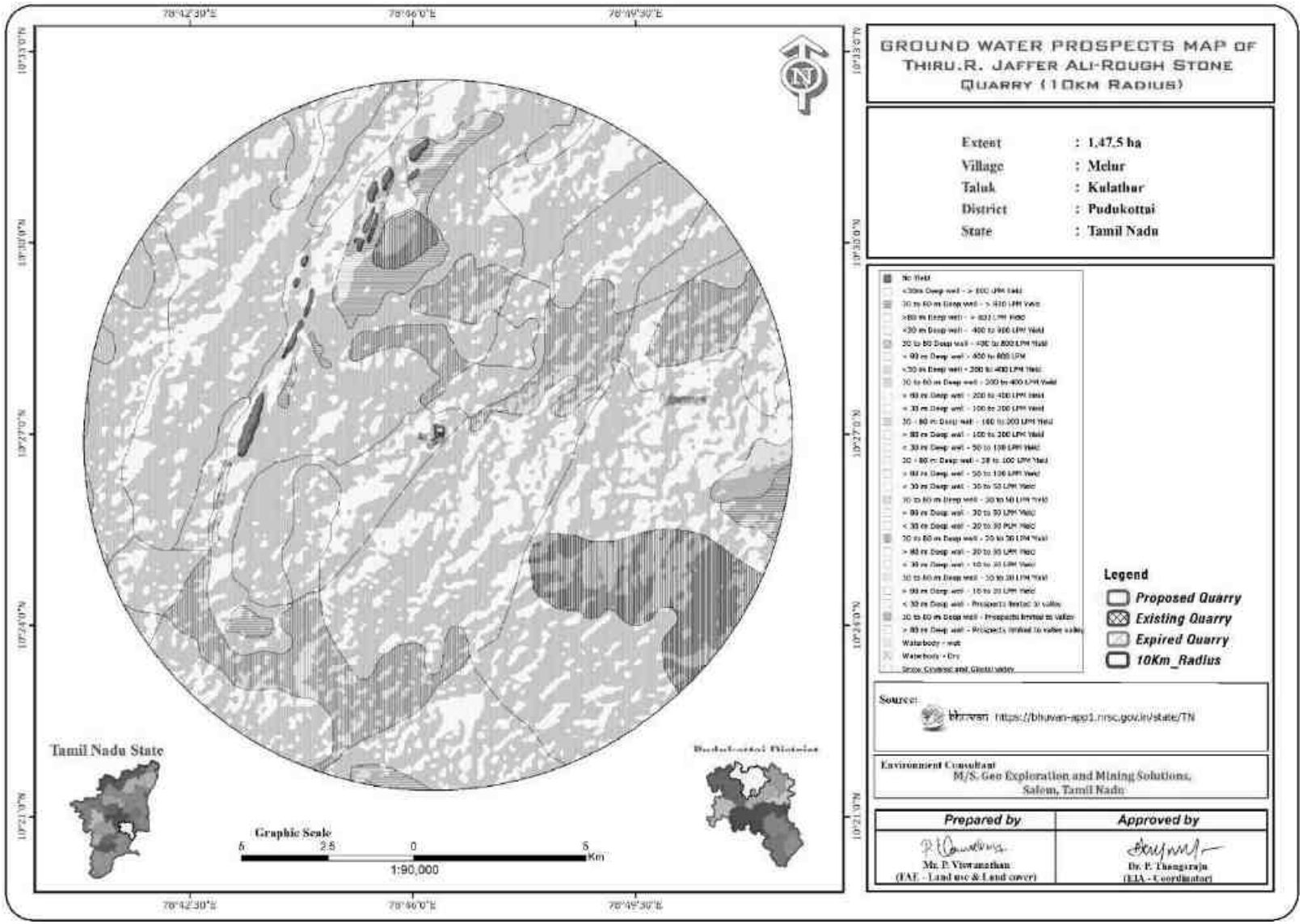


FIGURE 3.10: GROUND WATER PROSPECT MAP



Geophysical Resistivity Survey

3.2.5.1 Methodology and Data Acquisition

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

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

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

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

ΔV = potential difference between receiving electrodes

G = Geometric Factor.

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

$$\rho_r = F\rho_w = a\,\emptyset^m\rho_w$$

ρr = Resistivity of Rocks

ρw = Resistivity of water in pores of rock

F = Formation Factor

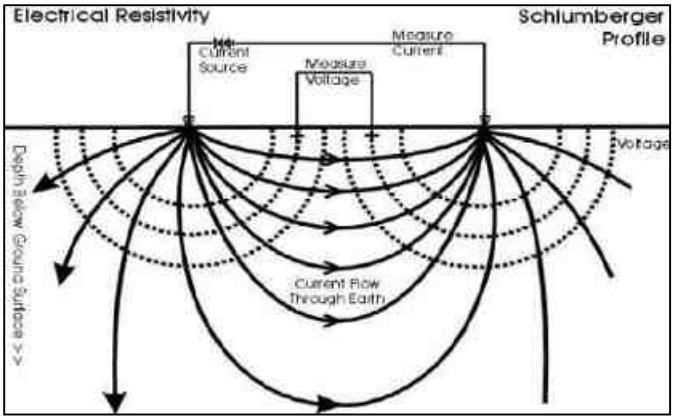
$\emptyset$ = Fractional pore volume

A = Constants with values ranging from 0.5 to 2.5

3.2.5.2 Survey Layout

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

RESISTIVITY SURVEY PROFILE



Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes (C_1& C_2) and measuring the resulting potential by two other electrodes called potential electrode (P_1& P_2). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest.

3.2.5.3 Data Presentation

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

3.2.5.4 Geophysical Data Interpretation

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

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

3.3 AIR ENVIRONMENT

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

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

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

3.3.1 Meteorology & Climate

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

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

Climate -

- This city has a tropical climate. Has a tropical climate. The summers here have a good deal of rainfall, while the winters have very little. This location is classified as Aw by Köppen and Geiger. The average temperature in Pudukkottai is 28.0 °C | 82.4 °F. Precipitation here is about 925 mm | 36.4 inch per year.
- The Pudukkottai is situated close to the equator and therefore the summers are not easy to define. It is recommended that the optimal period for embarking on a journey would be during January, February, October, November, December.
- The driest month is February, with 15 mm | 0.6 inch of rainfall. Most of the precipitation here falls in November, averaging 203 mm | 8.0 inch.
- The warmest month of the year is May, with an average temperature of 31.0 °C | 87.8 °F. January is the coldest month, with temperatures averaging 24.4 °C | 76.0 °F.

  https://en.climate-data.org/asia/india/tamil-nadu/pudukkottai-24013/

Rainfall

TABLE 3.13: RAINFALL DATA

Actual Rainfall in mm						Normal Rainfall in mm
2019	2020	2021	2022	2023	2024 (As On 30.09.2024)	
876.2	1885.2	1188.7	842.5	838	473.0	787.7

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

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE

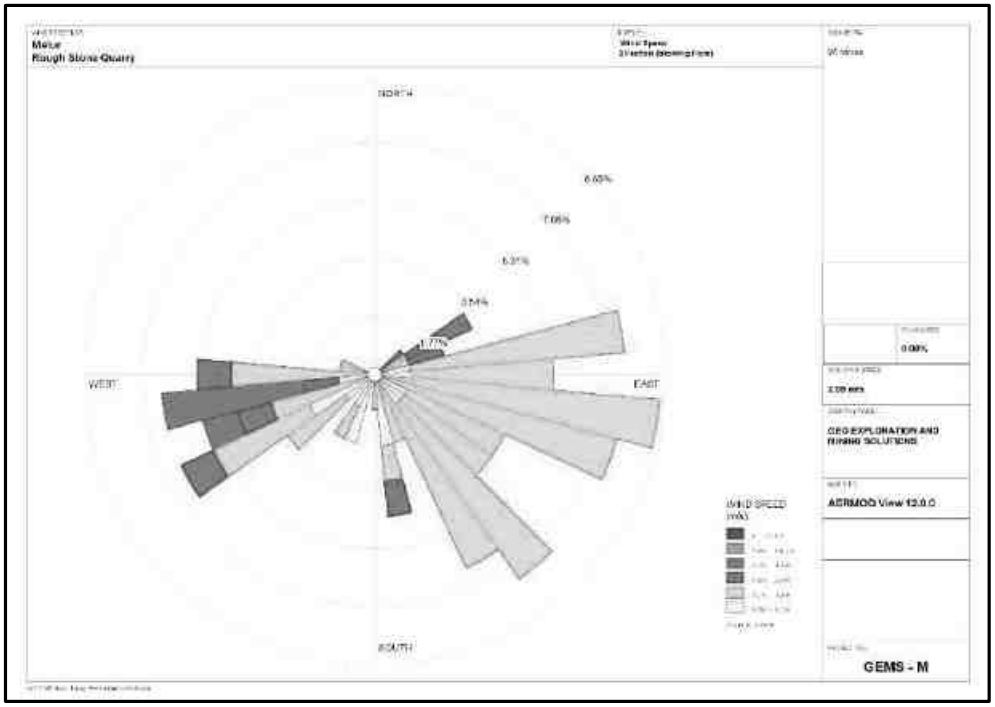
S.No	Parameters		Mar–2025	Apr–2025	May–2025
1	Temperature (^{0}C)	Max	30.46	31.91	32.45
		Min	26.47	28.02	27.33
		Avg	28.46	29.96	29.89
2	Relative Humidity (%)	Avg	68.81	67.67	68.78
3	Wind Speed (m/s)	Max	5.43	3.56	7.64
		Min	1.97	1.56	1.43
		Avg	3.7	2.56	4.53
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		E,ESE	SE,SSE	WSW,W

Correlation between Secondary and Primary Data

The average rainfall over the period of five years 787.7m. The meteorological data collected at the site is almost similar to that of secondary data collected from TWAD Board – Pudukkottai.

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

FIGURE 3.11: WINDROSE DIAGRAM



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

1. Predominant winds were from E, ESE, SE, SSE
2. Wind speed readings were recorded between 0.50 to 8.80m/s
3. Temperature readings ranging from 28.46 to 29.96°C
4. Relative humidity ranging from 67.67 to 68.81%
5. The monitoring was carried out continuously for three months. (March to May)

3.3.2 Methodology and Objective

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

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

3.3.3 Sampling and Analytical Techniques

TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS

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

Source: Sampling Methodology followed by CHENNAI METTEX LAB PRIVATE LIMITED & CPCB Notification

TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl.No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide (µg/m3)	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide (µg/m3)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than 10µm) PM10 (µg/m3)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than 2.5 µm PM2.5 (µg/m3)	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

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

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

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

3.3.4 Frequency & Parameters for Sampling

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

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

3.3.5 Ambient Air Quality Monitoring Stations

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

TABLE 3.17: AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	10°26'52.58"N 78°46'23.60"E
2	AAQ-2	Near Crusher	420m SE	10°26'43.88"N 78°46'34.67"E
3	AAQ-3	Near Quarry	430m NW	10°27'5.34"N 78°46'11.16"E
4	AAQ-4	Muthudaiyanpatti (Residential)	1.2km East	10°26'58.15"N 78°44'39.91"E

5	AAQ-5	Maruthanthalai (School)	1.6km SW	10°26'25.26"N 78°45'32.93"E
6	AAQ-6	Sathyamangalam (College)	3.3km North	10°28'46.44"N 78°46'30.61"E
7	AAQ-7	Kurujalayapatti (Residential)	4.6km South	10°24'20.44"N 78°46'12.24"E

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

FIGURE 3.12: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

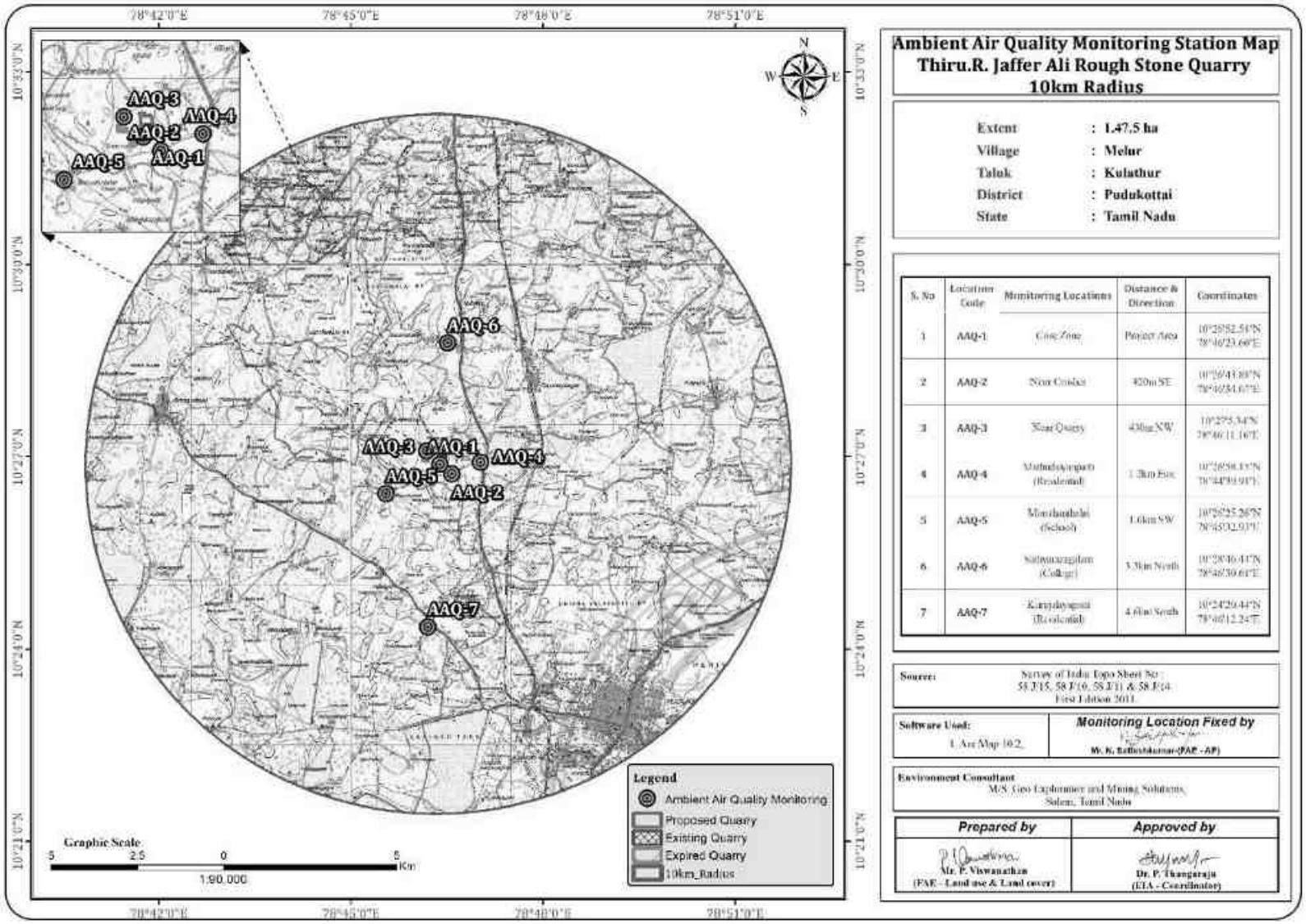


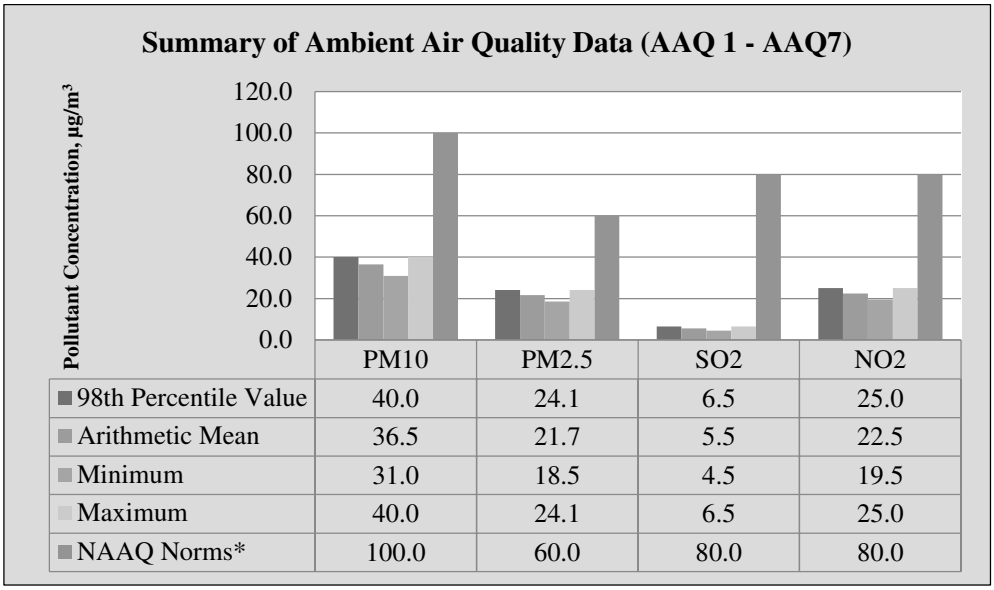
TABLE 3.18: SUMMARY OF AAQ 1 to AAQ 7

PM10	AAQ1 Core Zone	AAQ2 Near Crusher	AAQ3 Near Quarry	AAQ4 Muthudaiyanpatti	AAQ5 Maruthanthalai	AAQ6 Sathyamangalam	AAQ7 Kurujalayapatti
Arithmetic Mean	32.2	32.6	32.8	37.0	37.4	37.4	37.7
Minimum	30.0	30.1	30.0	35.2	35.5	35.4	35.4
Maximum	35.0	35.0	35.0	39.7	40.0	40.0	40.0
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PM2.5	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	19.1	19.1	19.4	21.9	22.2	22.0	22.4
Minimum	18.1	18.2	18.2	20.1	20.5	20.1	20.1
Maximum	20.0	20.0	21.0	24.0	24.0	24.0	24.2
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	5.0	5.0	5.4	5.4	5.4	5.5	5.5
Minimum	4.0	4.1	4.2	4.5	4.5	4.5	4.5
Maximum	6.0	6.0	6.5	6.5	6.4	6.4	6.5
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	20.1	20.3	20.2	23.0	23.2	23.4	23.3
Minimum	19.0	19.1	19.0	21.0	21.5	21.1	21.1
Maximum	21.3	21.9	21.1	25.0	25.0	25.0	25.0
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

TABLE 3.19: ABSTRACT OF AMBIENT AIR QUALITY DATA

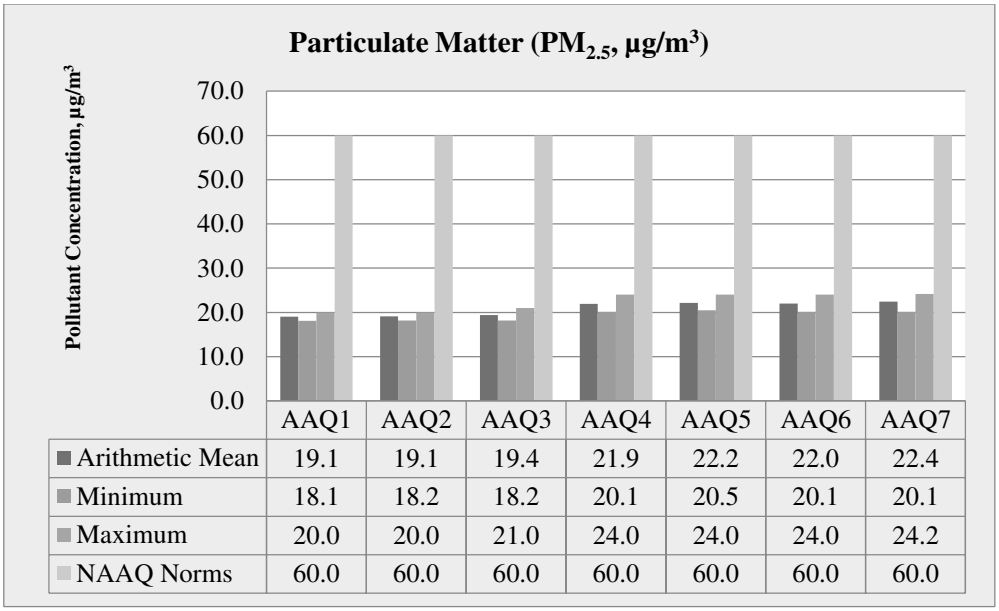
	Parameter	PM10	PM2.5	SO_2	NO_2
	No. of Observations	260	260	260	260
1	10^{th} Percentile Value	31.0	18.5	4.5	19.5
2	20^{th} Percentile Value	33.3	19.5	4.7	20.1
3	30^{th} Percentile Value	34.7	20.0	4.9	20.8
4	40^{th} Percentile Value	35.5	20.5	5.2	21.0
5	50^{th} Percentile Value	36.1	20.9	5.3	21.8
6	60^{th} Percentile Value	36.8	21.6	5.5	22.5
7	70^{th} Percentile Value	37.4	22.3	5.7	23.3
8	80^{th} Percentile Value	38.2	23.3	6.0	23.9
9	90^{th} Percentile Value	39.2	23.7	6.2	24.5
10	95^{th} Percentile Value	39.7	24.0	6.4	25.0
11	98^{th} Percentile Value	40.0	24.1	6.5	25.0
12	Arithmetic Mean	36.5	21.7	5.5	22.5
13	Geometric Mean	36.4	21.6	5.5	22.4
14	Standard Deviation	2.8	2.0	0.7	2.0
15	Minimum	31.0	18.5	4.5	19.5
16	Maximum	40.0	24.1	6.5	25.0
	NAAQ Norms*	**100.0**	**60.0**	**80.0**	**80.0**
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

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



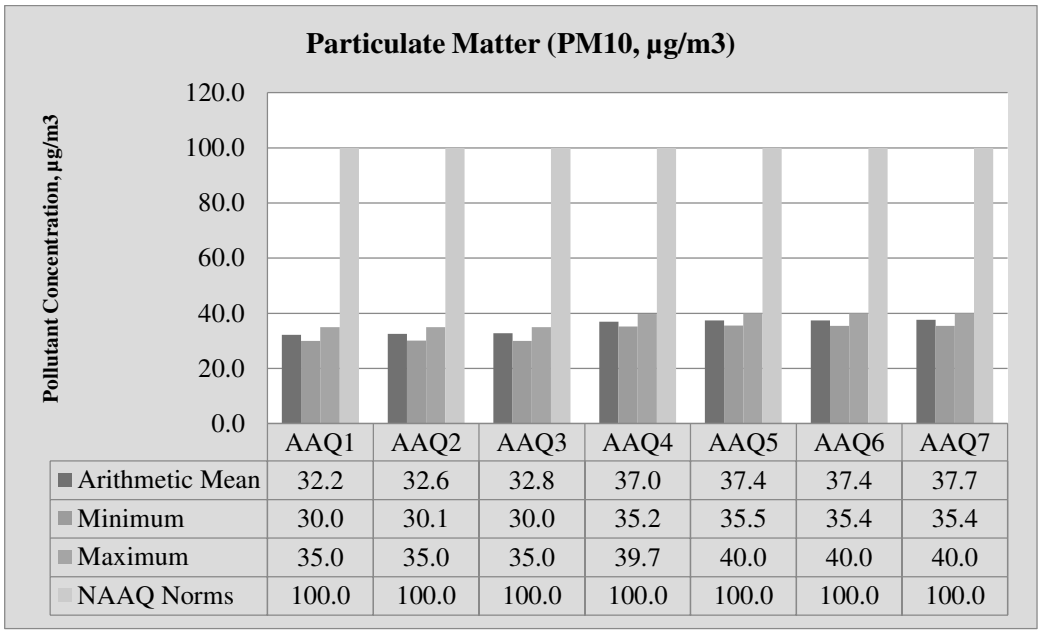
	PM10	PM2.5	SO2	NO2
98th Percentile Value	40.0	24.1	6.5	25.0
Arithmetic Mean	36.5	21.7	5.5	22.5
Minimum	31.0	18.5	4.5	19.5
Maximum	40.0	24.1	6.5	25.0
NAAQ Norms*	100.0	60.0	80.0	80.0

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



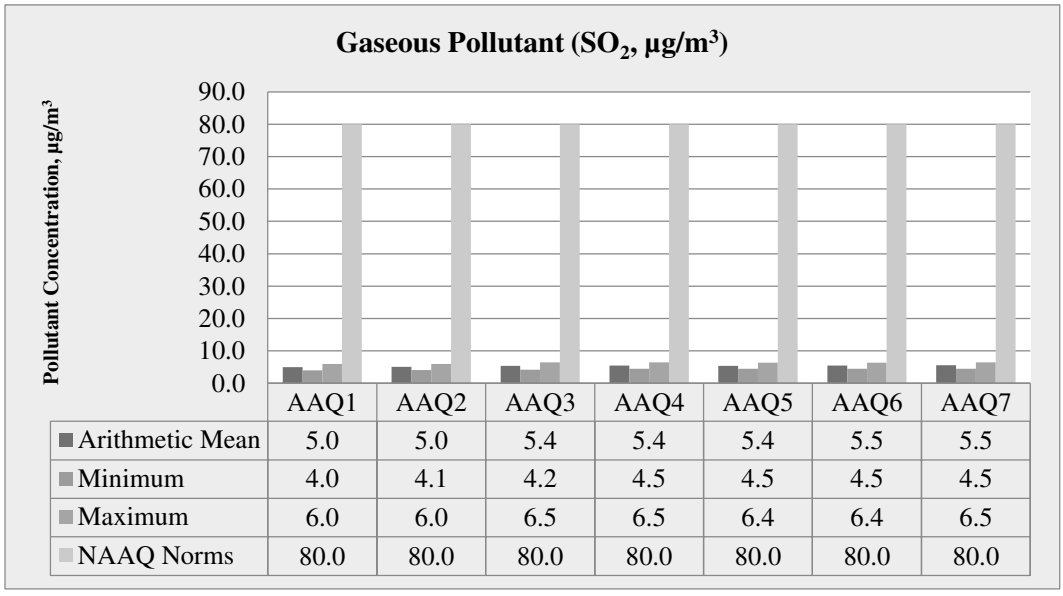
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	19.1	19.1	19.4	21.9	22.2	22.0	22.4
Minimum	18.1	18.2	18.2	20.1	20.5	20.1	20.1
Maximum	20.0	20.0	21.0	24.0	24.0	24.0	24.2
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0

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



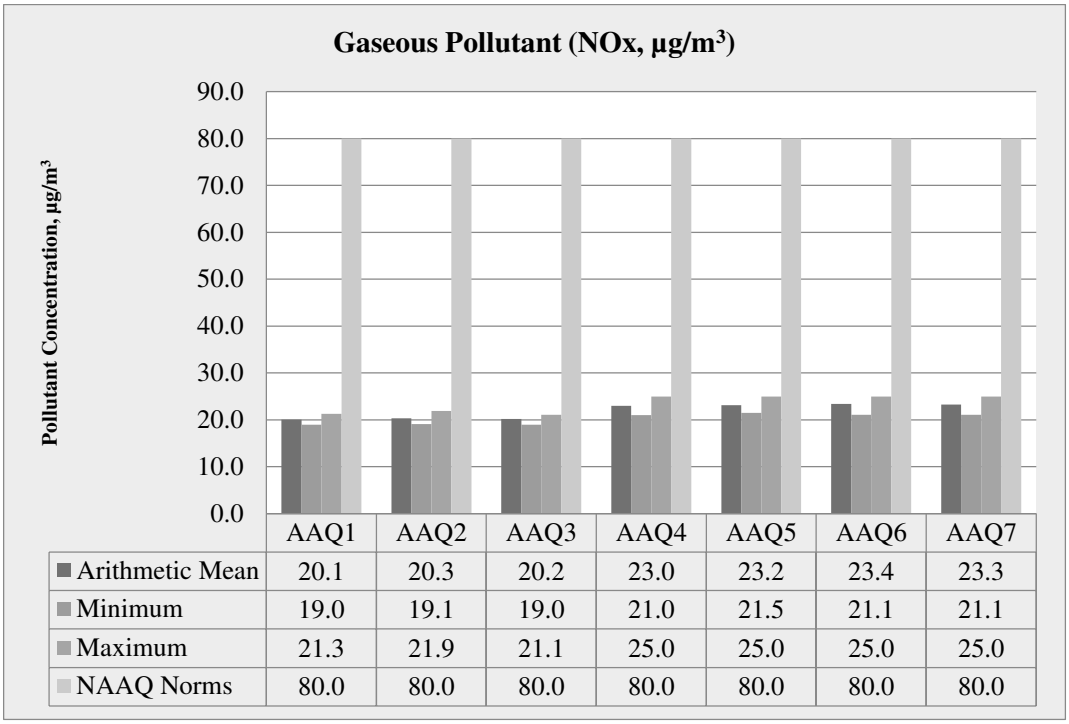
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	32.2	32.6	32.8	37.0	37.4	37.4	37.7
Minimum	30.0	30.1	30.0	35.2	35.5	35.4	35.4
Maximum	35.0	35.0	35.0	39.7	40.0	40.0	40.0
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0

FIGURE 3.16: BAR DIAGRAM OF GASEOUS POLLUTANT SO_2



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	5.0	5.0	5.4	5.4	5.4	5.5	5.5
Minimum	4.0	4.1	4.2	4.5	4.5	4.5	4.5
Maximum	6.0	6.0	6.5	6.5	6.4	6.4	6.5
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

FIGURE 3.17: BAR DIAGRAM OF GASEOUS POLLUTANT NO_x



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	20.1	20.3	20.2	23.0	23.2	23.4	23.3
Minimum	19.0	19.1	19.0	21.0	21.5	21.1	21.1
Maximum	21.3	21.9	21.1	25.0	25.0	25.0	25.0
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

3.3.6 Interpretations & Conclusion

As per monitoring data, PM_{10} ranges from 32.2 to 37.7µg/m^3, $PM_{2.5}$ data ranges from 19.1 to 22.4µg/m^3, SO_2 ranges from 5.0 to 5.5µg/m^3 and NO_2 data ranges from 20.1 to 23.4µg/m^3. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

3.4 NOISE ENVIRONMENT

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

3.4.1 Identification of Sampling Locations

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

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

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

TABLE 3.22: DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	N-1	Core Zone	Project Area	10°26'53.52"N 78°46'22.02"E
2	N-2	Near Crusher	330m SE	10°26'42.62"N 78°46'29.36"E
3	N-3	Near Quarry	420m NW	10°27'6.39"N 78°46'12.63"E
4	N-4	Muthudaiyanpatti (Residential)	1.2km NE	10°27'1.45"N 78°47'4.03"E
5	N-5	Maruthanthalai (School)	1.6km SW	10°26'24.91"N 78°45'32.90"E
6	N-6	Sathyamangalam (College)	3.3km North	10°28'46.47"N 78°46'30.25"E
7	N-7	Kurujalayapatti (Residential)	4.6km South	10°24'20.22"N 78°46'11.82"E

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

3.4.2 Method of Monitoring

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

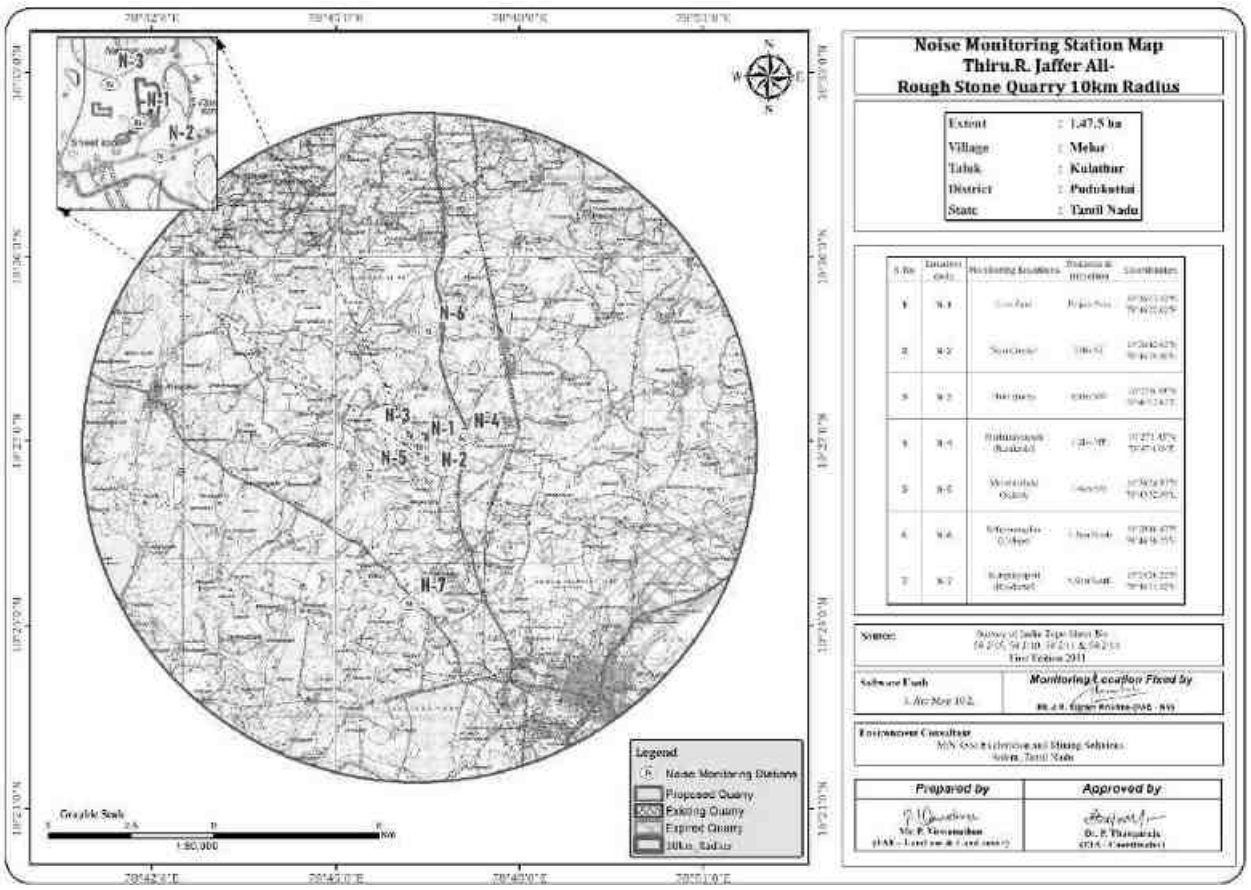
Leq = 10 Log L / T$\sum$ (10Ln/10)

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

T = Time interval of observation

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

FIGURE 3.20: NOISE MONITORING STATIONS AROUND 10 KM RADIUS



3.4.3 Analysis of Ambient Noise Level in the Study Area

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

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

Day time: 6:00 hours to 22.00 hours.

Night time: 22:00 hours to 6.00 hours.

TABLE 3.23: AMBIENT NOISE QUALITY RESULT

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	43.1	37.6	**Industrial** **Day Time- 75 dB (A)** **Night Time- 70 dB (A)**
2	Near Crusher	51.9	42.6	
3	Near Quarry	50.4	40.2	**Residential** **Day Time– 55 dB (A)** **Night Time- 45 dB (A)**
4	Muthudaiyanpatti (Residential)	44.1	39.6	
5	Maruthanthalai (School)	44.4	39.0	
6	Sathyamangalam (College)	46.0	40.8	

7	Kurujalayapatti (Residential)	47.9	42.2	

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

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

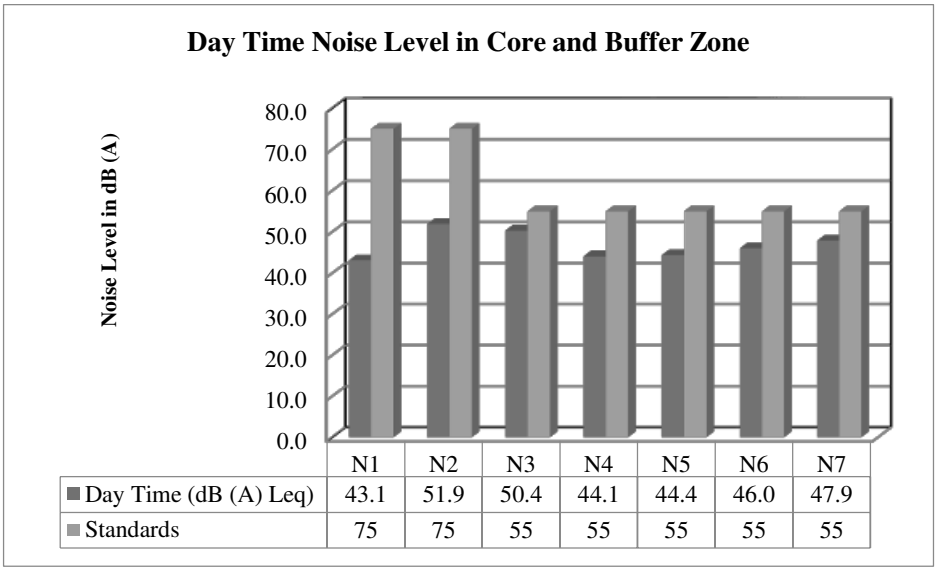
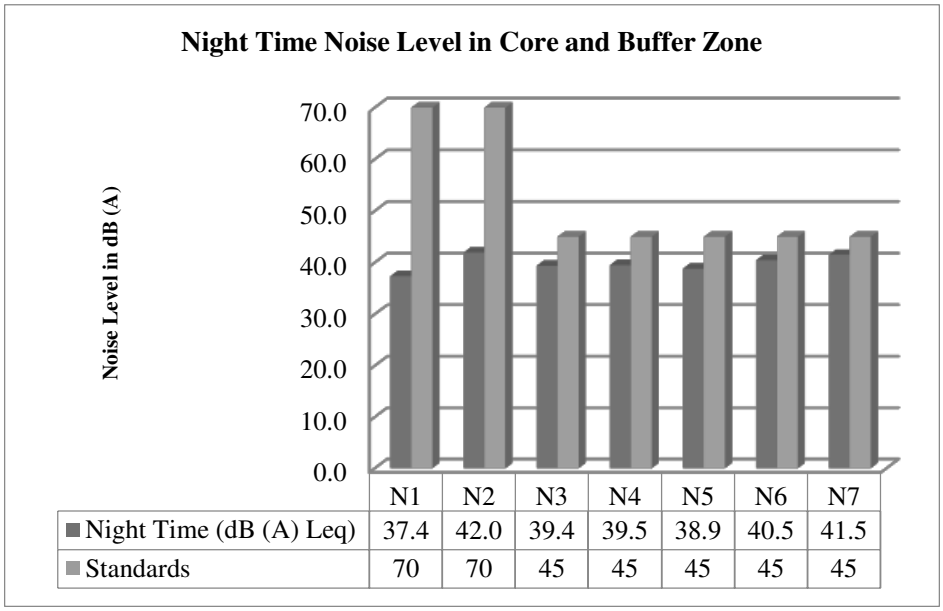


FIGURE 3.22: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE



3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 7 (Seven) locations around the proposed project area. Noise levels recorded in core zone during day time were from 43.1-51.9 dB (A) Leq and during night time were from 37.4-42.0 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 44.1-47.9dB (A) Leq and during night time were from 38.9-41.5dB (A)Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 BIOLOGICAL ENVIRONMENT

3.0. Biological Environment

3.1.Study area Ecology

In this project, the total area of the Cluster within 10km radius from the periphery of this quarry is reported as **8.51.5 Ha with 4 No. of quarries**. In such Cluster situation, a common Ecology and Biodiversity study for the entire cluster of quarries is enough to capture all the possible externalities. The common EIA/EMP data can be used for all quarries that fall under this cluster but the present work was carried out on the detailed study of the impacts of Udaiyalipatti Rough stone and gravel quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed mine lease area plain topography. The following methods were applied during the baseline study of flora, fauna, and diversity assessment.

3.2. Objectives of Biological Studies

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

3.3. Methodology of Sampling

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

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

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

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordinates. 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).

3.3.1. 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.

3.3.2. 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.

3.3.3. 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.

3.3.4. Observations from Sampling

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

3.3.5. 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.

3.4. Part I Field Sampling Techniques

3.4.1. Transect walk – Birds

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

3.4.2. 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.

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

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

3.4.4. 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.

3.4.5. 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 coloured 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. Floral analysis

The vegetation structure of the region was randomly checked at selected habitats and sampling was done study area. Most of the buffer zone area is under cultivation and hence sampling near pond side and road side are restricted to dense covered regions.

Quadrats of 10 × 10-m were laid down randomly within the core and 5-km buffer area; each quadrat was laid to assess the trees (>5 cm GBH) and one, 5 × 5-m sub-quadrat nested within the quadrat for shrubs. The quadrats were laid randomly to cover the area to maximize the sampling efforts and minimize the species homogeneity, such as small stream areas, trees in agricultural bunds, tank bunds, farm forestry plantations, wildlife areas, and natural forest area, avenue plantations, house backyards, etc. In each quadrat individuals belonging to tree (10 × 10-m) and shrub (5 × 5-m) were recorded separately and have been identified on the field. Only photographs were taken during the field survey and no damage is created to flora and fauna during the sampling. The plants were identified using floras by Gamble (1915-36), Saxena and Brahmam (1994-96), Nair and Henry (1983), Henry et al. (1987), Henry et al. (1989) and also by using updated check list from www.theplantlist.org.

3.5.1. Flora Composition in the Core Zone

Taxonomically a total of 26 species belonging to 18 families have been recorded from the core mining lease area. The proposed mine lease area is plain terrain and it is a government poramboke land which is not fit for cultivation. Based on the habitat classification of the enumerated plants the majority of species were Herbs 8 followed by trees 8, Shrubs 5, Grasses 3, and Creepers 2. Details of flora with the scientific name were mentioned in Table No. 3.1. The result of the core zone of flora studies shows that Fabaceae, Poaceae, and Lamiaceae is the main dominating species in the study area mentioned in Table No.3.1. No species were found as threatened category.

Table No: 3.1. Flora in the Core zone of Thiru.R. Jaffer Ali, Cluster area, Melur Village, Rough stone and gravel quarry

SI. No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Neem	Vembu	*Azadirachta indica*	Meliaceae
2.	Mesquite	Mullu maram	*Prosopis juliflora*	Fabaceae
3.	Indian mulberry	Nuna maram	*Morinda tinctoria*	Rubiaceae
4.	Tasmanian blue gum	Eucalyptus	*Eucalyptus globulus*	Myrtaceae
5.	Millettia pinnata	Pongam oiltree	*Pongamia pinnata*	Fabaceae
6.	White Bark Acacia	Vela maram	*Vachellia leucophloea*	Fabaceae
7.	Bitter Albizia	Arappu Tree	*Albizia amara*	Fabaceae
8.	Acacia Nilotica	Karuvelam maram	*Vachellia nilotica*	Fabaceae
Shrubs				
1.	Tanner's cassia	Avaram	*Senna auriculata*	Fabaceae
2.	Lantana	Unni chedi	*Lantana camara*	Verbenaceae
3.	Hopbush	Virali chedi	*Dodonaea viscosa*	Sapindaceae
4.	Milk Weed	Erukku	*Calotropis gigantea*	Apocynaceae
5.	Night shade plan	Sundaika	*Solanum torvum*	Solanaceae
Herbs				
1.	Common leucas	Thumbai	*Leucas aspera*	Lamiaceae
2.	Coat buttons	Thatha poo	*Tridax procumbens*	Asteraceae
3.	Bindii	Nerunji mullu	*Tribulus terrestris*	Zygophyllaceae
4.	Dog Mustard	Nai kadugu plant	*Cleome viscosa*	Cleomaceae

5.	Country Mallow	Nilatutti	*Sida cordifolia*	Malvaceae
6.	Prickly chaff flower	Nayuruv	*Achyranthes aspera*	Amaranthaceae
7.	Holy basil	Thulasi	*Ocimum tenuiflorum*	Lamiaceae
8.	Ban Tulsi	Melakai poondu	*Croton bonplandianus*	Euphorbiaceae
Creeper				
1.	Stinking passionflower	Poonai puduku chedi	*Passiflora foetida L*	Passifloraceae
2.	Wild bitter	Pavarkai	*Momordica charantia*	Cucurbitaceae
Grasses				
1.	Eragrostis	Pullu	*Eragrostis ferruginea*	Poaceae
2.	Nut grass	Korai	*Cyperus rotandus*	Poaceae
3.	Great brome	Thodappam	*Bromus diandrus*	Poaceae



a.Eucalyptus globulus



b.Albizia amara



c.Vachellia leucophloea



d.Senna auriculata



e.Vachellia nilotica



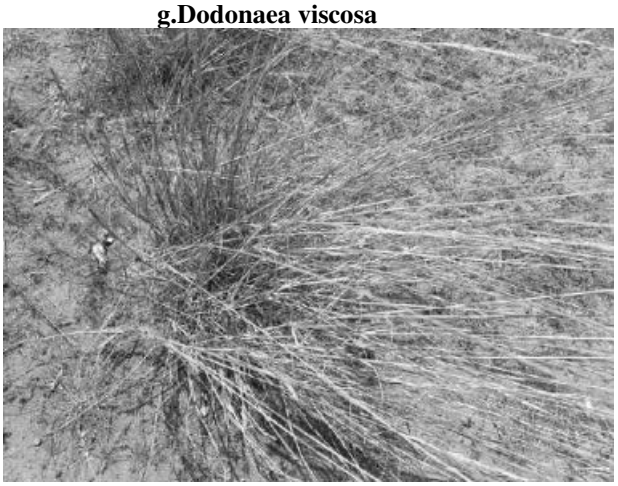
f.Croton bonplandianus



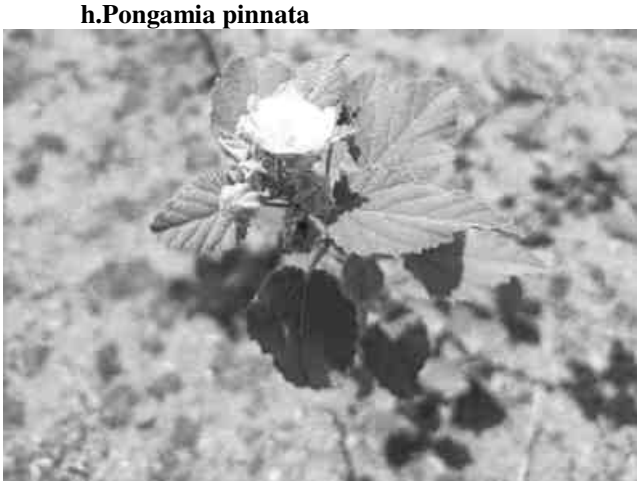
g.Dodonaea viscosa



h.Pongamia pinnata



i.Bromus diandrus



j. Sida cordifolia

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

3.6. Flora Composition in the Buffer Zone

A similar type of environment is also in the buffer area but with more flora diversity compare to core zone areas because of nearby agricultural land but presently there is no cultivation. It is fully dry conditions. The proposed mine lease area is plain terrain and it is Patta land which is not fit for cultivation. It contains a total of 102 species that have been recorded from the buffer zone. The floral (102) varieties among them Thirty-eight Trees 38, thirty-Two herbs 32, Eighteen shrubs 18, Six Climbers 6, Three Grasses 3, four Creepers 4, and two Cactus 2 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Poaceae, Mimosaceae is the main dominating species in the study area mentioned in Table No.3.2. Agricultural land is located away from the proposed project site. There are no impacts on the agricultural land & Horticulture. 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.3.2.

Table No: 3.2. Flora in Buffer Zone of Thiru.R. Jaffer Ali, Melur Village, Rough stone and gravel quarry

SI.No	English Name	Vernacular Name	Scientific Name	Family Name	Resource use type *(E,M,EM)
Trees					
1.	Gum arabic tree	Karuvelam	*Vachellia nilotica*	Fabaceae	E
2.	White-bark acacia	Vellaivelan	*Acacia leucophloea*	Mimosaceae	E
3.	Neem or Indian lilac	Vembu	*Azadirachta indica*	Meliaceae	M
4.	White Thorn	Seengai	*Acacia polyacantha*	Mimosaceae	M
5.	Horsetail She-oak	Chavuku	*Casuarina litorea*	Casuarinaceae	E
6.	Frywood	Vaagaimaram	*Albizia lebbeck*	Mimosaceae	E
7.	River tamarind	Subabul	*Leucaena leucocephala*	Mimosaceae	NE
8.	Velvet mesquite	Mullu maram	*Prosopis juliflora*	Fabaceae	M
9.	Portia tree	Poovarasan	*Thespesia Populnea*	Malvaceae	E
10.	Indian ash tree	Othiyamaram	*Lannea coromandelica*	Anacardaceae	M
11.	Bael	Vilvam	*Aegle marmelos*	Rutaceae	M
12.	Indian gooseberry	Nelli	*Phyllanthus emblica*	Euphorbiaceae	EM
13.	Lemon	Ezhumuchaipalam	*Citrus lemon*	Rutaceae	EM
14.	Chinese chaste tree	Nochi	*Vitex negundo*	Verbenaceae	E
15.	Java Plum	Naval	*Syzygium cumini*	Myrtaceae	EM
16.	Thorny bamboo	Moongil	*Bambusa arundinacea*	Poaceae	E
17.	Chinaberry	Malai Vembu	*Melia azadarach*	Meliaceae	M
18.	Asian Palmyra palm	Panai maram	*Borassus flabellifer*	Arecaceae	E
19.	Tree of heaven	Vathikuchimaram	*Ailanthus excelsa*	Simaroubaceae	E
20.	Tahitian gooseberry	Aranelli	*Phyllanthus acidus*	Euphorbiaceae	EM
21.	Indian mulberry	Nuna maram	*Morinda tinctoria*	Rubiaceae	E
22.	Pongamia pinnata	Pongam	*Millettia pinnata*	Fabaceae	M
23.	Tasmanian blue gum	Eucalyptus	*Eucalyptus globulus*	Myrtaceae	EM
24.	Guava	Koyya	*Psidium guajava*	Myrtaceae	EM
25.	Sacred Tree	Thenthangkottai	*Butea monosperma*	Fabaceae	E
26.	Monoon longifolium	Nettulingamaram	*Polyalthiya longifolia*	Annonaceae	NE
27.	Egyptian Pea	Sitthagathi	*Sesbania sesban*	Fabaceae	M
28.	Cluster fig	Atthi	*Ficus racemosa*	Moraceae	EM
29.	Tamarind	Puliyamaram	*Tamarindus indica*	Legumes	EM
30.	Drumstick tree	Murunga maram	*Moringa oleifera*	Moringaceae	EM
31.	Ficus religiosa	Arasamaram	*Ficus religiosa*	Moraceae	E
32.	Oil cake tree	Usil	*Albizia amara*	Mimosaceae	E

33.	Papaya	Pappali maram	*Carica papaya L*	Caricaceae	EM
34.	Banana tree	Vazhaimaram	*Musa acuminata*	Musaceae	EM
35.	Vegetable hummingbird	Agatthi	*Sesbania grandiflora*	Fabaceae	M
36.	Teak	Thekku	*Tectona grandis*	Verbenaceae	E
37.	Clammy Cherry	Naruvili	*Cordia obliqua*	Cordiaceae	M
38.	Indian jujub	Elanthai	*Ziziphus mauritiana*	Rhamnaceae	EM
Shrubs					
1.	Malabar catmint	Paeimirati	*Anisomeles malabarica*	Lamiaceae	M
2.	Coromandel Boxwood	Kaarai	*Canthium coromandelicum*	Rubiaceae	EM
3.	Apple of sodom	Vellai erukku	*Calotropis procera*	Asclepidaceae	E
4.	Broom creeper	Kattukodi	*Cocculus hirsutus*	Menispermaceae	M
5.	Hopbush	Virali chedi	*Dodonaea viscosa*	Sapindaceae	E
6.	Indian Atalantia	Kattu elumichai	*Atalantia monophylla*	Rutaceae	M
7.	Bellyache bush	Kattamanakku	*Jatropha gossypifolia*	Euphorbiaceae	NE
8.	Porcupine flower	Kaatukanagambaram	*Barleria prionitis*	Acanthaceae	EM
9.	Avaram	Avarai	*Senna auriculata*	Fabaceae	M
10.	Castor bean	Amanakku	*Ricinus communis*	Euphorbiaceae	M
11.	Shoe flower	Chemparuthi	*Hibiscu rosa-sinensis*	Malvaceae	EM
12.	Malabar nut	Adathoda	*Justicia adhatoda*	Acanthaceae	M
13.	Turkey berry	Sundai	*Solanum torvum*	Solanaceae	EM
14.	Castor oil plant	Aamannukku	*Ricinus communis*	Euphorbiaceae	EM
15.	Milk Weed	Erukku	*Calotropis gigantea*	Apocynaceae	M
16.	Touch-me-not	Thottalchinungi	*Mimosa pudica*	Mimosaceae	M
17.	Indian mallow	Thuthi	*Abutilon indicum*	Meliaceae	M
18.	West Indian Lantana	Unni chedi	*Lantana camara*	Verbenaceae	E
Herbs					
1.	Watergrass	Mukkutikorei	*Bulbostylis barbata*	Cyperaceae	NE
2.	Country Mallow	Nilatutti	*Sida cordifolia*	Malvaceae	M
3.	Sessile Joyweed	Ponnanganii	*Alternanthera sessilis*	Amaranthaceae	M
4.	Chamber bitter	Malai Kizhanelli	*Phyllanthus urinaria L.*	Euphorbiaceae	M
5.	Watergrass	Mukkorraikkorai	*Bulbostylis barbata*	Cyperaceae	M
6.	Madagascar Periwinkle	Nithyakalyani	*Catharanthus roseus*	Apocynaceae	NE
7.	Sand Herbage	Manal keerai	*Gisekia pharnaceoides*	Aizoaceae	M
8.	Common couch	Naaippul	*Agropyron repens*	Poaceae	M
9.	Taro	Sempu	*Colocasia esculenta*	Araceae	M
10.	Carrot grass	Parttiniyam	*Parthenium hysterophorus*	Asteraceae	NE
11.	Aloe barbadensis	Katrazhai	*Aloe vera*	Asphodelaceae	EM

12.	Indian Mercury	Kuppamani	*Acalypha indica*	Euphorbiaceae	EM
13.	Bristly Needle Grass	Thudappampillu	*Aristida setacea*	Poaceae	E
14.	Indian nettle	Nayuruvi	*Achyranthes aspera*	Amaranthaceae	M
15.	Nut grass	Korai kilangu	*Cyperus rotundus*	Cyperaceae	M
16.	Indian doab	Arugampul	*Cynodon dactylon*	Poaceae	E
17.	Datura metel	Oomathai	*Datura metel*	Solanaceae	M
18.	Large Caltrops	Yanai nerunji	*Pedalium murex L.*	Pedaliaceae	E
19.	Commelina benghalensis	Kanavalai	*Commelina benghalensi*	Commelinaceae	M
20.	Monarch redstem	Neermel nerupu	*Ammannia baccifera*	Lythraceae	M
21.	Common leucas	Thumbai	*Leucas aspera*	Lamiaceae	M
22.	Green amaranth	Kuppaikeerai	*Amaranthus viridis*	Amaranthaceae	M
23.	King of Bitters	Nilavaemboo	*Andrographis paniculata*	Acanthaceae	M
24.	Billygoat weed	Poompillu	*Ageratum conyzoides*	Asteraceae	EM
25.	Holy basil	Thulasi	*Ocimum tenuiflorum*	Lamiaceae	M
26.	Asthma-plant	Ammanpachaiarisi	*Euphorbia hirta*	Euphorbiaceae	M
27.	Tridax daisy	Thatha poo	*Tridax procumbens*	Asteraceae	M
28.	Spiny amaranth	Mullukeerai	*Amaranthus spinosus*	Amaranthaceae	M
29.	Floating Lace Plant	Kottikilangu	*Aponogeton natans*	Aponogetonaceae	EM
30.	Mexican prickly poppy	Biramathandu	*Argemone mexicana*	Papaveraceae	M
31.	American Basil	Naaithulasi	*Ocimum americanum*	Lamiaceae	M
Climber					
1.	Balloon vine	Mudakkathan	*Cardiospermum halicacabum*	Sapindaceae	M
2.	Ivy gourd	Kovai	*Coccinia grandis*	Cucurbitaceae	M
3.	Asian pigeonwings	Sanguppu	*Clitoria ternatea*	Fabaceae	M
4.	Bitter apple	Peikkumatti	*Citrullus colocynthis*	Cucurbitaceae	M
5.	Wild water lemon	Poonai puduku chedi	*Passiflora foetida*	Passifloraceae	M
6.	Stemmed vine	Perandai	*Cissus quadrangularis*	Vitaceae	M
Creeper					
1.	Spreading Hogweed	Saaranai Keerai	*Boerhavia diffusa*	Nyctaginaceae	M
2.	Nut grass	Korai	*Cyperus rotandus*	Poaceae	M
3.	Cucumis maderaspatanus	Musumusukkai	*Mukia maderaspatana*	Cucurbitaceae	M
4.	Grona triflora	Siru puladi	*Desmodium triflorum*	Fabaceae	EM
Grasses					
1.	Eragrostis	Pullu	*Eragrostis ferruginea*	Poaceae	E
2.	Windmill grass	Chevvarakupul	*Chloris barbata*	Amaranthaceae	NE
3.	Great brome	Thodappam	*Bromus diandrus*	Poaceae	E
Cactus					

1.	Indian fig opuntia	Sapathikalli	*Opuntia ficus-indica*	Cactaceae	M
2.	Fleshy Spurge	Chathurakkalli	*Euphorbia antiquorum*	Euphorbiaceae	M

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

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

There are no reserve forests located around 10 km radius. No protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no impacts due to this mining activity.

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

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

3.8. Faunal analysis

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.

3.8.1. Fauna Composition in the Core Zone

A total of 26 varieties of species were observed in the Core zone of Udaiyalipatti Village Cluster area, Rough stone and gravel quarry (Table No.3.3) among them numbers Insects 8, Reptiles 3, Mammals 2, and Avians 13. A total of 26 species belonging to 18 families have been recorded from the core mining lease area. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and twelve species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 13 species of bird were sighted in the mining lease area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table No: 3.3. Fauna in the Core zone of Thiru.R. Jaffer Ali, Melur Village, Rough stone and gravel quarry

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972	IUCN Red List data
Insects				
1.	Striped tiger	*Danaus plexippus*	Schedule IV	LC
2.	Colotis danae	*Colotis danae*	NL	LC
3.	Grasshopper	*Hieroglyphus sp*	NL	LC
4.	Chocolate pansy	*Junonia iphita*	NL	LC
5.	Common Tiger	*Danaus genutia*	NL	NL
6.	Termite	*Hamitermes silvestri*	NE	LC
7.	Red-veined darter	*Sympetrum fonscolombii*	NL	LC
8.	Tawny coster	*Danaus chrysippus*	Schedule IV	LC
Reptiles				
1.	Garden lizard	*Calotes versicolor*	NL	LC
2.	Common skink	*Mabuya carinatus*	NL	LC
3.	Green vine snake	*Ahaetulla nasuta*	Schedule IV	NL
Mammals				
1.	Indian Field Mouse	*Mus booduga*	Schedule IV	NL
2.	Asian Small Mongoose	*Herpestes javanicus*	Schedule (Part II)	LC
Aves				
1.	Common myna	*Acridotheres tristis*	NL	LC
2.	House crow	*Corvussplendens*	NL	LC
3.	Koel	*Eudynamys*	Schedule IV	LC
4.	Asian green bee-eater	*Meropsorientalis*	NL	LC

5.	Rose-ringed parkeet	*Psittacula krameri*	NL	LC
6.	Common quail	*Coturnix coturnix*	Schedule IV	LC
7.	Black drongo	*Dicrurus macrocercus*	Schedule IV	LC
8.	Cattle egret	*Bubulcus ibis*	NE	LC
9.	Shikra	*Laniusexcubitor*	Schedule IV	LC
10.	Paddy Bird	*Ardea grayii grayii*	Schedule IV	LC
11.	Rock pigeon	*Columbidae*	Schedule IV	LC
12.	Indian Robin	*Saxicoloides fulicata*	Schedule IV	LC
13.	Pond-Heron	*Ardeo labacchus*	Schedule IV	LC

***NL- Not listed, LC- Least Concern**

3.8.2. 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 forests in the buffer zone. As such there are no chances of the 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 ElephantCorridors, 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, Small blue Kingfisher, Indian rollers, Rose-ringed parkeet, Common Mynas, Black drangos, Crows, Woodpecker bird, etc.,.

The list of bird species recorded during field survey and literature from the study area are given in Table 3.5. The list of reptilian species recorded during field survey and literature from the study area are given in Table 3.6. The list of insect's species recorded during the field survey and literature from the study area are given in Table 3.7. The list of Amphibian species recorded during the field survey and literature from the study area are given in Table 3.8. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Taxonomically a total of 49 species belonging to 36 families have been recorded from the buffer zone area. Based on habitat classification the majority of species were Insect 18, followed by birds 14, Reptiles 10, Mammals 5, and amphibians 2. There are six Schedule II species, and twenty- six species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 14 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 insects, and three amphibians was observed during the extensive field visit Euphlyctis cyanophlyctis, Euphlyctis hexadactylus, and Bufomelanostictus. The result of the Buffer zone of fauna studies shows that Nymphalidae, Colubridae, and Scincidae are the main dominating species in the study area. There is no Schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table 3.4. List of Fauna & Their Conservation Status,
Mammals: (*directly sighted animals & Secondary data)

SI. No	Common Name	Scientific Name	Schedule WLPA 1972	IUCN Red List data
	Indian hare	*Lepus nigricollis*	Schedule (Part II)	LC
1	Indian palm squirrel	*Funambulus palmarum*	Schedule IV	LC
2	Indian Field Mouse	*Mus booduga*	Schedule IV	LC
3	Asian Small Mongoose	*Herpestes javanicus*	Schedule (Part II)	LC

5	Brown rat	*Rattus norwegicus*	Schedule IV	LC

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972	IUCN Red List data
	Rat snake	*Ptyas mucosa*	Sch II (Part II)	LC
1	Garden lizard	*Calotes versicolor*	NL	LC
2	Russell's viper	*Vipera russseli*	Sch II (Part II)	LC
3	Fan-Throated Lizard	*Sitanaponticeriana*	NL	LC
4	Indian wall lizard	*Hemidactylus flaviviridis*	Schedule IV	NL
5	Green vine snake	*Ahaetulla nasuta*	Schedule IV	NL
6	Chameleon	*Chameleon zeylanicus*	Sch II (Part II)	LC
7	Common krait	*Bungarus caeruleus*	Schedule IV	NL
8	Indian cobra	*Naja naja*	Sch II (Part II)	LC
10	Common skink	*Mabuya carinatus*	NL	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

Table 3.5. List of Avian Species Recorded in the Study Area

Avian (*directly sighted species & Secondary data)

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972	IUCN Red List data
1.	Indian Robin	*Saxicoloides fulicatus*	Schedule IV	LC
2.	Pond Heron	*Ardeola grayii*	Schedule IV	LC
3.	Cattle egret	*Bubulcus ibis*	NL	LC
4.	Common myna	*Acridotheres tristis*	NL	LC
5.	Paddy Bird	*Ardea grayii grayii*	Schedule IV	LC
6.	House Sparrow	*Passer domesticus*	Schedule IV	LC
7.	Asian green bee-eater	*Meropsorientalis*	NL	LC
8.	Small blue Kingfisher	*Alcedo atthis*	Schedule IV	LC
9.	Rose-ringed parkeet	*Psittacula krameri*	NL	LC
10.	Small Sunbird	*Nectarinia asiatica*	Schedule IV	LC
11.	Black drongo	*Dicrurus macrocercus*	Schedule IV	LC
12.	Indian Robin	*Saxicoloides fulicata*	Schedule IV	LC
13.	Woodpecker bird	*Picidae*	Schedule IV	LC
14.	Two-tailed Sparrow	*Dicrurus macrocercus*	Schedule IV	LC
15.	Grey Francolin	*Francolinus pondicerianus*	Schedule IV	LC
16.	House crow	*Corvussplendens*	NL	LC
17.	Common Coot	*Fulica atra*	Schedule IV	LC
18.	House sparrow	*Passer domesticus*	Schedule IV	LC
19.	Koel	*Eudynamys*	Schedule IV	LC
20.	Indian Roller	*Coracias benghalensis*	Schedule IV	LC
21.	Cuckoo	*Cuculuscanorus*	Schedule IV	LC
22.	Common quail	*Coturnix coturnix*	Schedule IV	LC

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

Table 3.6. List of Reptiles either spotted or reported from the study area

(*indicates direct observations & Secondary data)

Table.3.7. List of Butterflies and insects reported from the study area

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972	IUCN Red List data
1.	Indian honey bee	*Apis cerana*	Schedule IV	LC
2.	Striped tiger	*Danaus plexippus*	Schedule IV	LC
3.	Termite	*Hamitermes silvestri*	NE	LC
4.	Crimson tip	*Colotis danae*	NL	LC
5.	Tawny coaster	*Danaus chrysippus*	Schedule IV	LC
6.	Grasshopper	*Hieroglyphus sp*	NL	LC
7.	Red-veined darter	*Sympetrum fonscolombii*	NL	LC
8.	Chocolate pansy	*Junonia iphita*	NL	LC
9.	Ant	*Camponotus Vicinus*	NL	NL
10.	Common Tiger	*Danaus genutia*	Schedule IV	LC
11.	Dragonfly	*Ceratogomphus pictus*	Schedule IV	LC
12.	Milkweed butterfly	*Danainae*	NL	LC
13.	Common Tiger	*Danaus genutia*	Schedule IV	LC
14.	Grass yellow	*Eurema hecabe*	NL	LC
15.	Common Indian crow	*Euploea core*	Schedule IV	LC
16.	Lesser grass blue	*Zizina Otis indica*	Schedule IV	LC
17.	Grass yellow	*Eurema hecabe*	Schedule IV	LC
18.	Chocolate pansy	*Junonia iphita*	NL	LC

3.9. Aquatic Ecosystem

The study area has many small and big water bodies away from the proposed project site. But no major drainage system can be found within the study area. In the study area, natural drainage is represented by few narrow and shallow canals, which remain dry for major time of the year. Apart from these, there are few water bodies within the study area, most. The seasonal fluctuation of water level (mostly during December) is very evident for these water bodies and most of the water bodies dry up during peak summer season.

3.9.1. Aquatic Faunal Diversity

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

Table 3.8 Amphibians Observed/Recorded from the Study Area

SI. No	Common Name	Zoological Name	WLPA, 1972	IUCN Red List data
1.	Indian Skipper Frog	*Euphlyctis cyanophlyctis*	Schedule IV	LC
2.	Indian Pond Frog	*Euphlyctis hexadactylus*	Schedule IV	LC
3.	Indian Toad	*Bufomelanostictus*	Schedule IV	LC

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

3.9.2. Effect on Migratory corridors, Nesting and Breeding sites.

There are no migratory corridors, nesting and breeding sites within the proposed site or in the core area and study area. No need to take any mitigation measures in this connection.

3.9.3. Effect on REET species

From the list, no Rare or Endangered or Endemic or Threatened (REET) species or any species listed in Schedule I of the Wildlife (Protection) Act. Hence, species specific and habitat specific mitigation measures are not needed in this connection. The project site does not overlap with any of the recognized Ramsar sites.

3.10. Aquatic Vegetation

No Aquatic diversity is noticed in the core zone area. Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. Typha angustata can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, Eichhornia crassipes has taken its roots and covers the entire water surface by its sprawl and invasion. All the aquatic plant species listed in Table 3.9.

Table No: 3.9. List of aquatic plants observed in the study area

Sl. No	Scientific name	Common Name	Vernacular Name (Tamil)	IUCN Red List of Threatened Species
1	*Nymphaea nauchali*	Blue lotus	Alli	LC
2	*Cyperus exaltatus*	Tall Flat Sedge	Koraikizhangu	LC
3	*Aponogetonnatans*	Floating laceplant	Kottikizhnagu	NA
4	*Colocassia esculenta*	Taro	Seppakizhangu	LC
5	*Carex cruciata*	Cross Grass	Koraipullu	NA
6	*Cynodon dactylon*	Scutch grass	Arugampul	LC
7	*Eichornia crassipe*	Water hyacinth	Agayatamarai	NA
8	*Nymphaea nouchali*	Blue waterlily	Nellambal	LC

*LC- Least Concern, NA-Not yet assessed

3.11. Findings/Results

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

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

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

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

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

Breeding and spawning grounds

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

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

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

There are no endangered, endemic, and RET Species. There is no Schedule I species in the 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.

3.12. Conclusion

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

3.6 SOCIO ECONOMIC ENVIRONMENT

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

3.6.1 STRUCTURE STUDY

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

FIGURE 3.27: STRUCTURE MAP

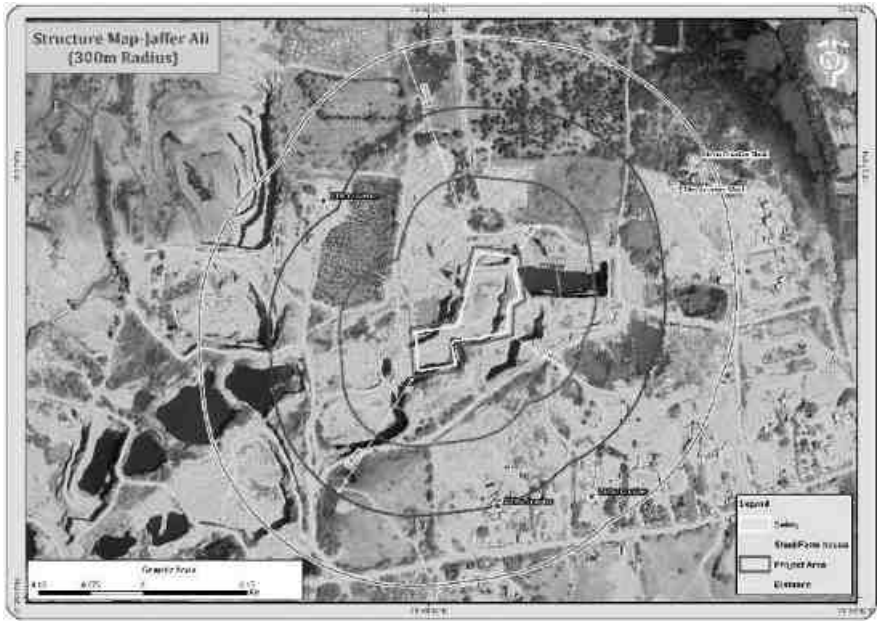


TABLE 3.40: ENUMERATION OF STRUCTURES 0- 300m radius

Enumeration of Structure from 0 – 300m Radius						
Structure Numbers	**Distance & Direction from the project site**	**Structure Details and Usage Purpose**	**Type of Structure Structures (Kutcha/ Brick/ Cement/ RCC/ Framed Structures)**	**No. of Occupants**	**Structure belongs to owner (Yes/No)**	**Remarks**
1	200m – South East	Crusher	Framed Structure	3Nos	No	Production of M-Sand, P-Sand & Jally – No Stay
2	210m – North West	Crusher	Framed Structure	4Nos	No	Production of M-Sand, P-Sand & Jally – No Stay
3	230m – North East	Crusher Shed	Sheet Structure	Nil	Yes	Used to store Crusher equipment's and Materials – No Stay
4	260m - South	Crusher	Framed Structure	3Nos	No	Production of M-Sand, P-Sand & Jally – No Stay
5	280m – North East	Crusher Shed	Sheet Structure	Nil	Yes	Used to store Crusher equipment's and Materials – No Stay

3.6.2 Objectives of the Study

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

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

3.6.3 Scope of Work

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

3.6.4 District Profile

Pudukkottai is a district in Tamil Nadu, India is an administrative division of India. Pudukkottai district is further subdivided into sub-divisions/tehsils or talukas. As per the Census 2011 Pudukkottai District's total population is 1618345. Total geographical area is 4644.00 Ha. Total number of households in Pudukkottai District are 387679. Total male population in wardha is 803188 and female population is 815157. Total population under the age of six is 179688.

Total literacy rate of Pudukkottai district is 77.19 %. Sex ratio of wardha District is 1015 per 1000 male. Population Density of Pudukkottai District is 348/Ha.

Village profile

Melur is a village located in Kulathur taluka of Pudukkottai district in Tamil Nadu, India. It is situated 9km away from sub-district headquarter Keeranur (tehsildar office) and 7km away from district headquarter Pudukkottai. As per 2009 stats, Melur village is also a gram panchayat.

Melur is a large village located in Kulathur Taluka of Pudukkottai district, Tamil Nadu with total 602 families residing. The Melur village has population of 2534 of which 1230 are males while 1304 are females as per Population Census 2011.

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

Population	Area (Ha)	Density (P/Ha)	Sex Ratio	Literacy
2534	855.7	2	1060	74.03%

Nearest Town of the Melur village is Pudukottai and nearest town distance is 7 km. Pincode of Melur village is 622504. As per census 2011 village code of village Melur is 639364.

TABLE 3.42: DEMOGRAPHICS POPULATION OF MELUR VILLAGE

Total Population	Male Population	Female Population
2534	1230	1304

Sex Ratio of Melur Village -Census 2011

In Melur village population of children with age 0-6 is 324 which makes up 12.79 % of total population of village. Average Sex Ratio of Melur village is 1060 which is higher than Tamil Nadu state average of 996. Child Sex Ratio for the Melur as per census is 884, lower than Tamil Nadu average of 943.

Literacy of Melur Village

Melur village has lower literacy rate compared to Tamil Nadu. In 2011, literacy rate of Melur village was 74.03 % compared to 80.09 % of Tamil Nadu. In Melur Male literacy stands at 83.18 % while female literacy rate was 65.63 %.

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

Description	Census 2011 Data
Village Name	Melur
Taluk Name	Kulathur
District Name	Pudukkottai
State Name	Tamil Nadu
Total Population	2534
Total Area	855.7 (Hectares)
Total No of House Holds	602
Total Male Population	1230

Description	Census 2011 Data
Total Female Population	1304
0-6 Age group Total Population	324
0-6 Age group Male Population	172
0-6 Age group Female Population	152
Total Person Literates	1636
Total Male Literates	880
Total Female Literates	756
Total Person Illiterates	898
Total Male Illiterates	350
Total Female Illiterates	548
Scheduled Cast Persons	512
Scheduled Cast Males	246
Scheduled Cast Females	266
Scheduled Tribe Persons	1
Scheduled Tribe Males	0
Scheduled Tribe Females	1

Worker's profile of Melur Village

Total working population of Melur is 1110 which are either main or marginal workers. Total workers in the village are 1110 out of which 679 are male and 431 are female. Total main workers are 1099. Total marginal workers of village are 11.

TABLE 3.44: MELUR WORKING POPULATION ---CENSUS 2011

	Total	Male	Female
Total Workers	1110	679	431
Main Workers	1099	677	422
Main Workers Cultivators	479	340	139
Agriculture Labourer	278	98	180
Household Industries	16	11	5
Other Workers	315	228	87
Marginal Workers	11	2	9

	Total	Male	Female
Non-Working Persons	1424	551	873

TABLE 3.45: MELUR VILLAGE DATA ---CENSUS 2011

Description	Data
Village Name	Melur
Gram Panchayat Name	Melur
Taluk Name	Kulathur
Reference Year	2009
Sub District HQ Name	Keeranur
Sub District HQ Distance	9 Km
District HQ Name	Pudukottai
District HQ Distance	7 Km
Nearest Town	Pudukottai
Nearest Town Distance	7 Km
Pincode	622504

TABLE 3.46: MELUR MANUFACTURERS AND AGRICULTURAL COMMODITIES DATA

Description Type	Commodities
Agricultural Commodities (First)	PADDY
Manufacturers Commodities (First)	CEMENT PLANTS
Agricultural Commodities (Second)	GROUNDNUT
Manufacturers Commodities (Second)	AGRICULTURAL MACHINERY
Agricultural Commodities (Third)	SUGARCANE
Manufacturers Commodities (Third)	TEXTILE

TABLE 3.47: POPULATIN DATA AROUND 5KM RADIUS

SI.No.	Village Name	NO HH	Total Population	Male	Female	Total SC Population	Male SC	Female SC	Total ST Population	Male ST	Female ST	Total Literate	Male Literate	Female Literate	Total Illiterate	Male Illiterate	Female Illiterate	Total Workers
1	Ariyur	261	1194	645	549	294	148	146	3	0	3	821	503	318	373	142	231	435
2	Ayingudi	600	2582	1328	1254	1143	593	550	0	0	0	1625	968	657	957	360	597	1607
3	Irumbali	283	1311	684	627	0	0	0	0	0	0	925	522	403	386	162	224	569
4	Madiyanallur	353	1552	766	786	349	173	176	0	0	0	916	509	407	636	257	379	847
5	Marayappatti	389	1757	891	866	743	402	341	0	0	0	1052	593	459	705	298	407	990
6	Melur	602	2534	1230	1304	512	246	266	1	0	1	1636	880	756	898	350	548	1110
7	Muthukkadu	780	3176	1606	1570	590	281	309	3	3	0	2333	1294	1039	843	312	531	1397
8	Panampatti	516	2292	1167	1125	657	335	322	0	0	0	1442	810	632	850	357	493	1039
9	Perunijinai	223	919	448	471	416	194	222	0	0	0	544	306	238	375	142	233	468
10	Sathyamangalam	963	4051	2055	1996	1160	596	564	2	0	2	2566	1492	1074	1485	563	922	1507
11	Thiruvengavasal	142	615	314	301	86	44	42	0	0	0	368	217	151	247	97	150	280
12	Vellanur	1454	6014	3061	2953	1365	697	668	217	103	114	4095	2286	1809	1919	775	1144	2986
13	Vengavayal	201	854	434	420	95	46	49	0	0	0	553	295	258	301	139	162	548

SI.No.	Village Name	Male Workers	Female Workers	Total Main Workers	Main Workers	Main Workers	Main Cultivation	Main Cultivation	Main Cultivation	Main Agriculture	Main Agriculture	Main Agriculture	Main Other Workers	Main Other Workers	Main Other Workers Female	Total Margin Workers
1	Ariyur	295	140	419	286	133	131	100	31	146	72	74	131	105	26	16
2	Ayingudi	867	740	667	474	193	237	202	35	229	129	100	177	129	48	940
3	Irumbali	442	127	391	341	50	116	109	7	73	52	21	191	171	20	178
4	Madiyanallur	473	374	844	471	373	135	87	48	608	299	309	99	83	16	3
5	Marayappatti	555	435	819	472	347	604	344	260	141	73	68	74	55	19	171
6	Melur	679	431	1099	677	422	479	340	139	278	98	180	315	228	87	11
7	Muthukkadu	952	445	1304	920	384	205	188	17	470	223	247	608	502	106	93

8	Panampatti	658	381	990	633	357	266	209	57	381	158	223	299	232	67	49
9	Perunijinai	261	207	388	248	140	80	46	34	141	77	64	145	118	27	80
10	Sathyamangalam	1190	317	1440	1143	297	136	117	19	1007	781	226	184	144	40	67
11	Thiruvengavasal	193	87	271	185	86	104	80	24	115	61	54	48	42	6	9
12	Vellanur	1846	1140	2278	1555	723	458	318	140	440	234	206	1346	984	362	708
13	Vengavayal	288	260	295	275	20	106	101	5	139	131	8	50	43	7	253

SI.No.	Village Name	Margin Workers	Margin Workers Female	Margin Cultivation	Margin Cultivation	Margin Cultivation	Margin House Hold	Margin House Hold	Margin House Hold	Margin Other Workers	Margin Other Workers	Margin Other Workers	Non Worker Population	Non Worker Male	Non Worker Female
1	Ariyur	9	7	2	2	0	0	0	0	10	4	6	759	350	409
2	Ayingudi	393	547	156	23	133	7	2	5	30	23	7	975	461	514
3	Irumbali	101	77	5	4	1	26	10	16	39	36	3	742	242	500
4	Madiyanallur	2	1	0	0	0	0	0	0	0	0	0	705	293	412
5	Marayappatti	83	88	2	1	1	0	0	0	2	1	1	767	336	431
6	Melur	2	9	0	0	0	0	0	0	11	2	9	1424	551	873
7	Muthukkadu	32	61	10	2	8	6	3	3	67	24	43	1779	654	1125
8	Panampatti	25	24	7	5	2	4	2	2	18	10	8	1253	509	744
9	Perunijinai	13	67	2	0	2	2	0	2	58	8	50	451	187	264
10	Sathyamangalam	47	20	6	5	1	3	1	2	29	18	11	2544	865	1679
11	Thiruvengavasal	8	1	2	2	0	0	0	0	6	5	1	335	121	214
12	Vellanur	291	417	12	7	5	23	6	17	192	54	138	3028	1215	1813
13	Vengavayal	13	240	7	1	6	0	0	0	2	0	2	306	146	160

TABLE 3.48: COMMUNICATION & TRANSPORT FACILITIES IN THE STUDY AREA

Sl	Village Name	PO	SPO	PTO	T	PCO	MP	IC / CSC	PCF	BS	PBS	RS	NH	SH	MDR	BTR	GR	NWR	FP
1	Ariyur	2	2	2	1	2	1	2	2	1	1	2	2	1	1	1	1	2	1
2	Ayingudi	2	2	2	1	2	1	2	2	1	1	2	2	2	1	1	1	2	1
3	Irumbali	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	1	2	1
4	Madiyanallur	2	1	2	2	2	1	2	2	1	1	2	2	2	2	1	1	2	1
5	Marayappatti	2	2	2	1	2	1	2	2	1	1	2	2	2	2	1	1	2	1
6	Melur	2	1	2	1	2	1	2	2	1	1	2	1	2	2	2	1	2	1
7	Muthukkadu	2	1	2	1	2	1	2	2	1	1	2	2	2	1	1	1	2	1
8	Panampatti	2	2	2	1	2	1	2	2	1	1	2	2	2	2	1	1	2	1
9	Perunijinai	2	1	2	1	1	1	2	2	1	1	2	2	1	1	1	1	2	1
10	Sathyamangalam	2	1	2	1	1	1	2	2	1	1	2	1	2	1	1	1	2	1
11	Thiruvengavasal	2	2	2	1	1	1	2	2	1	1	2	2	2	2	1	1	2	1
12	Vellanur	2	1	2	1	2	1	2	2	1	1	2	1	2	1	1	1	2	1
13	Vengavayal	2	2	2	2	2	1	2	2	1	1	2	2	2	1	2	2	2	1

TABLE 3.49: WATER & DRAINAGE FACILITIES IN THE STUDY AREA

Sl	Village Name	TP	CW	UCW	HP	TW/BH	S	R/C	T/P/L	CD	OD	CT
1	Ariyur	1	2	1	1	1	2	2	2	1	2	2
2	Ayingudi	1	2	1	1	1	2	2	2	1	1	2
3	Irumbali	1	2	2	1	1	1	2	1	2	2	2
4	Madiyanallur	1	2	2	2	2	2	2	2	1	1	2
5	Marayappatti	1	1	1	1	2	1	2	1	1	1	2
6	Melur	1	2	1	2	1	2	2	2	1	1	2
7	Muthukkadu	1	2	2	1	1	2	2	2	1	1	2
8	Panampatti	1	2	2	1	1	1	2	1	1	1	2
9	Perunijinai	1	2	1	2	1	1	2	2	1	2	2
10	Sathyamangalam	1	2	1	1	1	1	2	1	1	1	2

11	Thiruvengavasal	1	2	2	1	1	2	2	1	1	1	2
12	Vellanur	1	1	1	1	1	2	2	1	1	1	2
13	Vengavayal	2	2	2	2	2	2	2	2	2	2	2

TABLE 3.50: OTHER FACILITIES IN THE STUDY AREA

Sl	Village Name	ATM	CB	COB	ACS	SHG	PDS	RM	AMS	NC	NC-AC	CC	SF	PL		NPS	APS	BDRO	PS
1	Ariyur	2	2	2	2	1	1	2	2	1	1	1	2	2		2	1	1	1
2	Ayingudi	2	2	2	2	1	1	2	2	1	1	2	2	2		1	1	2	1
3	Irumbali	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	1	1
4	Madiyanallur	2	2	2	2	1	1	2	2	1	1	1	2	2		2	1	1	1
5	Marayappatti	2	2	2	1	1	1	2	2	1	1	2	2	2		1	1	2	1
6	Melur	2	2	2	2	1	1	2	2	1	1	1	1	1		1	1	2	1
7	Muthukkadu	2	2	2	2	1	1	2	2	1	1	1	1	2		1	1	1	1
8	Panampatti	2	2	2	2	1	1	2	2	1	1	1	2	2		2	1	1	1
9	Perunijinai	2	2	2	2	1	1	2	2	1	1	2	2	2		1	1	2	1
10	Sathyamangalam	1	1	1	1	1	1	1	1	1	1	1	1	2		1	1	1	1
11	Thiruvengavasal	2	2	2	1	1	1	2	2	1	1	1	2	2		1	2	1	1
12	Vellanur	2	2	1	1	1	1	1	2	1	1	2	1	1		1	1	1	1
13	Vengavayal	2	2	2	2	1	1	2	2	1	1	2	1	2		2	2	2	1

TABLE 3.51: EDUCATIONAL FACILITIES IN THE STUDY AREA

		PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
Sl	**Village Name**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**
1	Ariyur	1	2	1	2	2	2	2	2	2	2	2	1	2	1	2	2	2	2	2	1	2	2	2	2
2	Ayingudi	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Irumbali	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	Madiyanallur	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Marayappatti	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Melur	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Muthukkadu	1	2	1	1	1	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Panampatti	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9	Perunijinai	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	Sathyamangalam	1	2	1	2	1	2	1	2	2	2	2	2	2	1	2	2	2	1	2	1	2	2	2	2
11	Thiruvengavasal	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	Vellanur	1	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Vengavayal	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

TABLE 3.52: MEDICAL FACILITIES IN THE STUDY AREA

Sl. No.	**Village Name**	**CHC**	**PHC**	**PHSC**	**MCW**	**TBC**	**HA**	**HAM**	**D**	**VH**	**MHC**	**FWC**	**NGM-I/O**
1	Ariyur	0	0	0	0	0	0	0	0	0	0	0	c
2	Ayingudi	0	0	0	0	0	0	0	0	0	0	0	c
3	Irumbali	0	0	0	0	0	0	0	0	0	0	0	b
4	Madiyanallur	0	0	0	0	0	0	0	0	0	0	0	c
5	Marayappatti	0	0	0	0	0	0	0	0	0	0	0	c
6	Melur	0	0	1	0	0	0	0	0	0	0	0	b
7	Muthukkadu	0	1	1	1	1	0	0	1	1	0	1	
8	Panampatti	0	0	0	0	0	0	0	0	0	0	0	c
9	Perunijinai	0	0	0	0	0	0	0	0	0	0	0	c

10	Sathyamangalam	0	0	1	0	0	0	0	0	0	0	0	a
11	Thiruvengavasal	0	0	0	0	0	0	0	0	0	0	0	c
12	Vellanur	0	0	3	0	0	0	0	0	0	0	0	a
13	Vengavayal	0	0	0	0	0	0	0	0	1	0	0	a

3.6.5 Basic Amenities

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

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

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

3.6.6 Recommendation and Suggestion

- The main activities in the area are agriculture, quarry operation and Crushing units.
- Due to the project about 25 Nos of peoples will be benefitted directly due to employment and more than 50 Nos of peoples and Crushers will be benefitted through this project
- As part of CER activities proponent intends to spend Rs. 3.0 Lakhs.
- At the end of the life of the mine the mined-out pit will act as temporary reservoir, the collected rain water in the mine pit may utilized for the nearby agriculture lands.

Apart from the following general activities will be conducted

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

3.6.7 Summary &Conclusion

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

4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 GENERAL

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

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

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

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

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

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

4.1 LAND ENVIRONMENT:

4.1.1 Anticipated Impact

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

4.1.2 Mitigation Measures

- The 1.47.5 Ha of the land will be converted into temporary reservoir which will full fill the water scarcity in the drought season and the nearby agriculture land will be benefitted by the supply of water
- About 750 Nos of trees will be planted in the lease area and approach road will retain the eco system
- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development in the production
- Construction of garland drains all around the quarry pits and construction of silt trap at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- Fencing will be constructed before starting the mining operation and it will be maintained in the conceptual stage Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.1.1 Soil Environment

Impact on Soil Environment

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

Mitigation Measures

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

Waste Dump Management

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

4.2 WATER ENVIRONMENT

4.2.1 Anticipated Impact

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

4.2.2 Mitigation Measures

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

4.3 AIR ENVIRONMENT

4.3.1 Anticipated Impact

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

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

4.3.2 Modelling of Incremental Concentration from all Proposed Projects

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

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

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

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

4.3.2.1 Emission Estimation

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

The general equation for emissions estimation is:

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

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

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

4.3.2.2 Frame work of Computation & Model details

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

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

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

TABLE 4.1: ESTIMATED EMISSION RATE

PM_{10}			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.069905765	g/s
Blasting	Point Source	0.000403812	g/s
Mineral Loading	Point Source	0.038964519	g/s
Haul Road	Line Source	0.002486378	g/s/m
Overall Mine	Area Source	0.045190277	g/s
So2	Area Source	0.000289233	g/s
Nox	Area Source	0.000009870	g/s

FIGURE 4.1: AERMOD TERRAIN MAP

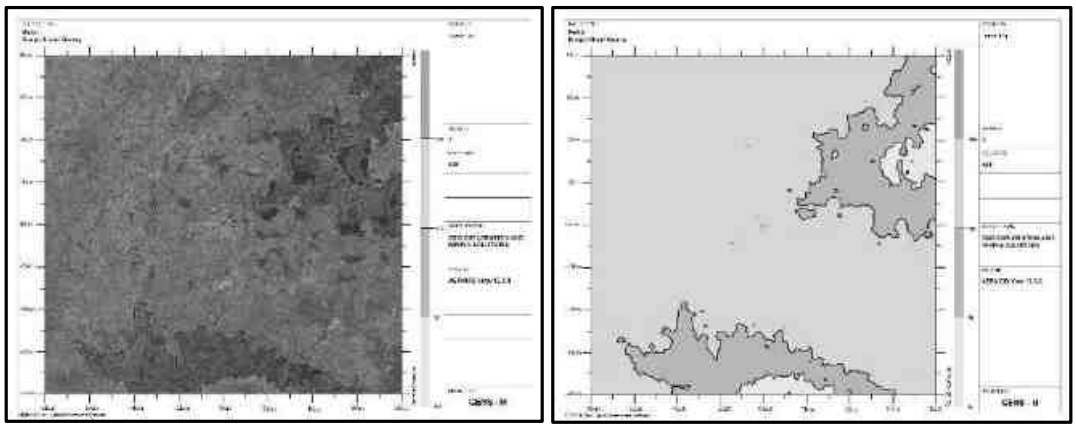


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM_{10}

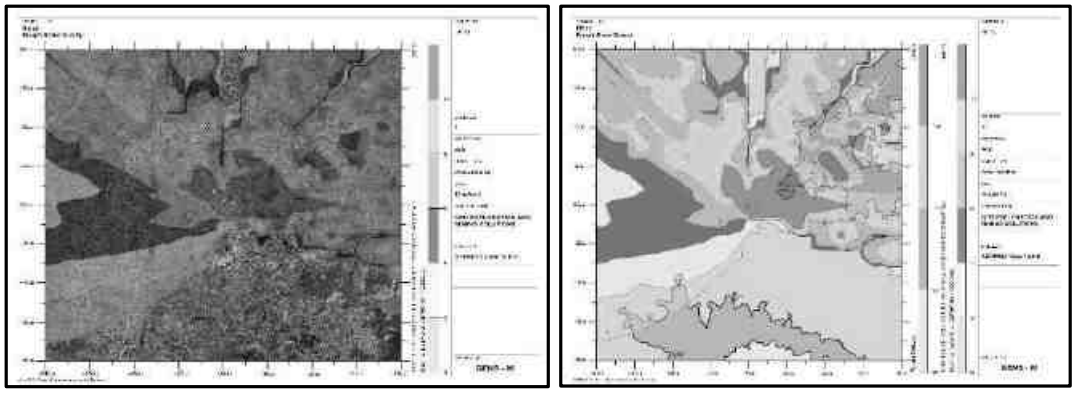


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF $PM_{2.5}$

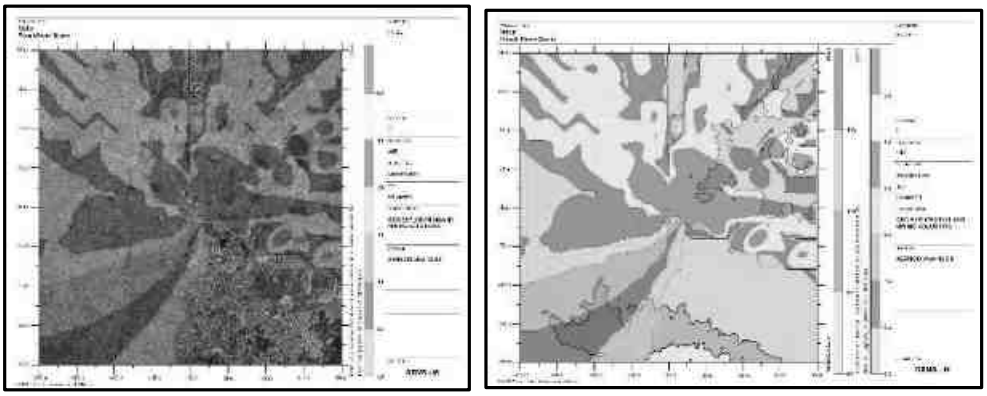


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF NO_X

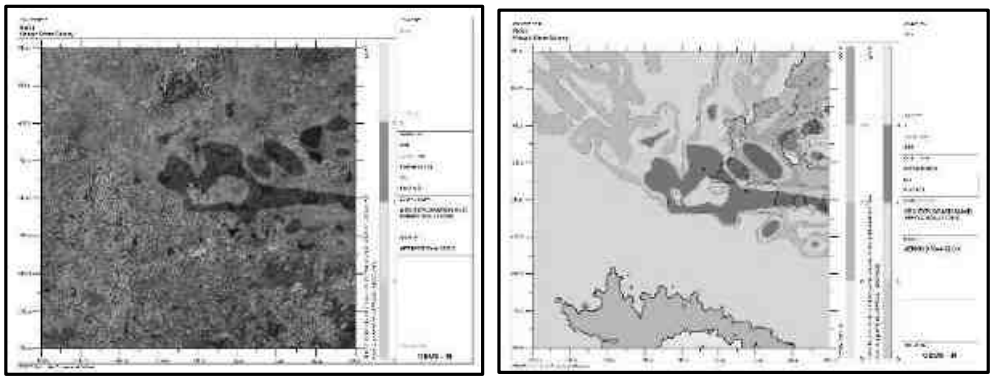


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF SO2

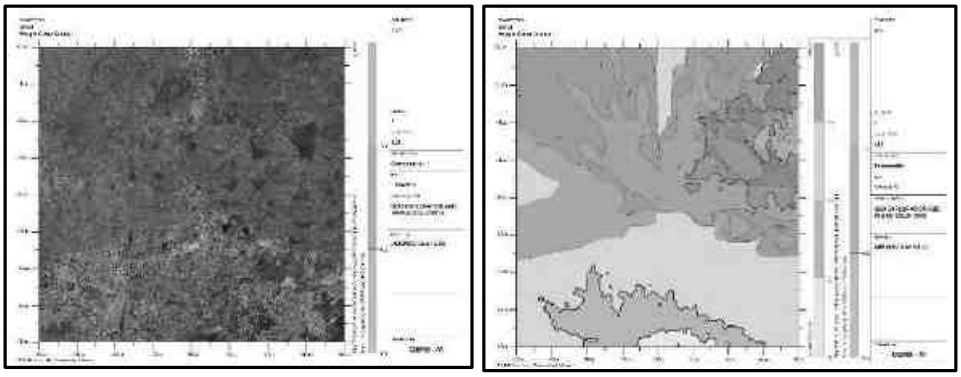
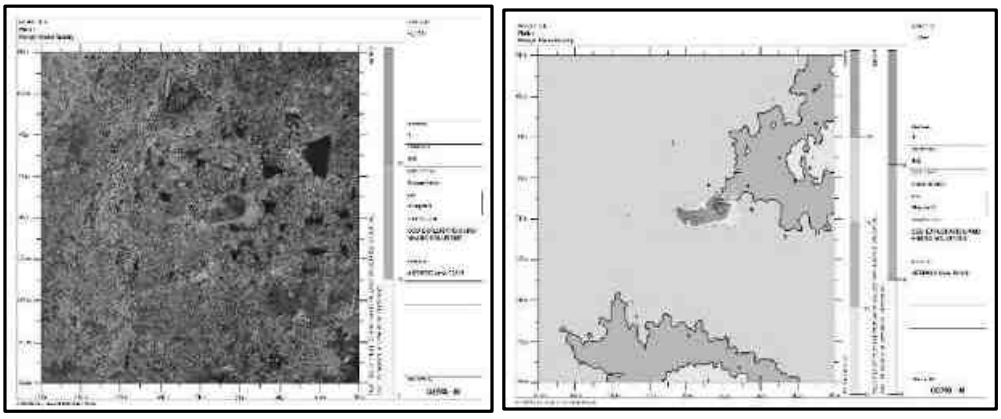


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE



4.3.2.3 Model Results

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

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

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	AverageBaselinePM10 (µg/m3)	Incremental value ofPM10 due to mining(µg/m3)	Total PM10 (µg/m3)
AAQ1	10°26'52.58"N 78°46'23.60"E	27	-15	32.2	12.87	45.07
AAQ2	10°26'43.88"N 78°46'34.67"E	439	-171	32.6	12.33	44.93
AAQ3	10°27'5.34"N 78°46'11.16"E	-351	372	32.8	12.60	45.4
AAQ4	10°26'58.15"N 78°44'39.91"E	-3150	146	37.0	5.79	42.79
AAQ5	10°26'25.26"N 78°45'32.93"E	-1525	-874	37.4	7.00	44.4
AAQ6	10°28'46.44"N 78°46'30.61"E	-741	3736	37.4	11.00	48.4
AAQ7	10°24'20.44"N 78°46'12.24"E	-422	-4733	37.7	0	37.7

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

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM2.5(µg/m3)	Incremental value of PM2.5 due to mining (µg/m3)	Total PM2.5 (µg/m3)
AAQ1	10°26'52.58"N 78°46'23.60"E	27	-15	19.1	5.73	24.83
AAQ2	10°26'43.88"N 78°46'34.67"E	439	-171	19.1	5.19	24.29
AAQ3	10°27'5.34"N 78°46'11.16"E	-351	372	19.4	5.41	24.81
AAQ4	10°26'58.15"N 78°44'39.91"E	-3150	146	21.9	3.25	25.15
AAQ5	10°26'25.26"N 78°45'32.93"E	-1525	-874	22.2	3.77	25.97
AAQ6	10°28'46.44"N 78°46'30.61"E	-741	3736	22.0	4.81	26.81
AAQ7	10°24'20.44"N 78°46'12.24"E	-422	-4733	22.4	0.20	22.6

TABLE 4.4: INCREMENTAL & RESULTANT GLC OF SO2

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO2 (µg/m3)	Incremental value due to mining (µg/m3)	Total SO2 (µg/m3)
AAQ1	10°26'52.58"N 78°46'23.60"E	27	-15	5.0	1.10	6.1
AAQ2	10°26'43.88"N 78°46'34.67"E	439	-171	5.0	1.03	6.03
AAQ3	10°27'5.34"N 78°46'11.16"E	-351	372	5.4	1.06	6.46
AAQ4	10°26'58.15"N 78°44'39.91"E	-3150	146	5.4	0.30	5.7
AAQ5	10°26'25.26"N 78°45'32.93"E	-1525	-874	5.4	0.62	6.02
AAQ6	10°28'46.44"N 78°46'30.61"E	-741	3736	5.5	1.00	6.5
AAQ7	10°24'20.44"N 78°46'12.24"E	-422	-4733	5.5	0	5.5

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF NOX

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NOx (µg/m3)	Incremental value due to mining(µg/m3)	Total NOx (µg/m3)
AAQ1	10°26'52.58"N 78°46'23.60"E	27	-15	20.1	6.69	26.79
AAQ2	10°26'43.88"N 78°46'34.67"E	439	-171	20.3	6.15	26.45
AAQ3	10°27'5.34"N 78°46'11.16"E	-351	372	20.2	6.42	26.62
AAQ4	10°26'58.15"N 78°44'39.91"E	-3150	146	23.0	0	23

AAQ5	10°26'25.26"N 78°45'32.93"E	-1525	-874	23.2	0	23.2
AAQ6	10°28'46.44"N 78°46'30.61"E	-741	3736	23.4	5.00	28.4
AAQ7	10°24'20.44"N 78°46'12.24"E	-422	-4733	23.3	0	23.3

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

4.3.3 Mitigation Measures

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

Advantages of Wet Drilling: -

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

Blasting –

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

Haul Road& Transportation –

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

- Over loading of tippers will be avoided to prevent spillage.
- It will be ensured that all transportation vehicles carry a valid PUC certificate
- Grading of haul roads and service roads to clear accumulation of loose materials

Green Belt –

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

Occupational Health –

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

4.4 NOISE ENVIRONMENT

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

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

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

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

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

Where:

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

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

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

4.4.1 Anticipated Impact

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

- Source data
- Receptor data
- Attenuation factor

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

TABLE 4.7: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY

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

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

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

TABLE 4.8: PREDICTED NOISE INCREMENTAL VALUES

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

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

4.4.2 Mitigation Measures

The following noise mitigation measures are proposed for control of Noise

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;

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

4.4.3 Ground Vibrations

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

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

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

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

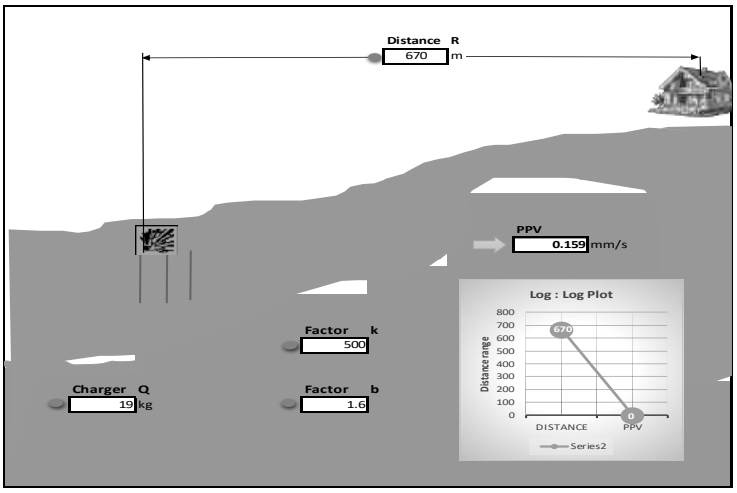
B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 4.9: PREDICTED PPV VALUES DUE TO BLASTING

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	19	670	0.159

FIGURE 4.6: GROUND VIBRATION PREDICTION



From the above graph, the charge per blast of 19.0kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. But the all the project proponent ensures that the charge per blast shall be carry out blasting twice or thrice a day based on the onsite conditions under the supervision of competent person employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting**.**

Mitigation Measures

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

- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 mm/s.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4.5 ECOLOGY AND BIODIVERSITY

4.5. Impact on the Biological Environment

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

4.5.1. Impact Identification and Evaluation

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

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

4.5.2. Impact on Flora

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

4.5.2.1. Anticipated Impact on agricultural land associated with flora

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

Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence, there will be no effect on the flora of the region.

4.5.3 Mitigation Measures

4.5.3.1. General Guidelines for Green Belt Development

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

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

4.5.3.2. Proposed Green Belt

Extensive green belt development will be started during the construction phase, which will continue till the operation of the plant. About 500-750 trees will be planted per hectare all around the plant, approach roads, and township premises. Locally available types of trees that are resistant to pollutants will be planted. In addition to the above, all open spaces available within the premises will be developed as nurseries, parks, gardens, and other forms of greenery. 5 m wide greenbelt will be developed along the plant premises, as per land available.

4.5.3.3. Guidelines & Techniques for Green Belt Development

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

Development of Green Belt

Table 4.10: LIST OF PLANT SPECIES PROPOSED FOR GREENBELT DEVELOPMENT

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

(*Source: Term of Reference-ToR)

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

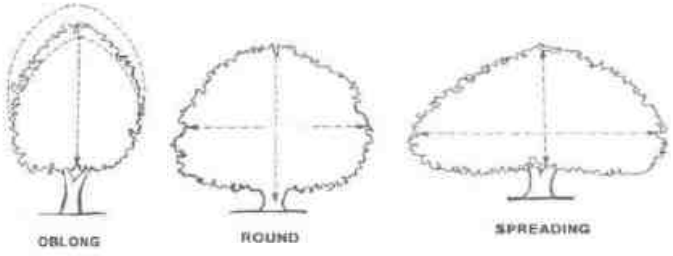
A greenbelt is a set of rows of trees planted in such a fashion, to create an effective barrier between the project and its surroundings. The greenbelt helps to capture fugitive emissions, attenuate the noise levels in the existing project, and simultaneously improve aesthetics of the surroundings.

4.5.3.4. Design of Green Belt

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

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

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



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

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

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

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

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

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

Some of the important aspects to be considered are:

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

4.5.4. Anticipated Impact on Fauna

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

4.5.4.1. Measures for protection and conservation of wildlife species

- Topsoil has a large number of seeds of native plant species in the mining area.
- Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment to the flora and fauna in consultation with Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.
- Plantation around the mine area will help in creating habitats for small faunal species and create a better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

4.5.3. Impact on Aquatic Biodiversity

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

4.5.4. Impacts on Bird Fauna:

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

4.5.5. Impacts on wildlife

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

Table 4.12: OVERALL ECOLOGICAL IMPACT ASSESSMENTS

S.No	Attributes	Assessment

1	Impact of mining activity on agricultural land nearby the proposed project site.	Agricultural land is located away from the proposed project site. There are no impacts on the agricultural land & Horticulture. Kindly refer to the conclusion.
	Activities of the project affect the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in the mining lease site. The fauna sighted mostly migrated from the buffer area.
2	Located near an area populated by rare or endangered species	No Endangered, Critically Endangered, or vulnerable species were sighted in the core mining lease area.
3	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/ coastline/estuary/sea	There is no National Park/ Wildlife Sanctuary/ Reserve Forest/ Mangroves and Eco-Sensitive zone/ Critically polluted area/ HACA/CRZ located within 10 km radius of the area.
4	The proposed project restricts access to waterholes for wildlife	'No '
5	Proposed mining project impact surface water quality that also provides water to wildlife	'No 'scheduled or threatened wildlife animals are sighted regularly core in the core area.
6	Proposed mining project increase siltation that would affect nearby biodiversity areas.	Surface runoff management such as drains is constructed properly so there will be no siltation effect in the nearby mining area.
7	Risk of fall/slip or cause death to wild animals due to project activities.	'No'
8	The project release effluents into a water body that also supplies water to a wildlife.	No water body near to core zone so the chances of water becoming polluted is low.
9	Mining projects affect the forest-based livelihood/ any specific forest product on which local livelihood depended.	'No'
10	The project likely to affect migration routes.	'No 'migration route was observed during the monitoring period.
11	The project is likely to affect the flora of an area, which have medicinal value	'No'
12	Forestland is to be diverted, has carbon high sequestration.	'No 'There was no forest land diverted.
13	The project is likely to affect wetlands, Fish breeding grounds, and marine ecology.	'No'. Wetland was not present in the near core Mining lease area. No breeding and nesting ground is present in the core mining area.

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

4.6 SOCIO ECONOMIC

4.6.1 Anticipated Impact

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

4.6.2 Mitigation Measures

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

4.7 OCCUPATIONAL HEALTH AND SAFETY

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

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

4.7.1 Respiratory Hazards

Noise

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

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

Physical Hazards

The following measures are proposed for control of physical hazards

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

4.7.2 Occupational Health Survey

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

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

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

4.8 MINE WASTE MANAGEMENT

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

4.9 MINE CLOSURE

The ultimate depth of the mine is 42m bgl and the life of the mine is 5 years, after completion of mining operation the following action will be taken in the project site as a part of Mine closure plan

- The total Mined out land would be around 3.27.21Ha this land will be converted into temporary water reservoir which will facilitate to collect the rain water
- The stagnant water will be supplied to the nearby agriculture land during drought seasons
- Fencing will be re constructed around the pit after closure, the warning/ danger display board will be placed on all the sides of the project site
- The un utilized area and haul roads will be converted as plantation area, fruit bearing trees will be planted to retain the eco system of the area
- Final Mine closure plan will be prepared and submitted to the concerned authority

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

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

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

- To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public

- To protect public health and safety of the surrounding habitation
- To minimize environmental damage
- To conserve valuable attributes and aesthetics
- To overcome adverse socio-economic impacts.

4.9.1 Mine Closure Criteria

The criteria involved in mine closure are discussed below:

4.9.1.1 Physical Stability

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

4.9.1.2 Chemical Stability

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

4.9.1.3 Biological Stability

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

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

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

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

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 INTRODUCTION

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

5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE

The surrounding areas already undergone quarrying operation, there are 8 Crushers within the radius of 1km. Most of the quarries in the regions are abandoned and Existing quarries. Hence this quarry will feed the Rough stone material to the crushing units.

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

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

5.2 ANALYSIS OF ALTERNATIVE SITE

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

5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY

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

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

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

5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY

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

6. ENVIRONMENTAL MONITORING PROGRAMME

6.0 GENERAL

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

6.1 METHODOLOGY OF MONITORING MECHANISM

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

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

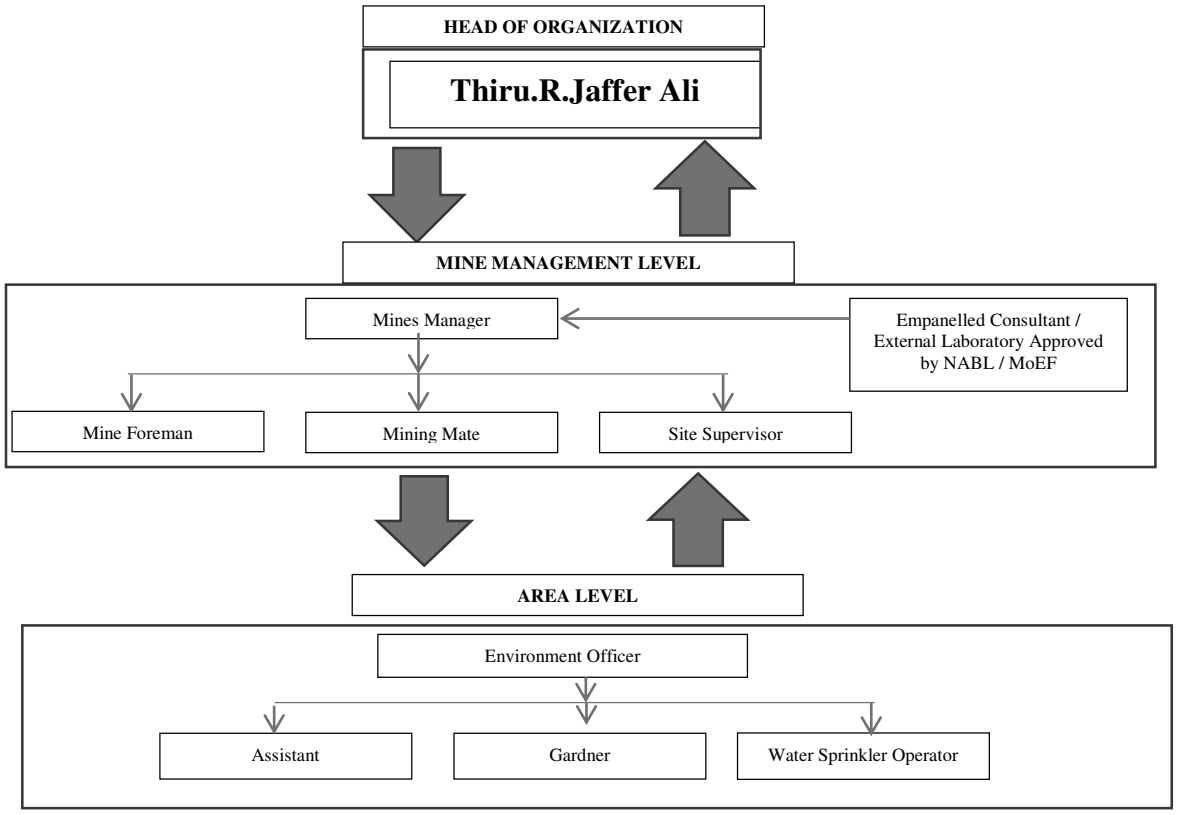
The responsibilities of this cell will be:

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

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

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

FIGURE 6.1: PROPOSED ENVIRONMENTAL MONITORING CELL



6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

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

TABLE 6.1 IMPLEMENTATION SCHEDULE

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

6.3 MONITORING SCHEDULE AND FREQUENCY

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

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

The details of monitoring are detailed in Table 6.2

TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC

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

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

6.4 BUDGETARY PROVISION FOR EMP

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

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

TABLE 6.3 ENVIRONMENT MONITORING PROGRAM BUDGET

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

Source: Approved Mining Plan

6.5 REPORTING SCHEDULES OF MONITORED DATA

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

Periodical reports to be submitted to: -

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

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

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

7. ADDITIONAL STUDIES

7.0 GENERAL

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

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management
- Post-COVID Health 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 for all proposed projects. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

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

TABLE 7.1 RISK ASSESSMENT & CONTROL MEASURES

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

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

6	Natural calamities	Unexpected happenings	Escape Routes will be provided to prevent inundation of storm water Fire Extinguishers & Sand Buckets
7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

Source: Analysed and proposed by FAE & EC

7.3 DISASTER MANAGEMENT PLAN

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

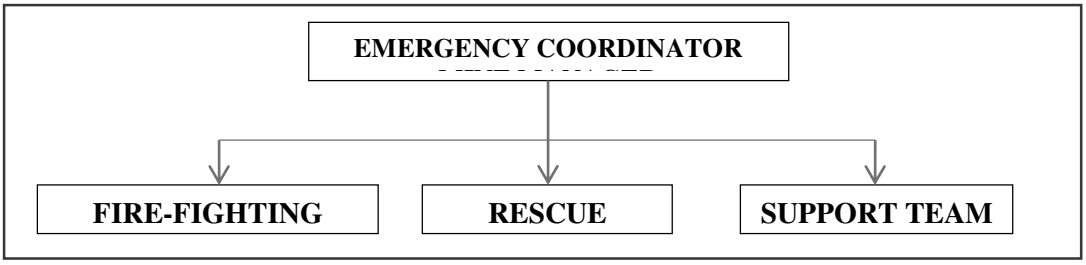
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

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

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

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

FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT



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

TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION

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

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

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

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

(b) Incident controller (IC)

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

(c) Communication and advisory team

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

(d) Roll call coordinator

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

(e) Search and rescue team

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

(f) Emergency security controller

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

Emergency control procedure –

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

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

Proposed fire extinguishers at different locations –

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

TABLE 7.3: PROPOSED FIRE EXTINGUISHERS AT DIFFERENT LOCATIONS

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

Alarm system to be followed during disaster –

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

7.4 CUMULATIVE IMPACT STUDY

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

TABLE 7.4: LIST OF QUARRIES WITHIN 500 METER RADIUS

CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
PROPOSED QUARRY					
P1	Thiru. P.Jaffer Ali, S/o. Raja Mohammed, T.S.No. 9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001.	Melur	216/1	1.47.5 Ha	File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025
P2	Thiru.Tamilselvan, S/ o.Thangarasa, No.591, Annanagar, Melur, Kulathur Taluk, Pudukkottai District	Melur	80/2 & etc.,	4.54.0 Ha	EC Granted
P3	Tvl.Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village, Kulathur Taluk, Pudukkottai District-	Melur	80/3,80/4, 80/5;80/6, 80/17& 80/19	1.68.0 Ha	EC Granted
	TOTAL EXTENT			**7.69.5**	
EXISTING QUARRY					
E-1	Thiru.R.Muthusamy, S/o.Rengasamy, No.663, Meta Muthudaiyanpatti village, Kulathur Taluk, Pudukkottai District	Melur	80/20, 80/21& 80/22	0.82.0Ha	28.11.2023 to 27.11.2028
	TOTAL EXTENT			**0.82.0 Ha**	
EXPIRED QUARRIES					
EX-1	N.Rengasamy, S/ o.Nadasakandiyar, Melur village, Kulathur Taluk, Pudukkottai District	Melur	216/6, 216/10 216/17 216/18	0.56.0	30.05.2009 to 29.05.2014
EX-2	Thiru.S.M.Sait, No.59, Charles Nagar, Pudukkottai	Melur	216/22 A	0.40.5	27.11.2013 to 26.11.2018
EX-3	Thiru.A.Periyasamy, S/o.Adaikkalam, T.S.No.6985, Thirukokarnam, Pudukkottai	Melur	216/15 B	0.75.0	19.02.16 to 18.02.2021
EX-4	Thiru.R.Muthusamy, S/o.Rengasamy, Melur, Sathiyamangalam. post, Kulathur Taluk, Pudukkottai District	Melur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
EX-5	S.M.Sait, S/o.MookaiahSolahar, No.51,52, Charlas Nagar,Pudukkottai	Melur	207/8	0.50.0	20.01.2017 to 19.01.2022
EX-6	Thiru.M.Velu, S/o.Muthiah,	Melur	207/14B 207/15A	0.65.5	28.06.2017 to 27.06.2022

	Echanari Thottiavayal, Melur, Kulathur Taluk, Pudukkottai				
EX-7	Thiru.R.Natesan, S/o.Rengasamy, No.715A,Narkkeerar Vayal, Melur, Pudukkottai District	Melur	216/1	1.47.5	12.09.2017 to 11.09.2022
EX-8	M/s.Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai (Dt)	Melur	207/21 B 207/22 B2 207/23	1.30.5	31.07.2019 to 30.07.2024
	TOTAL CLUSTER EXTENT			**8.51.5 Ha**	

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

TABLE 7.5: SALIENT FEATURES OF PROPOSAL "P1"

Name of the Project	Thiru.R.Jaffer Ali Rough stone and Gravel quarry	
S.F. No.	216/1	
Extent	1.47.5 Ha	
Village Taluk and District	Melur Village, Kulathur Taluk, Pudukkottai District	
Land Type	It is a Government Poramboke land – The applicant has awarded tender cum auction from the Government.	
Toposheet No	58 – J/15	
Latitude between	10°26'50.2819"N to 10°26'56.2834"N	
Longitude between	78°46'19.1656"E to 78°46'24.5439"E	
Previous Lease Details	Lessee: Thiru. R. Natesan Lease Period: 12.09.2017 to 11.09.2022 Rc. No. 2654/2016 (G&M), Dated: 14.06.2017	
Existing Pit	40m (Avg)	
Elevation of the area	113m AMSL	
Mining Plan period	3 Years	
Proposed Depth of Mining	53m bgl	
	Rough Stone in m^3	
Geological Resources	2,89,920	
Mineable Reserves	73,185	
Year wise Production	73,185	
Peak Production	27,185	
Ultimate Pit Dimension	Pit I- 137m (L) X 78m (W) X 53m (D) bgl Pit II-70m (L) X 65m (W) X 48m (D)	
Water Level in the region	58m–62m bgl	
Method of Mining	Opencast Mechanized Mining Method is being carried out with 5.0-meter vertical bench with a bench width is not less than the bench height	
Topography	The lease applied area is flat terrain. The area has gentle sloping towards North-eastern side and altitude of the area is 113m (max) above Mean Sea level. The area is covered by 3m thickness of Top Soil and followed by Massive Charnockite which is clearly inferred from the existing quarry pit.	
Machinery proposed	Jack Hammer	4 Nos
	Compressor	1 No
	Excavator with Bucket and Rock Breaker	1 Nos
	Tippers	2 Nos
	Water sprinkler	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	25 Nos	
Project Cost	Rs. 1,04,93,000 /-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Tank	300m NE
	Tank	360m SW

	Tank	480m North
	Tank	740m NE
	Kavinaadu Kanmaai	7km South
	Vellaru River	9.6km South
Greenbelt Development Plan	Proposed to plant 750 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	670m – North East	
Nearest Reserve Forest	Northmalai RF – 3.7km – North West	
Nearest Wild Life Sanctuary	Vettangudi Bird Sanctuary –46.5km – South West	

TABLE 7.6: SALIENT FEATURES OF PROPOSAL "P2"

Name of the Quarry	Thiru. T.Tamilselvan Rough stone and Gravel Quarry	
S.F.No	80/2& etc.,	
Extent	4.54.0 Ha	
Toposheet No	58-G/11	
Latitude between	10°26'40.50"N to 10°27'08.04"N	
Longitude between	78°46'21.11"E to 78°46'29.30"E	
Proposed Depth of Mining	17m BGL	
Geological Resources	Rough Stone in m^3	Gravel m^3
	27,18,180	90,606
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	4,06,930	63,168
Year wise production details	Rough Stone in m^3	Gravel m^3
	4,06,930	63,168
Water Level in the surrounds area	70-75m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards south side and covered by grayish black cotton soil followed by weathered rock formation and massive charnockite rock formation.	
Machinery proposed	Jack Hammer	1 Nos
	Compressor	1 No
	Excavator	1 No
	Tippers	4 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	27 Nos	
Project Cost	Rs. 78.82 lakhs	
CER Cost	Rs. 5.0 Lakhs	
Greenbelt Development Plan	2,270 trees in the 7.5 m Safety Zone and approach road	
Proposed Water Requirement	2.5 KLD	
Nearest Habitation	350m Northeast	

Source: Approved Mining Plan

TABLE 7.7: SALIENT FEATURES OF PROPOSAL "P3"

Name of the Quarry	Tvl. Sai Hridham Infraa (P) Ltd	
S.F.No	80/3, 80/4, 80/5,80/6, 80/17, 80/19	
Extent	1.68.0 Ha	
Toposheet No	58 G/11	
Latitude between	10°26'55.62"N to 10°27'00.28"N	
Longitude between	78°46'22.24"E to 78°46'29.02"E	
Proposed Depth of Mining	41m BGL	
Geological Resources	Rough Stone in m^3	Gravel m^3
	5,83,080	53,308
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	1,17,760	41,292
Proposed production for five years plan period	Rough Stone in m^3	Gravel m^3
	1,17,760	41,292
Water Level in the surrounds area	63-68m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards south side and covered by grayish black cotton soil followed by weathered rock formation and massive charnockite rock formation	
Machinery proposed	Jack Hammer	2 Nos
	Compressor	1 No
	Excavator	1 No
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	19 Nos	
Project Cost (excluding EMP cost)	Rs.29,98,000/-	
CER Cost	Rs.5,00,000/-	
Greenbelt Development Plan	840 trees in the 7.5 m Safety Zone and approach road	
Proposed Water Requirement	3.4 KLD	
Nearest Habitation	480m Northeast	

TABLE 7.8: SALIENT FEATURES OF PROPOSAL "E1"

Name of the Quarry	Thiru.R.Muthusamy Rough stone and Gravel Quarry
S.F.No	80/20, 80/21 & 80/22
Extent	0.82.0 Ha
Toposheet No	58 G/11
Latitude between	10°26'55.93"N to 10°26'59.62"N
Longitude between	78°46'26.18"E to 78°46'26.28"E
Proposed Depth of Mining	47m BGL
Geological Resources	Rough Stone in m^3
	364476
Mineable Reserves	Rough Stone in m^3
	1,39,539
Proposed production for five years plan period	Rough Stone in m^3
	1,32,565
Water Level in the surrounds area	63-68m bgl
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting

Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards south side and covered by grayish black cotton soil followed by weathered rock formation and massive charnockite rock formation	
Machinery proposed	Jack Hammer	2 Nos
	Compressor	1 No
	Excavator	1 No
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	15Nos	
Project Cost (excluding EMP cost)	Rs.45,50,000/-	
CER Cost	Rs.3,00,000/-	
Greenbelt Development Plan	410 trees in the 7.5 m Safety Zone and approach road	
Proposed Water Requirement	1.5 KLD	
Nearest Habitation	510m Northeast	

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

Air Environment –

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

TABLE 7.8: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE

Quarry	Year wise production (Five Years)	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day
P1(3 Years)	73,185	24,395	81	7
P2	4,06,930	81,386	271	23
P3	1,17,760	23,552	79	7
Total	**5,97,875**	**1,29,333**	**431**	**37**
E1	1,32,565	26,513	88	7
Total	**1,32,565**	**26,513**	**88**	**7**
Grand Total	**7,30,440**	**1,55,846**	**519**	**44**

TABLE 7.9: CUMULATIVE PRODUCTION LOAD OF GRAVEL/ TOPSOIL

Quarry	Year wise production (Five Years)	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day
P1	-	-	-	-
P2	-	-	-	-
P3	41,292	13,764	46	4
Total	**41,292**	**13,764**	**46**	**4**
E1	-	-	-	-
Total	-	-	-	-
Grand Total	**41,292**	**13,764**	**46**	**4**

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is 519m^3 per day with a capacity of 44trips of Rough Stone per day and Gravel/Topsoil is 46m^3 per day with a capacity of 4 trips of from the cluster.

Based on the above production quantities the emissions due to various activities in all the mines includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been

analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.10.

TABLE 7.10: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS

EMISSION ESTIMATION FOR QUARRY "P1"				
Estimated Emission Rate for PM_{10}	**Activity**	**Source type**	**Value**	**Unit**
	Drilling	Point Source	0.069905765	g/s
	Blasting	Point Source	0.000403812	g/s
	Mineral Loading	Point Source	0.038964519	g/s
	Haul Road	Line Source	0.002486378	g/s/m
	Overall Mine	Area Source	0.045190277	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.000289233	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000009870	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
Estimated Emission Rate for PM_{10}	**Activity**	**Source type**	**Value**	**Unit**
	Drilling	Point Source	0.085844997	g/s
	Blasting	Point Source	0.001127689	g/s
	Mineral Loading	Point Source	0.044286389	g/s
	Haul Road	Line Source	0.002497337	g/s/m
	Overall Mine	Area Source	0.067434403	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.0010121	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000080094	g/s
EMISSION ESTIMATION FOR QUARRY "P3"				
Estimated Emission Rate for PM_{10}	**Activity**	**Source type**	**Value**	**Unit**
	Drilling	Point Source	0.061031309	g/s
	Blasting	Point Source	0.000204823	g/s
	Mineral Loading	Point Source	0.037940242	g/s
	Haul Road	Line Source	0.002485392	g/s/m
	Overall Mine	Area Source	0.039049420	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.0002072	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000005126	g/s
EMISSION ESTIMATION FOR QUARRY "E1"				
Estimated Emission Rate for PM_{10}	**Activity**	**Source type**	**Value**	**Unit**
	Drilling	Point Source	0.085844997	g/s
	Blasting	Point Source	0.001127689	g/s
	Mineral Loading	Point Source	0.044286389	g/s
	Haul Road	Line Source	0.002497337	g/s/m
	Overall Mine	Area Source	0.067434403	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.0010121	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000080094	g/s

Source: Emission Calculation

TABLE 7.11: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM_{10} in $\mu g/m^3$	
Background	39.1
Incremental	12.77
Resultant	51.87
NAAQ Norms	**100 $\mu g/m^3$**
$PM_{2.5}$ in $\mu g/m^3$	
Background	18.9
Incremental	5.82
Resultant	24.72

NAAQ Norms	**60 µg/ m^3**
So2 in µg/m^3	
Background	4.7
Incremental	6.51
Resultant	11.21
NAAQ Norms	**80 µg/ m^3**
No2 in µg/m^3	
Background	18.3
Incremental	1.1
Resultant	19.4
NAAQ Norms	**80 µg/ m^3**

Noise Environment –

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

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

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

Where:

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

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

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

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

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

TABLE 7.12: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Industrial Standards dB(A)
P1	48.4	60.1	60.4	**Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)**
P2	53.1	46.1	53.9	
P3	53.1	46.1	53.9	
E1	53.1	46.1	53.9	

Source: Lab Monitoring Data

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

amended vide S.O. 1046(E),dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986).

Ground Vibrations

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

TABLE 7.13: NEAREST HABITATION FROM EACH MINES

Location ID	Distance & Direction
P1	670m NE
P2	350m NE
P3	480m NE
E1	510m NE

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

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

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

R = distance from charge (m)

TABLE 7.14: GROUND VIBRATIONS AT EACH MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	19	670m NE	0.159
P2	20	350m NE	0.467
P3	20	480m NE	0.282
E1	20	510m NE	0.256

Source: Blasting Calculations

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

Socio Economic Environment –

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

TABLE 7.15: SOCIO ECONOMIC BENEFITS FROM EACH MINES

Location ID	Project Cost	CER
P1	Rs. 1,04,93,000/-	Rs. 3,00,000/-
P2	Rs. 78,82,000/-	Rs. 5,00,000/-
P3	Rs.29,98,000/-	Rs. 5,00,000/-
Total	**Rs.2,13,73,000/-**	**Rs. 13,00,000/-**
E1	Rs.45,50,000/-	Rs. 5,00,000/-
Total	**Rs.45,50,000/-**	**Rs. 5,00,000/-**
Grand. Total	**Rs.2,59,23,000/-**	**Rs. 18,00,000/-**

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

TABLE 7.16: EMPLOYMENT BENEFITS FROM EACH MINES

Description	Employment
P1	25
P2	27
P3	19
E1	15
Total	**86**

A total of 71 people will get employment due to 3 proposed mine in cluster and remaining people are already employed at existing mines.

TABLE 7.17: GREENBELT DEVELOPMENT BENEFITS FROM EACH MINES

Code	No of Trees proposed to be planted	Area Covered Sq.m	Name of the Species
P1	750	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development	Neem, Pungam, Vilvam, etc.,
P2	2,270		
P3	840		
Total	**3860**		
E1	410		
G. Total	**4,270**		

For the proposed mining plan 3860 Nos of trees will be planted around lease area and approach road and 410 trees are planted for existing quarry.

7.5 PLASTIC WASTE MANAGEMENT PLAN

The project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated: 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.

Objective –

- To investigate the actual supply chain network of plastic waste.

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

TABLE 7.18: ACTION PLAN TO MANAGE PLASTIC WASTE

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

Source: Proposed by FAE's and EC

7.6 CLUSTER MANAGEMENT COMMITTEE

The cluster management committee is proposed to form including of 3 Proposed quarries and 1 Existing quarry total extent of the cluster is 8.51.5 Ha

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

- Transportation of Minerals and blasting activities with the coordination between the individual quarry owners.
- Sprinkling of water regularly thrice a day in the mutual understanding with the quarry owners
- Carrying out blasting operation as specified times by the Mines Managers and as per the EIA report
- Usage of Haul roads in a time specified by the Cluster Management Committee
- Following Safe operating procedure prescribed by the Mines Manager during natural calamities
- Planting Trees in the Government Land, School and within the project site
- Celebrating Safety month, Environmental Month along with the Mines Managers in every six months once
- Regularly follow the health of the workers and take medical examination as per the DGMS norms under the guidance of Mines Manager
- Meet at Association Hall monthly once to review the Environmental Management and Safety activities prescribed by the Cluster Management Committee
- We have read and understood all the above steps and we ensure to follow these specific steps Quarry owners in the Cluster management committee

Quarries in the Cluster Management Committee

CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
PROPOSED QUARRY					
P1	Thiru. P.Jaffer Ali, S/o. Raja Mohammed, T.S.No. 9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001.	Melur	216/1	1.47.5 Ha	File No: 12313 ToR Identification No: TO25B0108TN5441443N Dated: 25.07.2025
P2	Thiru.Tamilselvan, S/ o.Thangarasa, No.591, Annanagar, Melur, Kulathur Taluk, Pudukkottai District	Melur	80/2 & etc.,	4.54.0 Ha	EC Granted
P3	Tvl.Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village, Kulathur Taluk, Pudukkottai District-	Melur	80/3,80/4, 80/5;80/6, 80/17& 80/19	1.68.0 Ha	EC Granted
	TOTAL EXTENT			**7.69.5**	
EXISTING QUARRY					
E-1	Thiru.R.Muthusamy, S/o.Rengasamy, No.663, Meta Muthudaiyanpatti village, Kulathur Taluk, Pudukkottai District	Melur	80/20, 80/21& 80/22	0.82.0Ha	28.11.2023 to 27.11.2028
	TOTAL EXTENT			**0.82.0 Ha**	
EXPIRED QUARRIES					
EX-1	N.Rengasamy, S/ o.Nadasakandiyar, Melur village, Kulathur Taluk, Pudukkottai District	Melur	216/6, 216/10 216/17 216/18	0.56.0	30.05.2009 to 29.05.2014
EX-2	Thiru.S.M.Sait, No.59, Charles Nagar, Pudukkottai	Melur	216/22 A	0.40.5	27.11.2013 to 26.11.2018
EX-3	Thiru.A.Periyasamy, S/o.Adaikkalam, T.S.No.6985, Thirukokarnam, Pudukkottai	Melur	216/15 B	0.75.0	19.02.16 to 18.02.2021
EX-4	Thiru.R.Muthusamy, S/o.Rengasamy, Melur, Sathiyamangalam. post, Kulathur Taluk, Pudukkottai District	Melur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
EX-5	S.M.Sait, S/o.MookaiahSolahar, No.51,52, Charlas Nagar,Pudukkottai	Melur	207/8	0.50.0	20.01.2017 to 19.01.2022
EX-6	Thiru.M.Velu, S/o.Muthiah,	Melur	207/14B 207/15A	0.65.5	28.06.2017 to 27.06.2022

	Echanari Thottiavayal, Melur, Kulathur Taluk, Pudukkottai				
EX-7	Thiru.R.Natesan, S/o.Rengasamy, No.715A,Narkkeerar Vayal, Melur, Pudukkottai District	Melur	216/1	1.47.5	12.09.2017 to 11.09.2022
EX-8	M/s.Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai (Dt)	Melur	207/21 B 207/22 B2 207/23	1.30.5	31.07.2019 to 30.07.2024
	TOTAL CLUSTER EXTENT			**8.51.5 Ha**	

STANDARD OPERATING PROCEDURE FOR MELUR VILLAGE CLUSTER MANAGEMENT COMMITTEE

1. **Maintenance of Haul Roads and Village Roads:**
    - Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
    - Transportation of material will be carried out during day time and material will be covered with tarpaulin
    - The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
    - Water sprinkling on haul roads & loading points will be carried out twice a day
    - Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.
    - The un-metaled haul roads will be compacted weekly before being put into use.
    - Over loading of tippers will be avoided to prevent spillage.
    - It will be ensured that all transportation vehicles carry a valid PUC certificate
    - Grading of haul roads and service roads to clear accumulation of loose materials
2. **Maintenance of Drilling Activities**
    - In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
    - Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
    - The life of drill bit will be increased.
    - The rate of penetration of drill will be increased.
    - Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.
    - Usage of sharp drill bits while drilling which will help in reducing noise;
    - Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders;

- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Silencers / mufflers will be installed in all machineries;
- Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured though training and awareness.
- Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects

3. Maintenance of Blasting Activities

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours (1.00 PM to 2.00 PM), controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored
- The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;
- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;

- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.
- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 Hz.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4. Maintenance of Greenbelt Activities

- Planting of trees all along main mine haul roads and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas
- Suitable plan for conservation of Schedule-I Species have prepared and necessary fund for implement for the same will be made.
- All the preventive measures will be taken for growth & development of fauna.
- Creating and development awareness for nature and wildlife in the adjoin villages.
- The workers shall be trained to not harm any wildlife, should it come near the project site. No work shall be carried out after 6.00 pm

5. Maintenance of Occupational Health

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

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

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

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

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

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

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

6. Cluster Management Committee Policy

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

- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme

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

8.PROJECT BENEFITS

8.0 GENERAL

The Proposed Project for Quarrying Rough Stone and Gravel at Melur Village aims to produce 73,185m^3 Rough Stone over a period of 3 years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits.

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

8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 25 persons for carrying out mining operations and give preference to the local people in providing employment in the three proposed quarries in the cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED

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

8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE

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

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

8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE

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

8.5 OTHER TANGIBLE BENEFITS

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

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

8.5.1 CORPORATE SOCIAL RESPONSIBILITY

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

CSR Cost Estimation

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

8.5.2 CORPORATE ENVIRONMENT RESPONSIBILITY

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

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

TABLE 8.1 CER – ACTION PLAN

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

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

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

10.ENVIRONMENTAL MANAGEMENT PLAN – Thiru.R. Jaffer Ali

10.0. GENERAL

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

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

10.1. ENVIRONMENTAL POLICY

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

The Proponent Thiru. R. Jaffer Ali will –

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

Description of the Administration and Technical Setup –

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

The said team will be responsible for:

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

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

10.2. LAND ENVIRONMENT MANAGEMENT –

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

TABLE 10.1. PROPOSED CONTROLS FOR LAND ENVIRONMENT

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

Source: Proposed by FAE's & EIA Coordinator

1.3. SOIL MANAGEMENT

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

TABLE 10.2. PROPOSED CONTROLS FOR SOIL MANAGEMENT

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

Source: Proposed by FAE's & EIA Coordinator

10.4. WATER MANAGEMENT

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office. The quarrying operation is proposed up to a depth of 42m BGL, the water table in the area is 58m–63m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3. PROPOSED CONTROLS FOR WATER ENVIRONMENT

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

Source: Proposed by FAE's & EIA Coordinator

10.5. AIR QUALITY MANAGEMENT

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

TABLE 10.4. PROPOSED CONTROLS FOR AIR ENVIRONMENT

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

Source: Proposed by FAE's & EIA Coordinator

10.6. NOISE POLLUTION CONTROL

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

TABLE 10.5. PROPOSED CONTROLS FOR NOISE ENVIRONMENT

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

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

Source: Proposed by FAE's & EIA Coordinator

10.7. GROUND VIBRATION AND FLY ROCK CONTROL

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

TABLE 10.6. PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK

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

Source: Proposed by FAE's & EIA Coordinator

10.8. BIOLOGICAL ENVIRONMENT MANAGEMENT

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

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

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

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

10.8.1. Green Belt Development Plan

About 750nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

The objectives of the greenbelt development plan are –

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

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

1.8.2. Species Recommended for Plantation

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

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

TABLE 10.7. RECOMMENDED SPECIES FOR THE PLANTATION

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

Source: Proposed by FAE's & EIA Coordinator

10.9. OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

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

10.9.1. Medical Surveillance and Examinations –

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

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

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

TABLE 10.8. MEDICAL EXAMINATION SCHEDULE

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

10.9.2 Proposed Occupational Health and Safety Measures –

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

FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS



10.9.3: Health and Safety Training Programme

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

10.9.4.: Budgetary Provision for Environmental Management –

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

TABLE 10.9: EMP BUDGET FOR PROPOSED PROJECT

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

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

	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision made in Operating Cost	0	0
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Provision made in Operating Cost	0	0
	3. Greenbelt development under safety zone during the Scheme period (150 Saplings)	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6’ X 5’ with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000

	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	100000
	Workers will be provided with Personal Protective Equipment's	Lumpsum fund allocation	50000	15000
	Health check up for workers will be provisioned	IME & PME Health check up for all the employees will be covered batch wise.	0	50000
	First aid facility will be provided	Lumpsum fund allocation	0	5000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Lumpsum fund allocation	50000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0
	Slope stability action plan	Slope stability action plan in the end of Second Year plan period	200000	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			**7,60,000**	**3,02,000**

Year Wise Break Up	
I Year	₹ 10,62,000/-
II Year	₹ 3,17,100/-
III Year	₹ 3,32,955/-
Total	**₹ 17.12 Lakhs**

Cost inflation 5% per annum

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

10.10 CONCLUSION –

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

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11. SUMMARY AND CONCLUSION

The Draft EIA & EMP report prepared for the proposed Rough Stone and Gravel Quarry project located in S.F.Nos. 219/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State belongs to Thiru.R. Jaffer Ali the Project falls in the Cluster category consist of 3 Proposed Quarries & 1 Existing 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.

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

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

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

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

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone as per market demand. Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 25 people directly in the proposed projects and indirectly around 50 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Thiru.R. Jaffer Ali Rough Stone and Gravel Quarry (Extent 8.51.5ha).

12. DISCLOSURE OF CONSULTANT

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

Name and address of the consultancy:

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

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

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	Dr. P. Thangaraju	In-house	**1**	**A**	HG GEO	A A
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 B A
4	Mr. M. Santhoshkumar	In-house	-	**-**	GEO	B
5	Mr. Govindasamy	In-house	-	**-**	WP	B
6	Mr. Panneer Selvam	In-house	-	**-**	EB	B
7	Dr. T. Sasikala	Empanelled	-	**-**	SE	B
8	Mr. N. Sathishkumar	In-house	-	**-**	AP	B
9	Mr.P. Viswanathan	In-house	-	**-**	LU	B
10	Mr.M. Shaik Nawas	In-house	-	**-**	SC	B

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

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ANNEXURE

THIRU. R. JAFFER ALI ROUGH STONE AND GRAVEL QUARRY

MelurVillage, Kulathur Taluk,

Pudhukkottai District, Tamil Nadu State

CLUSTER EXTENT = 8.51.5 ha

Proponent Name	Extent (Ha)	ToR
Thiru. R. Jaffer Ali, **S/o. Raja Mohammed,** **T.S.No. 9884, Kalif Nagar 4th Street,** **Pudukkottai District – 622 001.**	**1.47.5 ha**	**File No. 12313 TOR Identification No. TO25B0108TN5441443N Dated: 25.07.2025**

LIST OF ANNEXURES

CODE	DESCRIPTION	PAGE NO.
P1	COPY OF TERMS OF REFERENCE	1A-23A
	COPY OF 500m RADIUS LETTER	24A-25A
	COPY OF MINING PLAN APPROVED LETTER	26A-27A
	COPY OF APPROVED MINING PLAN AND PLATES	28A-107A
	COPY OF HYDROGEOLOY REPORT	108A-122A
	COPY OF G.O. COPY	123A-140A
P2	COPY OF EC	141A-178A
E1	COPY OF EC	179A-218A
	COPY OF BASELINE MONITORING DATA REPORT	219A-247A
	COPY OF NABET CERTIFICATE	248A

File No: 12313
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **25/07/2025**

To,

Thiru. R. Jaffer Ali
No. 9884, Kalif Nagar 4th Street, Pudhukkottai District,TAMIL NADU- 622001
rrbluemetals.pdkt1@gmail.com

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

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Rough Stone Quarry over an extent of 1.47.5Ha of S.F. No. 216/1 of Melur Village, Kulathur Taluk, Pudukottai District, Tamil Nadu by Thiru. R. Jaffer Ali – "B1" and Schedule S.No. 1 (a) – ToR issued along with Public Hearing- preparation of EIA report – Regarding.
Ref: 1. Online proposal No. SIA/TN/MIN/540702/2025, Dated: 13.06.2025.
2. Your application submitted for Terms of Reference dated: 13.06.2025.
3. Minutes of the 585th Meeting of SEAC held on 03.07.2025.
4. Minutes of the 856th Meeting of Authority held on 21.07.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5441443N
(ii) File No.	12313
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Thiru. R. Jaffer Ali, Melur Rough Stone Quarry Project.
(viii) Name of Company/Organization	r jaffer ali
(ix) Location of Project (District, State)	PUDUKKOTTAI, TAMIL NADU
(x) Issuing Authority	SEIAA
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

1.In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were

submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.

2.The above-mentioned proposal has been considered by SEIAA in the meeting held on 21.07.2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

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

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

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

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

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

8.The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OM No. J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chair Person, TNPC Board,76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Pudukkottai District,
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. Assistant Director, Department of Geology & Mining, Pudukkottai District,
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

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

S. No	Terms of Reference
	(ii) The Organisation chart of the Committee with defining the role of the members **(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities**. 2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report. **3. The 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. 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.** **4. 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.** **5. Since waterbodies are situated nearby, the PP shall carry out the hydrological study including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies.** 6. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report. 7. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. 8. 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. 9. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 10. 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. 11. The P 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. 12. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seac Conditions - Standard

S. No	Terms of Reference
2.1	**TERMS OF REFERENCE (ToR) FOR GRANITE / ROUGH STONE QUARRY** 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

S. No	Terms of Reference
	(viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed 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

S. No	Terms of Reference
	Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.

S. No	Terms of Reference
	30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

3. Seiaa Specific Conditions:

S. No	Terms of Reference
3.1	The Authority accepts the recommendation of SEAC-II and **decided to grant Terms of Reference**

S. No	Terms of Reference
	(ToR) along with Public Hearing for the quantity of 73,185m3 of Rough Stone up to the depth of 53m BGL. The annual peak production is 27,185m3 of Rough Stone as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-II & normal conditions & the conditions mentioned in Annexure of this minutes.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	**Cluster Management Committee** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **Agriculture & Agro-Biodiversity** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.

S. No	Terms of Reference
	17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during

S. No	Terms of Reference
	operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had 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

S. No	Terms of Reference
	Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large,may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study rea will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically

S. No	Terms of Reference
	sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a 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

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

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

A. STANDARD TERMS OF REFERENCE

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

and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

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

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

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

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

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

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

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

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

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine

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

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

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

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

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

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

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

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

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

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

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

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

Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

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

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and Bgl. A schematic diagram may also be provided for the same.

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

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

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

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

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

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

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

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

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

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

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

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

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

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

    a) Executive Summary of the EIA/EMP Report

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

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

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

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

    f) The Questionnaire for environmental appraisal of mining projects as devised earlier

by the Ministry shall also be filled and submitted.

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

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

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

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

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

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

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

8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through

intuitions/NABET Accredited agencies.

27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
b. All documents may be properly referenced with index, page numbers and continuous page numbering.
c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 &

30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.

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

Signature Not Verified

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

Date: 25/07/2025

From

Dr.A.Lalitha,M.Sc.,M.Phil.,Ph.D.
Assistant Director,
Geology and Mining
Pudukkottai.

To

Thiru.R.Jafer Ali,
S/o.Raja Mohamed,
No.9884, Kalif Nagar 4th Street,
Pudukkottai District .

Sir,

Rc.No.1060/2023 (G&M) dated 22 .03.2024

Sub : Mines and Quarries – Minor Mineral – Rough Stone Quarry - Pudukkottai District – Kulathur Taluk – Melur village – S.F.No.216/1- over an extent of 1.47.5 Hects. of Government poramboke land - Sale of Rough Stone quarry through Tender cum auction - Reg.

Ref :
1. Pudukkottai District Gazette No.14, dated 19.10.2023.
2. Advertisement published in Tamil Daily – Dinamani dated.01.11.2023.
3. Tender cum Auction application from Thiru.R.Jafer Ali dt. 16.11.2023.
4. Thiru.R.Jafer Ali letter dated 05.12.2023
5. District Collector Memo Rc.No.1060/2023 (G&M) dated 11.01.2024.
6. Thiru.R.Jafer Ali letter dated 28.02.2024.

.....

With reference to your letter in the reference 6th cited, the details of existing and abandoned quarries located within 500m radius from the proposed Rough stone quarry, over an extent of 1.47.5 Hects in Government poramboke land in S.F.No.216/1 of Melur Village, Kulathur Taluk, Pudukkottai District are as follows:

1) Existing Other Quarries:

S. No	Name of the Lessee / Permit Holder	Village & Taluk	S.F.No	Extent	Lease period
1.	Thiru.R.Muthusamy, S/o.Rengasamy, No.663, Mela Muthudaiyanpatti village, Kulathur Taluk, Pudukkottai District	Melur Kulathur	80/20, 80/21 & 80/22	0.82.0	28.11.2023 to 27.11.2028

2) Proposed Area

S. No	Name of the applicant	Village &Taluk	S.F.No	Extent
1.	Thiru.Tamilselvan, S/o.Thangarasa, No.591, Annanagar, Melur, Kulathur Taluk, Pudukkottai District	Melur Kulathur	80/2 & etc.,	4.54.0
2.	Thiru.R.Jafer Ali, S/o.Raja Mohamed, No.9884,Kalif Nagar 4th Street,Pudukkottai D	Melur Kulathur	216/1	1.47.5

3.	Tvl.Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village, Kulathur Taluk, Pudukkottai District-	Melur Kulathur	80/3, 80/4, 80/5, 80/6, 80/17 & 80/19	1.68.0
			Total	**7.69.5**

3) Lease Expired

S. No	Name of the Lessee / Permit Holder	Village & Taluk	S.F.No	Extent	Lease period
1	N.Rengasamy, S/o.Nadasakandiyar, Melur village, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/6, 216/10 216/17 216/18	0.56.0	30.05.2009 to 29.05.2014
2.	Thiru.S.M.Sait, 59, Charles Nagar, Pudukkottai	Melur Kulathur	216/22 A	0.40.5	27.11.2013 to 26.11.2018
3.	Thiru.A.Periyasamy, S/o.Adaikkalam, T.S.No.6985, Thirukokarnam, Pudukkottai	Melur Kulathur	216/15 B	0.75.0	19.02.16 to 18.02.2021
4.	Thiru.R.Muthusamy, S/o.Rengasamy, Melur, Sathiyamangalam post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
5.	S.M.Sait, S/o.MookaiahSolahar, No.51,52, Charlas Nagar,Pudukkottai	Melur Kulathur	207/8	0.50.0	20.01.2017 to 19.01.2022
6.	Thiru.M.Velu, S/o.Muthiah, Echanari Thottiavayal, Melur, Kulathur Taluk, Pudukkottai	Melur Kulathur	207/14 B 207/15 A	0.65.5	28.06.2017 to 27.06.2022
7.	Thiru.R.Natesan, S/o.Rengasamy, No.715A,Narkkeerar Vayal, Melur, Pudukkottai District	Melur Kulathur	216/1	1.47.5	12.09.2017 to 11.09.2022
8.	M/s.Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai (Dt)	Melur Kulathur	207/21 B 207/22 B2 207/23	1.30.5	31.07.2019 to 30.07.2024
			Total	6.58.5	

22/3/24

Assistant Director,
Geology and Mining,
Pudukkottai

22/3/24

From

Dr.A.Lalitha,M.Sc.,M.Phil.,Ph.D.
Assistant Director,
Geology and Mining
Pudukkottai.

To

Thiru.R.Jafer Ali,
S/o.Raja Mohamed,
No.9884, Kalif Nagar 4th Street,
Pudukkottai District .

Rc.No. 1060/2023 (G&M) dated 22.03.2024

Sir,

Sub: Mines and Quarries – Minor Mineral – Rough Stone Quarry - Pudukkottai District – Kulathur Taluk – Melur Village – S.F.No.216/1 - over an extent of 1.47.5 Hects. of Government poramboke land - Sale of Rough Stone quarry through Tender cum auction - Precise area communicated – Draft Mining plan submitted – Approval of Mining Plan – Regarding.

Ref:
1. Pudukkottai District Gazette No.14, dated 19.10.2023.
2. Advertisement published in Tamil Daily – Dinamani dated.01.11.2023.
3. Tender cum Auction application from Thiru.R.Jafer Ali dt. 16.11.2023.
4. Thiru.R.Jafer Ali letter dated 05.12.2023
5. District Collector Memo Rc.No.1060/2023 (G&M) dated 11.01.2024.
6. Thiru.R.Jafer Ali letter dated 28.02.2024.

*****

Thiru.R.Jafer Ali, S/o.Raja Mohamed, No.9884, Kalif Nagar 4th Street, Pudukkottai District has been declared as successful tenderer for the grant of Rough stone quarry lease in Government poramboke land bearing S.F.No.216/1, over an extent of 1.47.5 Hects. hects of Melur Village, Kulathur Taluk, Pudukkottai District for a period of five years, under Rule 8(6)(a)-of Tamil Nadu Minor Mineral Concession Rules, 1959.

2) Since Thiru.R.Jafer Ali has remitted entire lease amount, the precise area has been communicated to the applicant with a direction to submit mining plan for the subject area vide reference 5th cited.

3)Accordingly the Thiru.R.Jafer Ali, has submitted the mining plan for quarrying Rough stone over an extent of 1.47.5 Hects of Government poramboke land in S.F.No.216/1 of Melur Village, Kulathur Taluk, Pudukkottai District and the proposed mineable reserves are **73,185 M³** of rough stone after leaving necessary safety distance from the lease boundary for the period of five years.

4) In exercise of the powers conferred in Rule 41 (2) of Tamilnadu Minor Mineral Concession Rules 1959, the mining plan is hereby approved. This approval is subject to the following conditions :-

i) That the mining plan is approved without prejudice to any other laws applicable to the quarry / area from time to time whether such laws are made by the Central Government, State Government or any other authority.

ii) That 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 & 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) That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

iv) That the approval of mining plan does not confer any rights for the renewal of quarry lease.

v) The approval is valid upto the subsistence of the lease period only.

vi) This approval is subject to the instructions issued in Rule 41 and 42 of Tamil Nadu Minor Mineral Concession Rules 1959.

vii) The applicant is directed to submit the application in Form-I as prescribed by the MoEF along with the approved Mining Plan to the State Environment Impact Assessment Authority to issue Environment Clearance.

22/3/24

Assistant Director,
Geology and Mining,
Pudukkottai

Encl: Approved Mining Plan

Copy to :

22/3/24

1.The Chairman, State Level Environment Impact Assessment Authority, Chennai.
2.The Director, Geology and Mining, Guindy, Chennai—600 032.

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR MELUR ROUGH STONE QUARRY

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

Government Land / Lease period = Three years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	:	1.47.5Ha
S.F.NO.	:	216/1
VILLAGE	:	MELUR
TALUK	:	KULATHUR
DISTRICT	:	PUDUKKOTTAI
STATE	:	TAMIL NADU

FOR

APPLICANT

Thiru. R. Jaffer Ali,

S/o. Raja Mohammed,

T.S.No.9884, Kalif Nagar 4th Street,

Pudukkottai District – 622 001.

Mobile No. +91 86430 88888.

PREPARED BY

B. VENGADAGIRI, M.Sc.,

Qualified Person

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

No.105, 5th Cross,

Alagapuram,

Salem District - 636 004.

Mobile No.: +91 86953 32233

E-Mail: vengatb6@gmail.com

This mining plan is approved in exercise of the powers conferred under Rule 41(2) and (5) TNMMCR 1959 and subject to the conditions / stipulations indicated in the mining plan approved letter Rc.No: 166/23/(Quarry) Dated: 22.3.24

ASSISTANT DIRECTOR
GEOLOGY AND MINING
PUDUKKOTTAI

22/3/24

ABBREVIATIONS

- EC - Environmental Clearance.
- EIA - Environment Impact Assessment.
- EMP - Environment Management Plan.
- ToR - Terms of Reference.
- NGT - National Green Tribunal.
- SEAC - State Expert Appraisal Committee.
- SEIAA - State Level Environment Impact Assessment Authority.
- DEAC - District Expert Appraisal Committee.
- DEIAA - District Level Environment Impact Assessment Authority.
- MoEF&CC - Ministry of Environment, Forest and Climate changes.
- CPCB - Central Pollution control board.
- TNPCB - Tamil Nadu Pollution control board.
- DMS - Director of Mines Safety.
- DGMS - Director of General Mines Safety.
- CRZ - Coastal Regulatory Zone.
- HACA - Hill Area Conservation Authority.
- S.F.No. - Survey Field Number.
- MMR - Metalliferous Mines Regulations.
- MCR - Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules.
- TNMMCR - Tamil Nadu Minor Mineral Concession Rules.
- NONEL - Non Electric.
- PPV - Peak Particle Velocity.
- DGPS - Differential Global Positioning System.
- QP - Qualified Person.
- MSL - Mean Sea Level
- AGL - Above Ground Level
- BGL - Below Ground Level

R. Jaffer Ali,
S/o. Raja Mohammed,
T.S.No.9884, Kalif Nagar 4th Street,
Pudukkottai District – 622 001.
Mobile No. +91 86430 88888.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Melur Rough Stone Quarry lease applied area over an extent of 1.47.5 Hectares Government Poramboke land in S.F.No. 216/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State has been prepared by

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

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

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

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

Signature of the Applicant

(R. Jaffer Ali)

Place: Pudukkottai
Date: 12.01.2024

R. Jaffer Ali,
S/o. Raja Mohammed,
T.S.No.9884, Kalif Nagar 4th Street,
Pudukkottai District – 622 001.
Mobile No. +91 86430 88888.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Melur Rough Stone Quarry lease applied area over an extent of 1.47.5 Hectares Government Poramboke land in S.F.No. 216/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant

(R. Jaffer Ali)

Place: Pudukkottai
Date: 22.01.2024

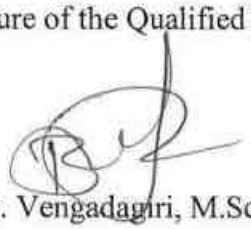
CERTIFICATE

Certified that I am, **B. Vengadagiri, M.Sc.,** having an office at No.105, 5th Cross, Alagapuram, Salem District – 636 010, holding a Post Graduate Degree in Geology (M.Sc., Applied Geology) from Annamalai University, Chidambaram and I worked in the field of Mining in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as "(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established" and (I)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I prepared this Mining Plan and Progressive Quarry Closure Plan in Respect of Melur Rough Stone Quarry over an extent of 1.47.5 Hectares Government Poramboke land in S.F.No.216/1 of Melur Village, Kulathur Taluk, Pudukkottai District for **Thiru. R. Jaffer Ali,** S/o. Raja Mohammed, T.S.No.9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person



B. Vengadagiri, M.Sc.,

Place: Salem

Date: 22.01.2024

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

CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Melur Rough Stone Quarry lease applied area over an extent of 1.47.5 Hectares Government Poramboke land in S.F.No. 216/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State has been prepared for

Thiru. R. Jaffer Ali,
S/o. Raja Mohammed,
T.S.No.9884, Kalif Nagar 4th Street,
Pudukkottai District – 622 001.
Mobile No. +91 86430 88888.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Assistant Director, Department of Geology and Mining, Pudukkottai District, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

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

Signature of the Qualified Person

B. Vengadagiri, M.Sc.,

Place: Salem
Date: 22.01.2024

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

CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Melur Rough Stone Quarry lease applied area over an extent of 1.47.5 Hectares Government Poramboke land in S.F.No.216/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State has been prepared for

Thiru. R. Jaffer Ali,
S/o. Raja Mohammed,
T.S.No.9884, Kalif Nagar 4th Street,
Pudukkottai District – 622 001.
Mobile No. +91 86430 88888.

Whenever specific permissions / exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block–AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

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

Signature of the Qualified Person

B. Vengadagiri, M.Sc.,

Place: Salem
Date: 22.01.2024

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR MELUR ROUGH STONE QUARRY.

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

1.0 INTRODUCTION AND EXECUTIVE SUMMARY:

The applicant **Thiru. R. Jaffer Ali,** S/o. Raja Mohammed, T.S.No.9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001 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 Rough stone quarry area is a Government Poramboke land. The lease was awarded by Tender Cum Auction and the successful bidder was awarded the lease such as Thiru. R. Jaffer Ali, has been successfully awarded the quarry area for over an extent of 1.47.5 Hectares Government Poramboke land in S.F.No. 216/1 of Melur Village, Kulathur Taluk, Pudukkottai District under rule 8(1)(b) of Tamil Nadu Minor Mineral Concession Rules, 1959 (Refer Annexure No. I). The following are the statutory requirements with respect to Rough stone quarry.

The applicant has applied for quarry lease tender for quarrying of Rough stone. After successful bidders of the applicant (Thiru. R. Jaffer Ali) in the Tender Cum Auction, the application was examined, Scrutinized, Inspected and processed by the Assistant Director, Department of Geology and Mining, Pudukkottai District and passed a precise area communication letter vide **Roc.No.1060/2023/Mines, Dated: 11.01.2024** for submission of Draft Mining plan under Rules 8(1) (b), 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and obtain approval from the Assistant Director, Department of Geology and Mining, Pudukkottai and obtain Environmental Clearance from the State Level Environment Impact Assessment Authority, Tamil Nadu to quarrying Rough stone for the period of three years with the following conditions to provide (Refer Annexure No. I):

General Conditions:

1. The quarried out minerals should be transported after paid the necessary seniorage fee as per Appendix- II of Tamil Nadu Minor Mineral Concession Rules, 1959.
2. No hindrance shall be caused to the adjacent patta lands while quarry operation.
3. The applicant should be submit approved mining plan within the time stipulated in the precise area communication letter as per Rule.
4. Environmental Clearance should be obtained from the Competent Authority in respect of the subject area.

Specific conditions as prescribed in the precise area communication letter:

There is no Specific conditions as prescribed in the precise area communication letter.

This Mining Plan along with Progressive Mine closure Plan is prepared in full consultation with **Thiru. R. Jaffer Ali,** S/o. Raja Mohammed, T.S.No.9884, Kalif Nagar 4th Street, Pudukkottai District – 622 001 for Rough stone quarry over an extent 1.47.5 Hectares Government Poramboke land in S.F.No. 216/1 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State under rule 8(1) (b) of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date.

The Mining plan has been prepared after carrying the field survey, collection of Primary & secondary data, environmental setting, geological features and tentatively estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This mining plan is prepared by considering the Rule 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12.13.2011 in Special Leave Petition SLP (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and ≤ 250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field survey carried out by the Qualified Person and Team as on 19.01.2024.

Short Notes of Mining plan:

a. Village Panchayat - Melur

b. Panchayat Union - Pudukkottai

c. Total extent of the lease applied area is 1.47.5Ha.

d. Topography of the area - The area is exhibits plain topography.

e. The Estimated Geological Resources are **2,89,920m³** of Rough stone in the entire area.

f. Tentative total Mineable Reserves are **73,185m³** of Rough stone in the entire area.

g. The proposed quantity of reserves/ (level of production) to be mined are **73,185m³** of Rough stone for three years in the entire area.

h. Proposed Depth of mining = 53m below ground level (R.L. 113 – R.L. 60).

i. Lease Period = Three years

j. It is a fresh lease application but, the applied area has been considered quarrying operation earlier. The quarry lease was previously granted for quarrying Rough stone and the lease granted details are given table below.

Table – 1

Spell	Name of the Lessee	District Collector's Proceeding Number and Date	Lease Period
1	Thiru. R. Natesan	Rc.No. 2654/2016 (G&M), Dated:14.06.2017	12.09.2017 – 11.09.2022

The maximum area and depth of the **Present quarry pits are** given table below (Refer Plate No. II and III).

Table – 2

Existing Pit Dimensions (Maximum)			
Pit	Length in m	Width in m	Depth in m
1	137	78	36
2	70	65	40

k. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.

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

Excavators attached with rock breaker.

Shallow Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity).

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

n. The approach road from the main road to quarry is already existence; the same will be maintained in good condition for the haulage of quarry materials and machineries.

o. There is No Export of this Rough stone.

p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IB.

q. The lease applied area is about 1.47.5Ha bounded by twelve corners; the corners are designated as 1-12 clock-wise from the Southwest corner and the Co – ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.

r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III and IV.

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

- *i) Interstate Boundary,*
- *ii) Protected area under wild life protection ACT, 1972,*
- *iii) Critically polluted areas as identified by CPCB,*
- *iv) Notified Eco sensitive areas.*

t. there is no waste anticipated during this quarry operation. Hence, waste dump is not proposed in the lease applied area.

u. Around 25 employees are proposed to deploying the quarrying operation.

v. Total Cost of the project is about **Rs. 1,04,93,000/-.**

1.0 GENERAL INFORMATION

1.1 Name of the Applicant : **Thiru. R. Jaffer Ali,**

: S/o. Raja Mohammed,

Address : T.S.No.9884, Kalif Nagar 4th street,
Pudukkottai District,

State with Pin Code : Tamil Nadu – 622 001.

Mobile No : +91 86430 88888 and 94431 65022.

Aadhaar No : 5259 2947 6161.

E-mail : rrbluemetals.pdkt1@gmail.com

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

The applicant is an individual.

1.3 Mineral which the Applicant intends to mine:

The Applicant intends to quarry Rough stone.

1.4 Period of permission / lease to be granted:

Three years as mentioned in Precise area Communication letter.

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

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

Address : No.105, 5th Cross,
Alagapuram,
Salem District – 636 010.

Mobile : +91 86953 32233

Email : vengatb6@gmail.com

1.6 Name and Address of the Prospecting Agency:

State Geology and Mining Department, Government of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed regional exploration studies and geological mapping in Tamil Nadu. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. No detailed Exploration has been carried out.

1.7 Precise area communication letter details received from the Competent Authority of the Government:

The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Pudukkottai District vide **Rc. No. 1060/2023/Mines, dated: 11.01.2024** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant production schedule.

2.0 LOCATION

a) Details of the area with location map:

The lease applied area is located about 7km Northwestern side of Pudukkottai town, 12km Southern side of Kulathur town and 2km Southern side of Melur Village.

Pudukkottai —19km→ North → Kulathur —10km→ South → Melur —2km→ South → Lease Applied area

Location Map of the Lease Applied area

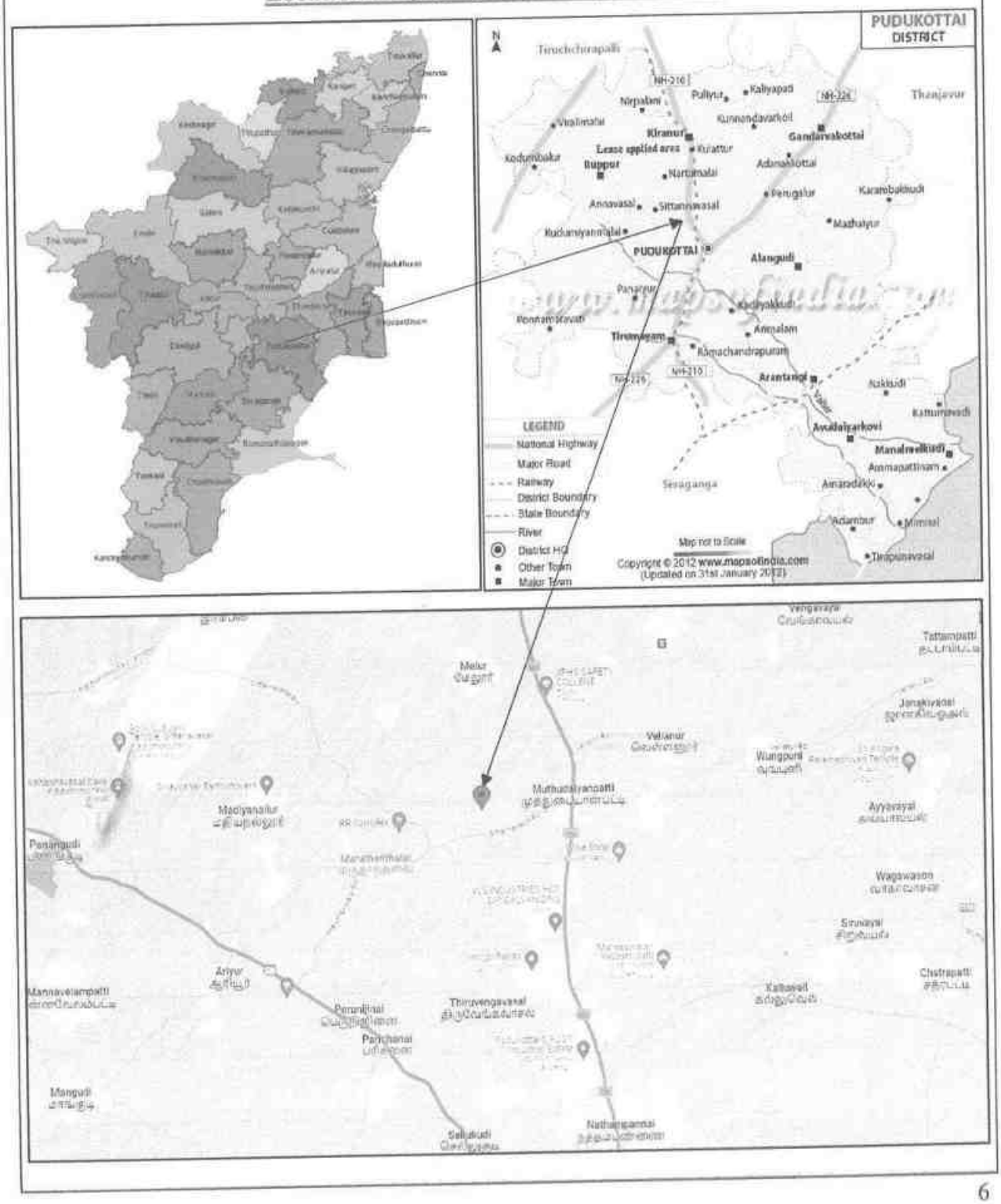


Table – 3

District	Taluk	Village	S.F. No.	Area (Ha.)
Pudukkottai	Kulathur	Melur	216/1	1.47.5

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

b) Classification of the area (Ryotwari/ Poramboke / others):

It is a poramboke land (classified as Barren land) which is not fit for vegetation/ Cultivation.

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

It is a Government Poramboke land. The applicant has awarded tender cum auction from the Government (Refer Annexure Nos. V to VI).

d) Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **58J/15** Latitude between: **10°26'50.2819"N to 10°26'56.2834"N** and Longitude between: **78°46'19.1656"E to 78°46'24.5439"E** on WGS datum-1984. Please refer the Plate Nos. I to II as per the GSI Toposheet.

e) Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the Eastern side, which is connects to the Sithannavasal Road is located at 430m on the Southeastern side of the lease applied area.

Road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone.

The approach road from the quarry is already existence and the same will be utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Tiruchirappalli – Pudukkottai which is located about 2.5km on the Southeastern side of the area as per the GSI Toposheet and Google Map.

PART – A

3.0 GEOLOGY AND MINERAL RESERVES

3.1. Brief description of the Topography and general Geology of the area (with plans):

The lease area is flat terrain. The area has gentle sloping towards Northeastern side and altitude of the area is 113m above from MSL. The area is covered by 3m thickness of Topsoil and followed by Massive Charnockite which is clearly inferred from the existing quarry pit. The Water table is found at a depth of 58m - 62m. Average annual rainfall is about 985mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N40°E – S40°W with dipping towards SE60°.

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

AGE		FORMATION
Recent	-	Quaternary formation (Soil)
---------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneissic complex

3.2. Details of exploration already carried out if any:

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Pudukkottai District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the existing pit within the area.

3.3. Estimation of Reserves:

a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally five sections have been drawn, two sections drawn along the length wise as (X-Y and X'-Y') and other three cross sections drawn width wise as (A-B, C-D and E-F) to cover the maximum area considered for lease upto a 53m depth.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone are in terms of cubic metres (Volume) only and not in terms of tonnage. No Exploration has been carried out.

Estimation of Geological Resources (Plate No. III):

The Geological Resources of Rough stone and Gravel are estimated upto a depth of 53m [3m Top Soil + 50m Rough stone] below from existing ground profile. The total estimated geological resources are given below (Plate No. III):

Table – 4

GEOLOGICAL RESOURCES					
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Geological Resources of Rough stone (m^3)**
XY-AB	v	13	40	5	2600
	vi	18	35	5	3150
	vii	28	30	5	4200
	viii	35	25	5	4375
	ix	70	65	5	22750
	x	70	65	5	22750
	xi	70	65	5	22750
Total					**82575**
X'Y'-CD	v	1	7	5	35
	vi	1	14	5	70
	vii	1	32	5	160
	viii	83	66	5	27390
	ix	83	77	5	31955
	x	83	77	5	31955
	xi	83	77	5	31955
Total					**123520**
X'Y'-EF	vi	6	36	5	1080
	vii	13	67	5	4355
	viii	36	78	5	14040
	ix	55	78	5	21450
	x	55	78	5	21450
	xi	55	78	5	21450
Total					**83825**
Grand Total					**289920**

The Geological Resources of Rough Stone : **2,89,920m^3**

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

Estimation of Mineable Reserves:

The mineable reserves are calculated after leaving the safety distance and Bench loss.

Table – 5

MINABLE RESERVES					
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Mineable Reserve of Rough stone in (m^3)**
XY-AB	v	9	44	5	1980
	vi	13	44	5	2860
	vii	16	44	5	3520
	viii	20	44	5	4400
	ix	34	24	5	4080
	x	24	14	5	1680
Total					**18520**
X'Y'-CD	viii	69	31	5	10695
	ix	64	32	5	10240
	x	59	22	5	6490
	xi	54	12	5	3240
Total					**30665**
X'Y'-EF	vi	6	29	5	870
	vii	13	44	5	2860
	viii	36	42	5	7560
	ix	42	32	5	6720
	x	37	22	5	4070
	xi	32	12	5	1920
Total					**24000**
Grand Total					**73185**

The mineable reserves have been estimated as **73,185m^3** of Rough stone at the rate of 100% recovery for a period of three years upto a depth of 53m [RL.113m to RL.60m] above from the ground level.

4.0 MINING:

4.1. Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director General of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961. The relaxation will be applied and obtained after execution of lease deed/ commencement of quarry operation. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission..

4.2. Mode of working (mechanized/ manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass by considerable volume from the parent rock mass by drilling with Hand Jack Hammer and blasting, the liberated Rough stone will be loaded into the Tipper by hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Hydraulic excavators are attached with rock breakers for fragmentation of large boulders to avoid secondary blasting and easy handling of material. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining.

4.3. Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height. After obtaining relaxation as per 106 2(b) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

4.4. Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III and table given below.

Year wise Development and Production

Table – 6

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Recoverable Reserves of Rough stone in (m^3)
I	XY-AB	v	9	44	5	1980
		vi	13	44	5	2860
		vii	16	44	5	3520
		viii	20	44	5	4400
	X'Y'-CD	viii	69	31	5	10695
	X'Y'-EF	vi	6	29	5	870
		viii	13	44	5	2860
	Total					**27185**
II	X'Y'-CD	ix	64	32	5	10240
	X'Y'-EF	viii	36	42	5	7560
		ix	42	32	5	6720
	Total					**24520**

III	XY-AB	ix	34	24	5	4080
		x	24	14	5	1680
	X'Y'-CD	x	59	22	5	6490
		xi	54	12	5	3240
	X'Y'-EF	x	37	22	5	4070
		xi	32	12	5	1920
	Total					**21480**
Grand Total						**73185**

The Recoverable reserves have been estimated as **73,185m³** of Rough stone at 100% recovery for three years upto a depth of 53m below ground level (R.L.113m to R.L.60m) (Refer Plate No. III). The peak production capacity in the quarry is 27,185m³ of Rough stone and the proposed production schedule is arrived as per applicant's requirement and the EIA and EMP will be prepared an annual peak production.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	6m³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed during the three years plan period	=	73,185m³
Peak production capacity during the 1st year	=	27,185m³
Hence total Lorry loads per day	=	27,185m³/6m³
	=	4,531 Lorry loads
	=	4,531/300 days
Rough Stone	=	**15 Lorry loads per day.**

Working hours = 9.00 am to 6.00 pm (with 1.00-2.00 P.M. lunch break).

4.5. Machineries to be used:

For Mining:

The following machineries are utilized on rental basis for the development and production work at this quarry.

Table – 7

I. DRILLING MACHINE:

S. No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jack-Hammer	4	32	1.2m to 2.0m	Compressed air
2	Compressor	1	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

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

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Tippers	2	20 tonnes	Diesel Drive
2	Water Sprinkler	1	4000 ltrs	Diesel Drive

4.6. Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations:

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

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

As the applicant has applied quarry lease for three years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

Table – 8

Pit	Length (m) (Max.)	Width (m) (Max.)	Depth (m) (Max.)
1	137	78	53m
2	70	65	48m

All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III, IV and V. As per the NGT orders the applicant is directed to plant 500 tree saplings per hectares along the quarry site either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry. Hence, there is no proposal for backfilling. After completion of quarry operations, the quarry pit will be allowed to collect the seepage and rain water, the water storage will be kept as temporary reservoir to charging the nearby wells and will be utilized for greenbelt development. When the quarry reaches its ultimate pit limit or at the end of life of quarry, greenbelt development will be carried out over the quarried out top bench. The Conceptual Mining is based upon the entire ROM proposed for the life of the Mine.

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

5.0 BLASTING

5.1. Blasting pattern:

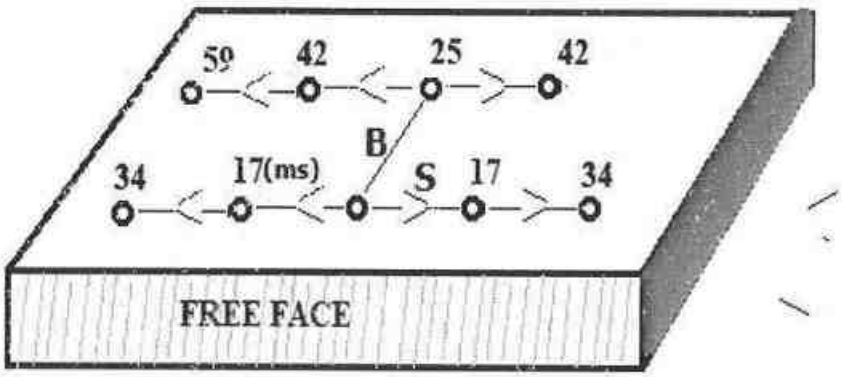
The quarrying operation is proposed to carried out by Mechanized Opencast Method in conjunction with conventional method of mining using shallow Jack hammer drilling and mild blasting with NONEL initiation of shattering effect for loosen the Rough stone. Nonel initiation provides reasonably good solution to fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, flyrocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting and hence it optimizes the cost of blasting.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Spacing between holes	:	1.0m
Burden for hole	:	0.75m
Diameter of hole	:	35mm
Pattern of hole	:	Staggered pattern
Inclination of holes	:	80°from horizontal
Use of delay detonators	:	NONEL
Hole to Hole	:	17 milli second delay (ms)
Row to Row	:	25 milli second delay (ms)

Staggered Pattern of Blasting Design

NONEL DELAY PATTERN



Spacing (S)	=	**1.0m**
Burden (B)	=	**0.75m**
Depth of the hole	=	**1.5m**
No. of holes proposed per day (Peak Production)	=	**78 Holes**

5.2. Type of expiosives to be used:

25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.

5.3. Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures by NONEL initiation is being adopt for minimizing ground vibration and fly rock.

Hand jackhammer drilling with blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in Rough stone for easy excavation and to control fly rock.

NONEL Delay detonators:

NONEL blasting permits for bottom initiation and lesser charge per delay.

The major advantages of NONEL blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

Blasting program for the production per day (As per Peak production capacity):

Annual Peak production	= 27,185m^3 x 2.6(Bulk Density) = 70,681Tons
Yield	= 234 Tons
Powder factor	= 6 Tons/Kg of explosives
Total explosive required	= 39 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
No. of Holes Blasted per day	= 78 Holes
Blasting at day time only	= 1.00 – 1.30 P.M. (whenever required)

Anticipated theoretical calculation of PPV

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

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

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

R = distance from charge (m)

PREDICTED PPV VALUES DUE TO BLASTING

Table – 9

Maximum Charge per day (kg)	Number of Round Blast per day	Maximum Charge per Round (kg)	Number of holes blasted per round	Number of holes blasted per day	Maximum Charge blast at a time by NONEL (kg)	Nearest Infrastructure (m)	PPV (mm/s)
39	1	39	78	78	1 (2 Holes)	680	0.275

From the above table, the charge per blast of 39kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. Anyhow, the applicant ensures that carry out the **blasting twice a day** based on the site condition under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

5.4. Storage and safety measures to be taken while blasting:

The applicant will engage authorized explosive agency as approved by Petroleum and Explosives safety Organization (PESO) to carry out the blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After completion of Blasting the explosive Agency will take it out back the remaining quantity of Explosives. The blasting and quarrying operation is advised to handle by competent qualified statutory personnel approved by the DGMS and competent authorities and he will maintain the records of Explosives as per the Indian Explosives Act, Mines Act and Environment Protection Act.

6.0 MINE DRAINAGE:

6.1. Depth of water table (based on nearby wells and water bodies):

The lease applied area consist dendritic drainage pattern. The water table in the area is about 58m - 62m which is observed from the existing private boreholes. The lease applied area is fully covered by Massive Charnockite. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. Anyhow, Garland drain will be constructed along the boundary to prevent surface run-off water entering into the quarry.

Table – 10

Type	Distance & Direction	Location
Bore Well	270m Eastern side	10°26'54.73"N 78°46'33.33"E

6.2. Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

There is no waste anticipated during entire life of the quarry hence, disposal/stacking of waste does not arise.

8.0 USE OF THE MINERAL:

The excavated rough stone (100%) will be directly loaded into Tippers as raw form to the needy nearby crushing unit to making Road metals and construction materials.

9.0 OTHERS:

9.1. Other Permanent Structure (also shown in the map)

TABLE – 11

S.No.	Description	Particulars	Aerial Distance & Direction
1	Nearest National Highway	(NH-336) Pudukkottai – Trichy	1.2km – East
2	State Highways	(SH-71) Pudukkottai – Manapparai	3.3km – SW
3	Village Road	Sittanavasal Road	260m – South
4	Railway station	Vellanur Railway station	3.3km – NE
5	Airport	Tiruchirappalli Airport	35 km – NW
6	Nearest Habitation	680m – NE	
7	Nearest Town	Pudukkottai	7.5 km – SE
8	Nearest Government School	Muthudaiyanpatti - Govt Elementary School	1.5km – East
9	Government Hospital	Pudukkottai	7.5 km - SE
10	Reserved Forest	No Reserve Forest within 60m Radius. Narthamalai R.F. – 4.2 km – NW	
11	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.	
12	Nearby Water Bodies	Tank – 300m – NE Side. Tank – 360m – SE Side.	
13	Interstate Boundary	Around 165 km – SW (Kerala State Boundary)	
14	Critically Polluted areas identified by the CPCB	Around 204km – NW (Coimbatore – SIDCO)	
15	Protected areas Notified under wildlife (Protection) Act, 1972.	Around 46.7km – SW (Vettangudi birds Sanctuary)	
16	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	
17	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable	
18	Housing area, EB line (HT & LT Line)	There is no EB-LT/HT line or Housing area situated within 50m radius from the lease area.	
19	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.No. 80. East - S.F.No. 216/18 and 216/9A. South - S.F.Nos. 2016/20A, 216/21A2, 216/21A1 and 216/22B. West - S.F.No. 207	
20	Adjacent Patta lands / Govt. Land	Direction: North – Classification: Patta land – Safety Distance: 7.5m East – Patta land – 7.5m South – Patta land – 7.5m West – Patta land – 7.5m	

STRUCTURE WITHIN 100m Number of Structures - Nil. TABLE – 12					
Structure Numbers	**Type of Structure**	**Usage Purpose**	**Commercial / industry/ residential/ farm house/ Govt. building**	**Occupants of Building/ Structure**	**Remarks**
Nil					
STRUCTURE WITHIN 100 - 200m Number of Structures – Nil.					
Nil					
STRUCTURE WITHIN 200 -300m Number of Structures – 5 Nos					
1	Crusher Plant (5 Nos.)	Stone crusher	Industry	No resident	Nil

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

TABLE – 13

Designation	Present Employment position	Employees Requirement	Total
a) Supervisory category			
Geologist	-	1	1
b) Skilled labour			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator – Operator	-	1	1
Tipper Drive	-	3	3
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	8	8
c) Unskilled			
Security	-	2	2
Labour & Helper	-	2	2
Co-operator and Cleaner	-	5	5
Total	-	**25**	**25**

The proposed output per man shift:

TABLE – 14

Expected annual Production of ROM as per Peak Production		27,185m^3
No. of days likely to be worked		300 days
Average ROM production per day		91m^3
OMS =	Average Production per day / Average employment per day	91m^3 / 25 = 3.6m^3

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

9.3. Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Pudukkottai which is located about 7.5km on the Southeastern side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed in the safety area as semi-permanent structure and it will be maintained periodically.

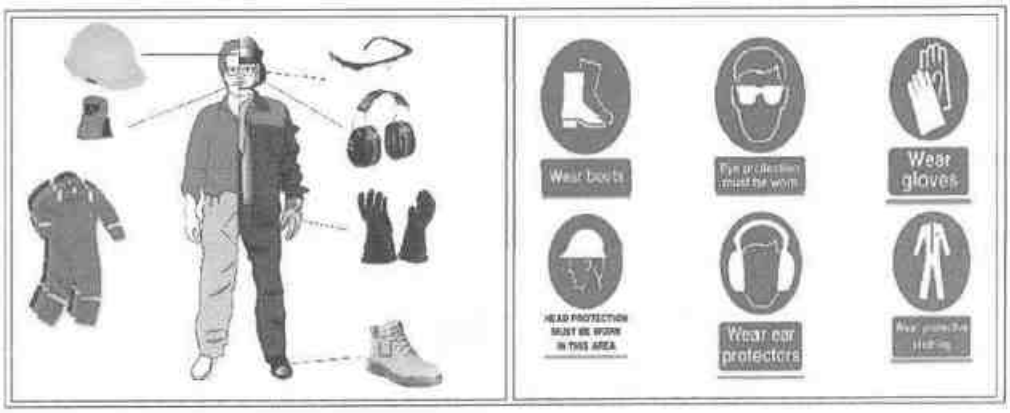
c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Pudukkottai located at 7.5km on the Southeastern side.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

e) Precautionary safety measures to the labourers:



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

All personnel protective equipment as per the DGMS standard will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

10.0 MINERAL PROCESSING:

No mineral processing / beneficiation involved.

PART – B

11.0 ENVIRONMENT MANAGEMENT PLAN

The EMP is prepare 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 / TNPCB Norms.

Environment	Anticipated impact	Mitigation measure
Land Environment	i. Topography of the area will change due to mining activity.	i. Backfilling is the only source for mitigation measure for topographical changes, but no waste will be anticipated during entire life of the Rough stone and Gravel quarrying operation hence, backfilling is not proposed. ii. The Mining benches will not exceed beyond the approved height and width. iii. At the end of life of mine, the pit will be allowed to collect the seepage and rain water and the water storage will be kept as temporary reservoir for charging the nearby wells also the water utilized for greenbelt development purpose.
	ii. Soil quality and agriculture land on surrounding land environment will impact due to; a) Dust propagation during quarry operation like drilling, blasting, loading, unloading and movement of men, Vehicle and machineries. b) Vehicular and machineries emissions	i. Regular water sprinkling on dust prone area like haul road and other active area to arrest the dust generation. ii. The applicant is carried out the greenbelt along the safety zone, the same will be maintain also additional greenbelt will be developed with thick long leave plants to arrest the fugitive dust and vehicular emissions propagation. iii. Wet drilling/dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Excavated benches shall be developed by planting with grasses, herbs and shrubs

	and spillage of oil and grease. c) Propagation of foreign material like polythene bag, jute bag, Plastic water and cool drink containers and undecomposed waste materials dumping.	of local species to prevent soil erosion and landslide. v. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations. vi. Oiling and greasing will be managed in respective places at vehicle maintenance shed and oil tray will be use to collect the spillage during maintenance and the same will be disposed in manner. vii. Leftover foreign material like polythene bag, jute bag, undecomposed materials or ill managed dumping will not be allowed.
Water Environment	Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following: i. Flow direction of Surface run off water will interrupting during rainy season due to modification of topography. ii. Surface water will be contaminated due to dust propagation and vehicle emission.	i. Garland drain with check dam will be constructed all along the boundary barrier to prevent surface run off rain water entering into the pit. ii. The pit water due to rain and seepage will be utilized for water sprinkling on haul Roads and plantations. iii. Greenbelt will be developed in the safety zone with thick long leaves plants and water sprinkling on dust prone area to arrest the fugitive dust and vehicular emissions. iv. Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater. v. No wastewater will be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pit during rain from run-off water. vi. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom

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		effluents, the same will be disposed in manner.
Air Environment	In surface mining operations, the source of air pollution may cause deterioration of air quality due to; a) The fugitive dust emissions from drilling/blasting, scooping, loading-unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side. Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	i. Regular water sprinkling on haul road and dust prone area to arrest the dust generation. ii. Greenbelt will be developed in the safety zone and Haul road with thick long leaves plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling/dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Quarry material will be handled under wet condition during scooping, loading and unloading to minimize the dust propagation, besides loaded materials are covered by Tarpaulin until to reaches its destination. v. Provision of dust filters/ Nose mask to workers working at dust prone areas. vi. Vehicular emission as a result of combustion of diesel generates particulate matter (PM_{10} & $PM_{2.5}$), Nitrogen oxides and Sulphur dioxide (NO_2 & SO_2). High quality diesel will be used in the motor vehicles to control these pollutants. vii. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested the pollutant concentrations. viii. CPCB Prescribed emission standards for the vehicles would be followed.
Noise Environment	In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and enforced by the Govt. of India through Noise Pollution (Regulation and Control) Rules, 2000.	i. Selection of innovative low – noise equipment for the quarry operation. ii. Green belt will be developed in the safety zone, which will act as acoustic barrier to arrest noise propagation iii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations. iv. To ensure minimum vibrations and noise due to blasting, NONEL in continuous sequence is proposed. v. Personnel Protective Equipment (PPE) like earmuffs and earplugs shall be

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		provided to the employees whose in critical operation like drilling, blasting and excavation as occupational safety measures. vi. Proper maintenance done with regular interval by the Oiling and greasing for the machineries and vehicles to control the Source of noise during operation and transportation. vii. Regular and proper maintenance of machinery and transportation vehicles shall be ensured. viii. Transporting vehicles are enforcing the speed limits of 20km/hour within quarry area and not exceed 40km per hour from quarry to destination to reduce Noise and vibration. ix. There would be restrictions on mining activity and vehicular movement during night hours.
Biological Environment	The area having main floras are Neem, Cocos nucifera, Palm, Pongamia pinnata, Senna auriculata, Albizia Amara, Drumstick, Maize, Bushes, veld grape, Cactus, and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows: i. Cattles may die by entering the pit. ii. Diversity of living insects and faunas due to vibration. iii. Natural habitats of the existing faunas and its breeding will change due to the noise and vibration during operation. iv. The mining activities can also disrupt the ecological diversity. v. Deposition of dust on the plant and crop	i. Barbed wire fencing is already constructed also 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. iii. No mining will be carried out during the monsoon season to minimize impact on aquatic life for many species. iv. Fruit bearing trees will be planted to survive the existing faunas. v. No clearance of vegetation will be done during the entire mining operations. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants. vii. No night hour mining will be carried out which may catch the attention of faunas.

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	leaves is affecting the photosynthesis, Pollination, growth ratio and agriculture productivity.	
Socio – Economic Environment	Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity. i. It is proposed to provide employment to about 25 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project. ii. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities. iii. Improvement of Physical structure like Road Transport facilities, Communications, Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine. iv. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved. v. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.	i. Preference employment will be given to the local community. This quarrying activity will also indirectly provide employment to the local community by the way of petty shops, hotels, etc. ii. The CER activity proposed by the applicant will enhance the requirement of the local community. iii. The improvement of physical structure like medical and social benefits of local community will get enhanced. iv. There will be a positive enhancement of lifestyle of the nearby village

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

In the mining plan proposed for production of Rough stone. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

11.2 Proposal for waste management:

There is no waste anticipated in this Rough stone quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

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

In the mining plan only to a maximum depth of 53m has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry.

There is no waste anticipated during entire life of the quarry. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose.

The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle.

11.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The lease area is fully quarried for previous quarry operations and therefore the Greenbelt programme is proposed to be haul road and panchayat road. Around haul roads and nearby village roads will be utilized for green belt development by planting 600 numbers with 2m height tree saplings during the entire life of the quarry with an anticipated survival rate of 80%. As per the SEIAA Recommendation the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for green belt development. Appropriate native species of trees will be planted in a phased manner as described below.

Table – 15

Year	No. of tress proposed	Name of the species	No. of trees expected to be grown
I	200	Neem, Pongamia Pinnata, Cordia dichotoma, Mango, Thespesia populnea, Mantharai, etc.,	160
II	200		160
III	200		160

11.5 Proposed financial estimate / budget for (EMP) environment management:

Budget Provision for the Mining Plan period:

A. Operational Cost / Project Cost / Investment:		**Cost (Rs.)**
i) Land cost	It is a Government land the tender cost is	65,25,000
ii) Machinery cost	The following machineries are proposed on rental basis to meet out the productions. The rental cost would be around (Including Fuel, oil, grease, spares, etc.,)	10,00,000
iii) Blasting Cost	Explosives, Detonator, etc., (Rs. 6 per ton) (1,90,281 Tons x Rs. 6)	11,42,000
iv) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	3,00,000
v) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around.	80,000
vi) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	84,000
vii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	50,000
viii) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.	50,000
ix) CCTV arrangements.	Installation of CCTV cameras in the quarry area.	50,000
Total Cost		**92,81,000**

B. EMP Cost:	**Cost (Rs.)**
1. Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 50,000/ year.	1,50,000
2. Water will be sprinkled in the haul roads by own water sprinklers for dust suppression (1 No.). The cost would be around.	4,00,000
3. Fencing constructed around the lease area to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 620m x Rs. 300/meter).	1,86,000

4.	First aid room & accessories	50,000
5.	Dust extractor unit for Jackhammer (4 Nos.)	1,00,000
7.	Greenbelt development for dust suppression & Noise control measures	Greenbelt development and maintenance will be carried out in the Haul Road and Panchayat Road the cost would be around (600 saplings x Rs. 200/sapling). 1,20,000
	Total EMP Cost (B)	**10,06,000/-**

Description	**Cost (Rs.)**
A. Operational Cost	**92,81,000/-**
B. EMP Cost	**10,06,000/-**
Total Project Cost (A+ B)	**1,02,87,000/-**
C. The applicant indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, Smart class board, class room renovation, painting, sanitary facility and as per requirement to the nearby Government School at 2.0% from the total project cost. The Cost would be around **Rs. 2,06,000.** If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implement by the applicant.	**2,06,000/-**
Total Cost (A+B+C)	**1,04,93,000/-**
The total cost would be around one crore four lakhs and ninety three thousand only.	

12.0 PROGRESSIVE QUARRY CLOSURE PLAN

12.1 Introduction:

As per guidelines for preparation of mining plan prescribed under Minor Mineral Conservation and Development Rules, 2010 also the entire area is proposed for a short period of three years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

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

12.2 Present and Post Land use pattern:

LAND USE TABLE – 17

Description	Present area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	1.47.5	1.47.5
Site Services	Nil	Nil@
Roads	Nil*(0.02.0)	Nil*(0.02.0)
Green Belt	Nil	Nil #
Unutilized Area	Nil	Nil
Grand Total	**1.47.5**	**1.47.5**

* Quarry roads will be carried out in the quarry pit. Hence, the area utilization is covered area under quarry

@ Site Service will be Constructed to applicant own patta land.

#Green Belt Development will be carried out in haul roads and panchayat roads.

12.3 Statutory obligations:

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

12.4 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and name, address and register number of the 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.

(i) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an un-authorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cemaras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

(ii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

Environmental Monitoring Cell:

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the Mine Manager half yearly.

Disaster Management Cell:

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

(iii) Disposal of mining machinery

All the Machineries will be engaged on rental basis, the same has been maintained in good condition during entire life of quarry. Hence, disposal or decommissioning of mining machinery does not arise.

(iv) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

  Quarry roads and approach roads,

  Fencing on approach roads,

  Checking and maintenance of machines and equipment,

  Drinking water arrangements,

  Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

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

The quarry lease is granted for a period of three years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

(vi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, cost is assessed as given below at present scenario:

Table – 18

ACTIVITY		YEARS			RATE	COST (Rs.)
		I	II	III		
Plantation under Haul Road and panchayat Roads	Nos	200	200	200	@200 Rs Per sapling	1,20,000
	Cost	40000	40000	40000		
Barbed Wire Fencing (In Mtrs) 620 Mtrs		1,86,000	-	-	@300 Rs Per Meter	1,86,000
Total						**3,06,000**

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

The Applicant after execution of lease deed should ensure to carry out that the quarry operation in accordance to the Approved Mining plan and as per TNMMCR, 1959, Mines Act 1952 & MMR 1961.

The conditions in the nutshell as follows:

1. The quarry operation should be fenced with the barbed wire and three tier Greenbelt has to be carried out all along the boundary barriers and should be maintained till the end of the life of the mine.
2. The quarry operation should be carried out as per the regulation 3,4,5 of MMR 1961 as prescribed in the form I, II, III, IVA, IVB, IVC, V, VI.
3. Statutory competent qualified person as per regulation 39, 40, 41, 42, 43, 44, 47, 48 of MMR 1961 should be appointed to carryout day today quarrying operation in scientific & systematic manner.
4. Blasting has to be carried out during the designated timing as per the approved mining plan with sufficient warning all around the mines by only the Qualified blaster as indicated in the regulations 153, 154, 156, 160, 166, 167, 169 of MMR 1961.
5. During the Quarrying operations the benches has to be maintained and haul roads should be maintained as per the regulations 60, 61, 62, 65, 66, 95, 96, 105, 106, 110, 115, 118 of MMR 1961. When the quarry attains 30mts depth from the general ground profile a slope stability study should be carried out with competent authorized agencies only.
6. All PPE should be provided to the employees and periodic Medical Examination has to be carried out as per the regulation 124, 127, 177, 178, 181, 183, 185, 188, 190, 191A of MMR 1961.
7. The Applicant should submit the quarterly, half yearly & Annual returns to the concerned Authorities as per regulation 3, 4, 5, 9 &10 MMR 1961 on time and HYCR self-compliance reports should be submitted to the State Pollution control Board.
8. Periodical Hydrology & Hydrogeological Studies has to be carried out during the course of quarrying operation. if any significant seepages is inferred, the applicant should carry out a comprehensive Hydrogeological studies to ensure the impact of agricultural activities in and around the mine (Open well & Tube well). If the impact is noticed considerably the quarry had to be continued only after obtaining permission clearances and approval from the competent regulatory authorities.

9. The lessee should utilize green energy / Solar energy as far as possible for operation of machineries, equipment and illumination in the mine's office, quarry boundaries and avenue roads.
10. The lessee should ensure all the skilled and semi-skilled workers should be provided trainings in nearby Vocational Training center as per the MVTR 1966 and should be registered in Shram Suvidha portal as directed by the Ministry of labour.
11. The lessee should carry out the quarrying operation keeping the view of mineral conservation, development and sustainable mining.
12. If the lessee intends to deviate from the approved mining plan, a modified mining plan has to be prepared submitted and approved from the concerned authority before making any significant changes in the mining operations.
13. The lessee should carry out the mining operation in Eco friendly environment with good hygienic conditions to the employees deployed and maintain good harmony with local communities in the impact zone.
14. The conditions stipulated in the lease deed and Environmental clearance especially the mitigation measures as proposed in EMP to the SEIAA has to be followed during the course of quarrying operation and also to as per the rules of TNMCR 1959, Mine act 1952, MMR 1961, Mine Rule 1955, Environment Protection Act 1986 and Indian Explosive act 1884 and Indian Explosive Rules 2008 and all the amendments issued by the concern State and Central Government authorities from time to time.

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement and full consent by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by

B. Vengadagiri, M.Sc.,
Qualified Person

Place: Salem
Date: 22.01.2024

This mining plan is approved in exercise of the powers conferred under Rule 41(2) and (5) TNMMCR 1959 and subject to the conditions / stipulations indicated in the mining plan approved letter Rc.No: 1060/2023(Quarry) Dated: 22.3.24

ASSISTANT DIRECTOR
GEOLOGY AND MINING
PUDUKKOTTAI

22/3/24

70 A

TOPOGRAPHICAL VIEW OF MELUR ROGH STONE QUARRY LEASE APPLIED AREA







ANNEXURE 1



ந.க.எண். 1060/2023/கனிமம்
நாள்: 11 .01.2024

புவியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியரகம்,
புதுக்கோட்டை

குறிப்பாணை

பொருள் கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - சாதாரண வகை கற்கள் - புதுக்கோட்டை மாவட்டம் - அரசு புறம்போக்கு புலங்களில் அமைந்துள்ள கற்குவாரிகள் - டெண்டர் / ஏலம் முறையில் குத்தகை வழங்குவது - குளத்தூர் வட்டம் - மேலூர் கிராமம் - புல எண்.216/1, 1.47.5 ஹெக்டேர் பரப்பில் 16.11.2023 அன்று டெண்டருடன் இணைந்த ஏலம் நடத்தப்பட்டது - ஏலத்தில் அதிகபட்ச குத்தகை தொகை குறிப்பிட்ட திரு.ரா.ஜாபர் அலி என்பவருக்கு ஏலம் உறுதி செய்யப்பட்டது - ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச்சூழல் ஆணைய இசைவு பெற்று சமர்ப்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை:
1. புதுக்கோட்டை மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.14 நாள்:19.10.2023.
2. தினமணி நாளிதழில் விளம்பரம் நாள்:01.11.2023.
3. திரு.ரா.ஜாபர் அலி என்பவரின் ஏல விண்ணப்பம் நாள்:16.11.2023.
4. திரு.ரா.ஜாபர் அலி என்பவரது கடிதம் நாள்: 05.12.2023
5. தொடர்புடைய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. புதுக்கோட்டை மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் உள்ள சாதாரண கற்களை வெட்டியெடுத்துச் செல்ல உரிமம் வழங்க ஏதுவாக புதுக்கோட்டை மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.14 நாள்:19.10.2023-ன்படி பிரசுரம் செய்யப்பட்டது. அதன்படி 15.11.2023-ம் நாள் பிற்பகல் 05.00 மணிக்குள் மூடி முத்திரை இடப்பட்ட டெண்டர் மனுக்களை அளிக்க இறுதி நாளாக அறிவித்து, 16.11.2023 அன்று பொது ஏலம் நடத்தப்பட்டு டெண்டர் மனுக்கள் ஏலத்தில் கலந்து கொண்டவர்கள் முன்னிலையில் திறக்கப்பட்டன.

3. மேற்கண்ட அரசிதழில் விளம்பரம் செய்யப்பட்டிருந்த குவாரிப்பட்டியலில் வரிசை எண்.6, குளத்தூர் வட்டம், மேலூர் கிராமம், அரசு புறம்போக்கு புல எண்.216/1-ல் 1.47.5 ஹெக்டேர் பரப்பில் உள்ள கற்குவாரிக்கு டெண்டர் / பொது ஏலத்தில் கலந்து கொண்டவர்களில் திரு.ரா.ஜாபர் அலி ஏலத்தில் கோரிய தொகை ரூ.65,25,000/- மாவட்ட ஆட்சித்தலைவர் அவர்களால் நிர்ணயம் செய்யப்பட்டிருந்த ஏலத் தொகையை விட அதிகமாக இருந்ததால் ஏலத்தொகை முழுவதையும் செலுத்த

கேட்டுக்கொள்ளப்பட்டது. மேற்கண்ட ஏலதாரர் மொத்த குத்தகை தொகையையும் விதிகளின்படி 30.11.2023-க்குள் செலுத்தியுள்ளார்.

4. எனவே, ஏலதாரர் குத்தகை தொகை முழுவதும் செலுத்திவிட்டபடியால், மேற்படி கற்குவாரி ஏலமானது விதிகளின்படி உயர்ந்தபட்ச ஏலம் கோரிய திரு.ரா.ஜாபர் அலி என்பவருக்கு உறுதி செய்யப்படுகிறது. மேலும், மேற்படி நபருக்கு குளத்தூர் வட்டம், மேலூர் கிராமம், அரசு புறம்போக்கு புல எண்.216/1-ல் 1.47.5 ஹெக்டேர் பரப்பு புலத்தில் மூன்று (3) ஆண்டுகளுக்கு குவாரி உரிமம் வழங்க ஏதுவாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.41-ன்படி கீழ்க்கண்ட நிபந்தனைகளுடன் ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டத்தினை 90 தினங்களுக்குள் சமர்பிக்கவும், அதன் தொடர்ச்சியாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-ன்படி மாவட்ட சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவு பெற்று சமர்ப்பிக்கும் பட்சத்தில் சாதாரண கற்குவாரி உரிமம் வழங்கப்படும் என்ற விவரம் இதன் மூலம் தெரிவிக்கப்படுகிறது.

நிபந்தனைகள்:

a. 1959ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், அட்டவணை-II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

b. அருகிலுள்ள பட்டாதாரர்களுக்கு எவ்வித இடையூரும் ஏற்படாத வண்ணம் குவாரிப் பணி மேற்கொள்ள வேண்டும்.

c. விதிகளின் படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்பிக்க வேண்டும்.

d. குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் முன் அனுமதி பெற்று சமர்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

இணைப்பு: குத்தகை உரிமம் வழங்க
பரிந்துரைக்கப்பட்ட புல வரைபடம்.

(ஒம்) . . . மெர்சி ரம்யா,
மாவட்ட ஆட்சித்தலைவர்,
புதுக்கோட்டை.

// உண்மை நகல்// உத்தரவுபடி//

11/01/24

மாவட்ட ஆட்சியருக்காக,

பெறுநர்:
திரு.ரா.ஜாபர் அலி,
த/பெ.ராஜா முகமது,
T.S.No.9884, கலீப்நகர் 4ம் வீதி,
புதுக்கோட்டை மாவட்டம்.

11/01/24

நகல்: 1. ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை
2. தமிழ்நாடு மாநில சுற்றுச்சூழல் மதிப்பீட்டு ஆணையம், சென்னை

ANNEXURE V

© தமிழ்நாடு அரசு 2023

புதுக்கோட்டை மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

புதுக்கோட்டை, அக்டோபர் 19, 2023 [எண் 14

ஐப்பசி 2, சோபகிருது, திருவள்ளுவர் ஆண்டு—2054

மாவட்ட ஆட்சியர் அறிவிக்கை

கனிமங்களும் குவாரிகளும் - மதுரை மாவட்டம் - 1959 ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி 8(1) ன்படி டெண்டர் இணைந்த பொது ஏலத்தில் விடுவது குறித்த அறிவிப்பு.

மாவட்ட ஆட்சியர் ந.க.எண் 611/2022 (புமசு), நாள்: 18-10-2023

புதுக்கோட்டை மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் தேர்வு செய்யப்பட்டுள்ள கல் குவாரியிலிருந்து சாதாரண பொது உபயோக சிறு கனிமங்களைக் குவாரி செய்து எடுத்து செல்வதற்கான குத்தகை உரிமம் வழங்க வேண்டி மூடி முத்திரையிட்ட டெண்டர் விண்ணப்பங்கள் கோருதல் மற்றும் பொது ஏல அறிவிப்பு.

(அ) 1959 ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி 8-ன் உள்விதி (1)-ன்படி இந்த அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள அட்டவணையில் குறிப்பிடப்பட்டுள்ள அரசுப் புறம்போக்கு நிலங்களில் அமைந்துள்ள கல்குவாரிகளிலிருந்து சாதாரண உடைகல், குண்டுக்கல், சக்கைக்கல், ஜல்லி, கலுக்கால் வெட்டி எடுத்துச் செல்ல ஏற்கனவே கல் உடைக்கப்பட்ட குவாரிகளுக்கு ஐந்து ஆண்டு காலத்திற்கும், கல் உடைக்கப்படாத குவாரிக்கு பத்து ஆண்டு காலத்திற்கும் குத்தகை பெற மூடி முத்திரையிடப்பட்ட மறைமுக டெண்டருடன் இணைந்த திறந்த முறை ஏலத்தின் மூலம் குவாரி குத்தகை கோரும் டெண்டர் மனுக்கள் முப்பிரதிகளில் புதுக்கோட்டை மாவட்ட ஆட்சியரால் 15.11.2023 மாலை 5.00 மணி வரையிலும் வரவேற்கப்படுகிறது.

(ஆ) திறந்த முறை ஏலம் மற்றும் மறைமுக டெண்டர் உறைகள் திறப்பது ஆகிய நடைமுறைகள் புதுக்கோட்டை மாவட்ட ஆட்சியர் அலுவலக வளாகத்தில் உள்ள கூட்ட அரங்கில் 16.11.2023 அன்று காலை 11.00 மணிக்கு தொடங்கி நடத்தப்படும்.

பகுதி – I மனு செய்வதற்கான நிபந்தனைகள்

1. இவ்வறிக்கை தொடர்பாக குவாரி குத்தகை கோரும் டெண்டர் மனுக்கள் 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் இணைப்பு VI-ல் கண்டுள்ள படிவத்தில் அசல் மற்றும் இரண்டு நகல்களுடன் கொடுக்கப்பட வேண்டும். அதன் மாதிரிப்படிவம் இவ்வறிக்கையின் கடைசியில் இணைக்கப்பட்டுள்ளது. பிற்சேர்க்கையில் பிரசுரிக்கப்பட்டுள்ள படிவம் VI-ன்படி பூர்த்தி செய்து அனுப்பப்படாத விண்ணப்பங்கள் ஏற்றுக்கொள்ளப் படமாட்டாது. மேற்படி படிவம் VI-ன் படி உரிய இணைப்புகளுடன் இல்லாத விண்ணப்பங்கள் மாவட்ட ஆட்சியரால் நிராகரிக்கப்படும்.

2. இந்த அறிவிக்கையின் இறுதியில் கண்டுள்ள அட்டவணையில் கொடுக்கப்பட்ட ஒவ்வொரு இனத்திற்கும் தனித்தனியாக மனுக்கள் கொடுக்கப்பட வேண்டும்.

3. டெண்டர் மனுவுடன் கீழ்கண்ட ஆவணங்கள் அசல் மற்றும் இரண்டு நகல்களில் முறையே அசல் மற்றும் நகல் மனுக்களுடன் இணைத்து கொடுக்கப்பட வேண்டும்.

(அ) திரும்பப்பெற இயலாத விண்ணப்ப படிவ கட்டணமான ரூ.1500/-ஐ அரசு கருவூலத்தில் செலுத்திய சலான் மனுவுடன் இணைக்க வேண்டும் அல்லது ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில், வங்கி வரைவோலை (Demand Draft) "மாவட்ட ஆட்சியர், புதுக்கோட்டை" என்ற பதவி குறிப்பிட்டு எடுத்து இணைக்கப்பட வேண்டும்.

(ஆ) பிணை வைப்புத் தொகையாக (Earnest Money Deposit) ரூ.25,000/- மட்டும் மாவட்ட ஆட்சியர், புதுக்கோட்டை என்ற பெயருக்கு ஏதேனும் ஒரு தேசிய மயமாக்கப்பட்ட வங்கியில் வங்கி வரைவோலை (Demand Draft) பெற்று மனுவுடன் இணைக்கப்பட வேண்டும். தனி நபர் பெயருக்கு எடுத்துக் கொடுக்கப்படும் வங்கி வரைவோலை ஏற்றுக்கொள்ளப்பட மாட்டாது.

(இ) டெண்டர் மனுதாரர், தான் மறைமுகமாக குறிப்பிடும் அதிகபட்ச டெண்டர் தொகையில் 10 சதவீதம் தொகைக்கான வங்கி வரைவோலையை (Demand Draft) ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் "மாவட்ட ஆட்சியர், புதுக்கோட்டை" என்ற பெயரில் மனுவுடன் இணைக்க வேண்டும்.

(ஈ) டெண்டர் மனுதாரர் தனியாகவோ அல்லது மற்றவருடன் கூட்டாகவோ இணைந்து தமிழ்நாட்டில் எந்தவொரு மாவட்டத்திலும் (i) ஏற்கனவே காலாவதியான குவாரி குத்தகை விபரம், (ii) நடப்பில் உள்ள குவாரி குத்தகை விபரம், (iii) குத்தகை

கோரி மனு செய்யப்பட்டு, நிலுவையில் உள்ள மனுக்கள் விபரம் மற்றும் (iv) தற்போதைய மனுவுடன் ஒரே நேரத்தில் வேறு பகுதியில் குத்தகை கோரும் மனுக்கள் விபரம் ஆகியவைகள் அடங்கிய ஆணை உறுதி ஆவணத்தை, சான்று உறுதி அலுவலரின் ஒப்புதல் பெற்று இணைக்க வேண்டும்.

(உ) டெண்டர் மனுதாரர் நிபந்தனை (ஈ) யில் கண்ட விபரப்படி ஏற்கனவே உள் மற்றும் வெளி மாவட்டங்களில் குவாரி குத்தகை பெற்றிருப்பவராயின் சுரங்க வரியினங்களான, ராயல்டி, சீனியரேஜ் தொகை, முடக்குவரி, பரப்புவரி, மாவட்ட கனிம அறக்கட்டளை நிதி மற்றும் அபராதம் ஏதேனும் விதிக்கப்பட்டிருப்பின் அந்த தொகைகளை செலுத்தியதற்கான "சுரங்க வரி நிலுவையில்லா சான்று" பெற்று ஒப்படைக்க வேண்டும்.

(ஊ) டெண்டர் மனுதாரர், வருமானவரி செலுத்துபவராக இருப்பின், செல்லுபடியாகத்தக்க வருமானவரிச் சான்று பெற்று ஒப்படைப்பதுடன் (i) நாளது தேதிவரை வருமான வரி தொடர்பான கணக்குகளை அத்துறைக்கு சமர்ப்பித்ததாகவும், (ii) 1961-ம் ஆண்டு வருமான வரிச் சட்டத்தின்படி அவ் கணக்கீடு செய்து அதன் அடிப்படையில் வருமான வரி செலுத்தியதாகவும் குறிப்பிட்டு, ஆணை உறுதி ஆவணத்தில் ஒப்பமிட்டு சான்று உறுதி அலுவலரின் ஒப்புதல் பெற்று மனுவுடன் இணைக்க வேண்டும்.

(எ) மேற்கண்ட ஆணை உறுதி வாக்குமூலங்கள் (Affidavit) ரூ.20/- மதிப்புள்ள முத்திரைத்தாள்களில் நோட்டரி பப்ளிக் முன்பு கையொப்பமிட்டதாக இருக்க வேண்டும்.

4. மேற்கண்ட இணைப்புகளுடன், அசல் மனு மற்றும் இரண்டு நகல்கள் ஆகியவற்றை எழுத்துக்கள் தெரியாத வகையில் உள்ள காகித உறையிலிட்டு, அதில் வேண்டிய இடங்களில் அரக்கு கொண்டு சீல் வைத்து பின்னர் உறையின் மேல் அட்டவணையில் கண்ட குவாரி வரிசை எண், கிராமம் மற்றும் புல எண்ணைக் குறிப்பிட்டு, குத்தகை கோரும் டெண்டர் மனு என்று தலைப்பிட்டும், அதன் கீழ் டெண்டர் மனுதாரரின் பெயர் மற்றும் சரியான முகவரி எழுதியும், பெறுநர், "மாவட்ட ஆட்சியர், புதுக்கோட்டை மாவட்டம்" என்று தெளிவாகவும் எழுதி கீழ் குறிப்பிடப்பட்ட அலுவலருக்கு 15.11.2023 அன்று மாலை 5.00 மணிக்குள் கிடைக்குமாறு அனுப்பி வைக்க வேண்டும்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியர் அலுவலகம்,
புதுக்கோட்டை.

5. நேரடியாக அலுவலகத்தில் கொடுக்கப்படும் முத்திரை இடப்பட்ட டெண்டர் உறைகளை பெற்றுக் கொண்டமைக்கான தமிழ்நாடு சிறுகனிம சலுகை விதிகள், 1959-ன் பின்னிணைப்பு IX-ல் கண்ட படிவத்தில் ஒப்புதல் கடிதம் வழங்கப்படும். பதிவுத்தபாலில் அனுப்பி வைக்கப்படும் உறைகளுக்கு, அவை அலுவலகத்தில் கிடைக்கப்பெறும் நாளிலிருந்து மூன்று தினங்களுக்குள் ஒப்புதல் கடிதம் அனுப்பி வைக்கப்படும்.

6. குறிப்பிட்ட காலக்கெடு முடிந்த பின்னர், அலுவலரால் பெறப்படும் முத்திரை வைத்த டெண்டர் உறைகள் மற்றும் உறையின் மீது பெறுநர் "மாவட்ட ஆட்சியர், புதுக்கோட்டை மாவட்டம்" எனக் குறிப்பிடப்படாத டெண்டர் உறைகள் ஏற்றுக்கொள்ளப்படாமலேயே டெண்டர் மனுதாரருக்கு திருப்பப்படும்.

7. டெண்டர் விண்ணப்பப்படிவத்தில் மனுச் செய்யும் நபர்கள் தாங்கள் மனுச் செய்யும் குவாரிக்கு குத்தகையாகச் செலுத்த விரும்பும் தொகையை விண்ணப்பத்தில் குறிப்பிடாமல் இருந்தாலோ, அல்லது பிணை வைப்புத் தொகைக்கான காசோலைகளை விண்ணப்பத்தில் இணைக்காமல் இருந்தாலோ, விண்ணப்பதாளில் விண்ணப்பதாரர் தன் கையொப்பம் செய்யாமல் இருந்தாலோ, தமிழ்நாடு சிறு கனிம சலுகை விதிகளில் கூறப்பட்ட ஆணை உறுதி வாக்கு மூலங்கள் எதுவும் இணைக்கப்படாமல் இருந்தாலோ, மேற்படி டெண்டர் விண்ணப்பம் மாவட்ட ஆட்சியரால் அல்லது அவரால் அங்கீகரிக்கப்பட்ட அலுவலரால் நிராகரிக்கப்படும்.

8. மேற்குறிப்பிட்டவாறு விண்ணப்பம் நிராகரிக்கப்பட்ட டெண்டர் விண்ணப்பதாரர்களுக்கு டெண்டர் திறக்கும் சமயத்தில் அவர் இருந்திருப்பின் மாவட்ட ஆட்சியர் அல்லது அவரது அங்கீகாரம் பெற்றுள்ள அலுவலரால் விண்ணப்பதாரரிடம் தக்க ஒப்புதல் பெற்று காசோலை திருப்பி வழங்கப்படும். டெண்டர் திறக்கும் சமயத்தில் ஆஜரில் இல்லாத நபருக்கு பதிவஞ்சல் கடிதத்தில் கேட்பு காசோலை (Demand Draft) தனியே அனுப்பி வைக்கப்படும். ஆனால் அவ்வாறான விண்ணப்பதாரர் ஏலத்தில் அதிகத் தொகைக்கு ஏலம் கேட்டிருந்து, ஏற்கனவே பிணை வைப்புத் தொகையும் செலுத்தியிருப்பின் அவரது விண்ணப்பம் ஏற்றுக் கொள்ளப்படும்.

9. முன் குறிப்பிடப்பட்ட நிபந்தனைகளின்படி பெறப்பட்ட டெண்டர் உறை அனுப்பிய மனுதாரர்கள் டெண்டர் உறைகள் திறக்கப்படும் போது ஏல அரங்கில் இருக்க அனுமதிக்கப்படுவர்.

10. அலுவலரால் பெறப்பட்ட முத்திரை இடப்பட்ட டெண்டர் உறைகள் திறக்கப்படுவதற்கு முன் இந்த அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள அட்டவணையில் குறிப்பிடப்பட்ட ஒவ்வொரு இனங்களுக்கும் திறந்த முறை பொது ஏலம் 16.11.2023 அன்று காலை 11.00 மணியளவில் தொடங்கி தொடர்ந்து நடத்தப்படும்.

பகுதி – II திறந்த முறை பொது ஏலத்தில் கலந்து கொள்வதற்கான நிபந்தனைகள்

1. பொது ஏலத்தில் கலந்து கொள்ள விரும்புபவர் பகுதி I-ல் குறிப்பிடப்பட்டவாறு மனு மற்றும் ஆவணங்களை அசல் மற்றும் இரண்டு நகல்களுடன் ஏல நாளான 16.11.2023 அன்று காலை 11.00 மணிக்கு ஒவ்வொரு கல்குவாரிக்கும் பொது ஏலம் நடக்கும் போது நேரிடையாக பொது ஏலத்தில் கலந்து கொள்ளலாம்.

2. திறந்த முறை ஏலத்தில் கலந்து கொள்ள மனு கொடுப்போர், மனுவின் இனம் 9-ல் கண்டுள்ள வினாவில் டெண்டர் / கேட்புத் தொகை குறிப்பிடத் தேவையில்லை.

3. மூடி முத்திரையிடப்பட்ட உறையின் மூலம் டெண்டர் மனு கொடுத்துள்ள நபர் இரண்டாம் முறையாக மனு கொடுக்க தேவையில்லை. ஆனால் அவர்கள் நேரடியாக திறந்தமுறை பொது ஏலத்திலும் கலந்து கொள்ளலாம்.

4. முத்திரை இடப்பட்ட டெண்டர் உறை கொடுத்துள்ள மனுதாரர் மற்றும் பொது ஏலத்தில் கலந்து கொள்ள உள்ள மனுதாரர் ஆகியோர், பொது ஏலத்தில் கலந்து கொள்ள இயலாத நிலையில் அவர்களது நியமனம் பெற்ற மற்றொரு நபர் மனுதாரரின் ஒப்புதல் கடிதம் பெற்று அதனை சான்று உறுதி அலுவலரின் மேலொப்பம் பெற்று அதனையும், விண்ணப்பம் கொடுத்ததற்கான அலுவலரிடமிருந்து பெறப்பட்ட அசல் ஒப்புதல் கடிதத்தையும் ஏலம் நடத்தும் அலுவலரிடம் ஒப்படைத்துவிட்டு, ஏலத்தில் கலந்து கொள்ள வேண்டும். ஏலம் முடிவடைந்தவுடன் அலுவலர் கொடுத்த ஒப்புதல் கடிதம் மட்டும் திரும்ப ஒப்படைக்கப்படும்.

5. (அ) மாவட்ட ஆட்சியரோ அல்லது அவரது அதிகார அனுமதி பெற்ற அலுவலரோ குவாரி குத்தகை தொடர்பாக திறந்தமுறை ஏலம் நடத்துவார். அப்போது திறந்தமுறை ஏலத்திற்கு மனு கொடுத்தவர்கள் மற்றும் டெண்டர் உறை கொடுத்தவர்களும் தான் கொடுக்க விரும்பும் ஏலத்தொகையை கூற அனுமதிக்கப்படுவர்.

(ஆ) மனுதாரர் அல்லது அவரது அதிகாரம் பெற்ற நபர் யாரேயினும் ஏலத்தில் கலந்து கொள்ளாதபோதும், ஏலம் நடத்தப்பட்டு டெண்டர் உறைகள் திறக்கப்பட்டு விதிமுறைகளின்படி, மேல்நடவடிக்கை தொடரப்படும்.

6. ஏலம் முடிந்தபின் ஏலம் நடத்தும் அலுவலர், திறந்தமுறை ஏலத்திற்கு பெறப்பட்ட மொத்த மனுக்களின் எண்ணிக்கை மனு கொடுத்துள்ளவர்களின் பெயர், அதிகபட்சமாக கூறப்பட்ட ஏலத் தொகையை குறிப்பிட்டு ஏலம் கூறிய நபர் மற்றும் முகவரி ஆகியவற்றை ஏலம் நடத்தப்படும் இடத்திலேயே அறிவிப்பார்.

7. பின்னர் குத்தகை கோரி பெறப்பட்ட எல்லா மூடி முத்திரை இடப்பட்ட டெண்டர் உறைகளும் திறக்கப்பட்டு, அவற்றில் உள்ள மனுக்கள், ஏலதாரர்கள் மற்றும் டெண்டர்தாரர்கள் முன்னிலையில் ஆய்வு செய்யப்படும்.

8. பகுதி–I-ல் கண்ட நிபந்தனை 3-ல் குறிப்பிடப்பட்டுள்ள ஆவணங்கள் மற்றும் தொகைக்கான வரைவோலைகள் இணைக்கப்படாத மனுக்களும், மனுவின் இனம் 9-ல் டெண்டர் தொகைக்கான குறிப்பிடாத மனுக்களும், டெண்டர்தாரரின் கையொப்பம் இடப்படாத மனுக்களும் தவறான விபரங்கள் எழுதப்பட்ட மனுக்களும் செல்லத்தகாதவை என்று முடிவு செய்யப்பட்டு ஏலக்கூட்டத்திலேயே அறிவிக்கப்படும். இதற்கான தனியே எழுத்து மூலமாக ஆணை ஏதும் பிறப்பிக்கப்பட மாட்டாது. இதுபற்றி மனுவின் மீது விபரம் எழுதப்பட்டு டெண்டர்தாரரின் ஒப்புதல் பெறப்படும்.

9. செல்லுபடியாகத்தக்க மனுக்கள் ஆய்வு செய்யப்பட்டு அவற்றில் அதிகபட்ச டெண்டர் தொகை குறிப்பிடப்பட்டுள்ள டெண்டர்தாரரின் பெயர் மற்றும் முகவரி ஆகியவை ஏலக்கூடத்தில் அறிவிக்கப்படும்.

10. ஒவ்வொரு குவாரிக்கும் பெறப்பட்ட டெண்டர் விண்ணப்பங்களில் குறிப்பிடப்பட்டுள்ள அதிகபட்சமான குத்தகைத்தொகை அல்லது ஏலத்தின் மூலம் கேட்கப்படும் அதிகபட்ச ஏலத்தொகை இவற்றில் எது அதிகமோ அந்த தொகைக்கு டெண்டர்/ஏலம் கேட்ட நபர் குத்தகை பெற தகுதியானவர் என ஏல அரங்கில் மாவட்ட ஆட்சியர் அல்லது மாவட்ட ஆட்சியரால் அங்கீகரிக்கப்பட்ட அலுவலரால் அறிவிக்கப்படும்.

11. முதல் நிலை பொது ஏலத்தில் கூறப்பட்ட அதிகபட்ச ஏலத் தொகையைவிட அதிகமாக மறைமுக டெண்டர் முறையில் இரண்டு அல்லது அதற்கு மேற்பட்ட நபர்கள் ஒரே டெண்டர் தொகை குறிப்பிட்டிருந்தால் அவ்வாறு குறிப்பிட்ட டெண்டர்தாரர்களிடையே இரண்டாம் நிலை திறந்த முறை பொது ஏலம் நடத்தப்பட்டு, அதில் அதிகத்தொகை செலுத்த முன் வருபவர் குவாரி குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்படுவார்.

12. முதல் நிலை திறந்த முறை பொது ஏலத்தில் கூறப்பட்ட அதிகபட்ச ஏலத் தொகையையும் மறைமுக டெண்டர் முறையில், குறிப்பிட்ட அதிகபட்ச டெண்டர் தொகையும், ஒரே தொகையாக இருந்தால் அவ்விரு தொகைகளை கூறிய நபர்களிடையே இரண்டாம் நிலை திறந்த முறை ஏலம் நடத்தப்பட்டு அதில் அதிகத்தொகை செலுத்த முன்வருபவர் குவாரி குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்படுவர்.

13. (அ) அதிகபட்ச ஏலத் தொகை கோரி குவாரி குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்பட்ட நபர், அதிகபட்ச ஏலத் தொகையில் 10% சதவீத தொகையை உடனடியாக ஏலம் நடத்திய அலுவலரிடம் செலுத்தி ஒப்புதல் கடிதம் பெற்றுக் கொள்ள வேண்டும். மீதி 90% சதவீதத் தொகையை ஏலம் நடைபெறும் நாளிலிருந்து பதினைந்து நாட்களுக்குள் செலுத்தக் கோரி அறிவிப்பு ஒப்புதல் கடிதத்திலேயே குறிப்பிடப்பட்டிருக்கும்.

(ஆ) மேலே குறிப்பிட்டவாறு அந்தந்த குவாரிக்கான ஏலக்கேட்பு முடிவு செய்யப்பட்ட உடன் 10% சதவீத தொகை செலுத்தாத பட்சத்தில் அந்த நபரால் ஏற்கனவே அரசுக்கு வங்கி வரைவோலை மூலம் செலுத்தியுள்ள தொகைகள் அரசுடமையாக்கப்படும்.

14. (அ) நிபந்தனை 13-ன்படி அதிகபட்ச ஏலத் தொகை கூறி குத்தகை பெறத் தகுதியானவர் என்று அறிவிக்கப்பட்ட நபர் உடனடியாக 10% சதவீத தொகை செலுத்தாத நிலையில், அவருக்கு அடுத்தபடியாக அதிக ஏலத் தொகை அல்லது டெண்டர் தொகை குறிப்பிட்ட நபரின் ஏலத்தொகை ஏற்புடையதாக இருக்கும் பட்சத்தில் குத்தகை பெறத் தகுதியானவர் என்று அறிவிக்கப்பட்டு அவர் குறிப்பிட்டுள்ள குத்தகைத் தொகையில் பத்து சதவீதத் தொகையை உடனே செலுத்துமாறு கோரப்படுவார். உரிய தொகையை அவர் அரசுக்குச் செலுத்தினால் அவர் குத்தகை பெறத் தகுதியானவர் என்று அறிவிக்கப்படுவார்.

(ஆ) மேற்கண்டவாறு குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்பட்ட இரண்டாவது நபரும் 10% சதவீத தொகை செலுத்தாத போது மேற்கண்ட வழிமுறையை மாவட்ட ஆட்சியர் மீண்டும் நடைமுறைப்படுத்தலாம் அல்லது ஏலத் தொகை ஏற்புடையது அல்ல என்று மாவட்ட ஆட்சியர் கருதினால் உரிய குவாரியை மறு டெண்டர் / ஏலம் மூலம் குத்தகைக்கு விடலாம்.

15. குவாரி குத்தகை பெற தகுதியானவர் பெயர் அறிவிக்கப்பட்ட பின்னர், இதர மனுதாரருக்கு வரைவோலையை திரும்ப வழங்க பின்னர் நடவடிக்கை எடுக்கப்படும்.

16. (அ) குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்பட்ட நபர் நிலுவையிலுள்ள 90% சதவீத குத்தகைத் தொகையை ஏலம் நடைபெறும் நாளிலிருந்து 15 நாட்களுக்குள் அதனை அரசுக்கு செலுத்த வேண்டும்.

(ஆ) உயர்ந்த பட்ச ஏலதாரர்/டெண்டர்தாரர் என அறிவிக்கப்படும் நபர் குத்தகை தொகை செலுத்துவதுடன், குத்தகை தொகைக்கு உண்டான வருமான வரி 2% செலுத்தப்படவேண்டும். செலுத்தப்பட்ட வருமானவரிக்கு 10% கூடுதல் வரி செலுத்தப்பட வேண்டும். மேலும் செலுத்தப்பட்ட வருவானவரி மற்றும் கூடுதல் வரிக்கு 3% தீர்வை செலுத்தப்படவேண்டும்.

(இ) மேற்குறிப்பிட்ட 90% சதவீதத் தொகை குறிப்பிட்ட காலத்திற்குள் செலுத்தப்படாவிட்டால், குத்தகை கோரும் நபர் ஏற்கனவே செலுத்தியுள்ள 10 சதவீத தொகை மற்றும் முன்வைப்பு தொகையான ரூ.25,000/- ஆகியவை அரசுடமையாக்கப்படும்.

(ஈ) நிபந்தனை 16(அ)-ன்படி குத்தகைத் தொகை செலுத்தப்படாதபோது தொகை செலுத்தக் கோரப்பட்ட நபருக்கு அடுத்தபடியாக அதிக தொகை செலுத்த டெண்டர் / ஏலம் கூறிய நபர் குத்தகை பெறத் தகுதியானவர் என்று எழுத்து மூலம் அறிவிக்கப்பட்டு அவர் கூறிய மொத்த ஏலத்தொகையை பத்து நாட்களுக்குள் அரசுக்கு செலுத்துமாறு கோரப்படும்.

(உ) நிபந்தனை 16(இ)-ன்படியும் கோரப்பட்ட குத்தகைத் தொகை செலுத்தப்படா விட்டால், தொடர்புடைய கல்குவாரி டெண்டர் / பொது ஏலம் மூலம் குத்தகைக்கு விட மறு அறிவிப்பு செய்யப்பட்டு நடவடிக்கை தொடரப்படும்.

17. (அ) குவாரி குத்தகை கோரி ஒரே ஒரு மறைமுக டெண்டர் மனு கொடுக்கப்பட்டு திறந்த முறை பொது ஏலத்தில் கலந்து கொள்ள யாரும் முன்வரவில்லையெனில், டெண்டர் தொகை அரசுக்கு ஆதாயமானது என்று மாவட்ட ஆட்சியர் கருதினால், அந்த டெண்டர் மனுதாரருக்கு குவாரி குத்தகை வழங்க மாவட்ட ஆட்சியர் ஒப்புதல் அளிக்கலாம். டெண்டர் தொகை அரசுக்கு ஆதாயமானதல்ல என்று மாவட்ட ஆட்சியர் கருதும் பட்சத்தில், மனுவைத் தள்ளுபடி செய்து ஆணையிடப்பட்டு மறு ஏலத்தின் மூலம் குவாரி குத்தகை வழங்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

(ஆ) இரண்டு அல்லது அதற்கு அதிகமான மனுக்கள் பெறப்பட்டாலும் சுட அதிகபட்ச டெண்டர் / ஏலத்தொகை அரசுக்கு ஆதாயமானதல்ல என்று மாவட்ட ஆட்சியர் கருதினால் மனுவை தள்ளுபடி செய்தும், மறு ஏலம் நடத்த மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

பகுதி – III குவாரி குத்தகை பெறுவதற்கான நிபந்தனைகள்

1. (அ) தமிழ்நாட்டில் எல்லா மாவட்டங்களிலும் சேர்த்து ஒரு மனுதாரருக்கு இரண்டு கல்குவாரி குத்தகைக்கு மேல் வழங்கப்பட மாட்டாது. தவறான தகவல் தந்து இரண்டுக்கு மேற்பட்ட குத்தகைகள் பெறப்பட்டிருப்பது பின்னர் தெரியவந்தால் கடைசியாக கொடுக்கப்பட்ட குத்தகையை ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.

(ஆ) குவாரி உரிமம் பெறுவது தொடர்பாக உயர்ந்தபட்ச டெண்டர் / ஏலதாரர் குத்தகை தொகையைச் செலுத்தி அதற்குரிய சலானை மாவட்ட ஆட்சியரிடம் ஒப்படைத்த பின்பு குவாரி உரிமம் வழங்க உத்தேசிக்கப்பட்டுள்ள பரப்பாக கருதி அறிவித்து குறிப்பாணை வழங்கப்படும்.

(இ) மேற்படி குறிப்பாணையை பெற்ற அதிக தொகை செலுத்த டெண்டர் / ஏலம் கோரிய நபர் தகுதியான சுரங்கத்திட்ட அறிக்கையை அங்கீகரிக்கப்பட்ட (RQP) நபரிடமிருந்து தயார் செய்து சம்பந்தப்பட்ட உதவி இயக்குநரின் ஒப்புதலுக்கு 90 நாட்களுக்குள் சமர்ப்பிக்க வேண்டும்.

(உ) உயர்ந்தபட்ச டெண்டர் / ஏலதாரர் சமர்ப்பித்த சுரங்கத்திட்டத்தினை பரிசீலனை செய்து திட்டத்தில் மாற்றம் இருப்பின் திருத்தி அமைக்கும் பொருட்டும் சுரங்கத்திட்டம் புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநரால் ஒப்புதல் செய்யவும், சுரங்கத்திட்டம் பெறப்பட்ட நாளிலிருந்து 90 நாட்கள் கால அவகாசமாகும்.

(ஊ) சம்பந்தப்பட்ட உதவி இயக்குநரால் ஒப்புதல் செய்யப்பட்ட சுரங்கத்திட்ட அறிக்கையை அதிக தொகை செலுத்த டெண்டர் / ஏலம் கூறிய நபர் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று கோரி விண்ணப்பித்து தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மாவட்ட ஆட்சித்தலைவர் அவர்களால் அதிக தொகை செலுத்த டெண்டர் / ஏலம் கூறிய நபருக்கு குவாரி உரிமம் வழங்க நடவடிக்கை எடுக்கப்படும்.

(எ) உரிய காலக்கெடுவிற்குள் உயர்ந்தபட்ச டெண்டர் / ஏலதாரர் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கத் தவறும் பட்சத்தில் மாவட்ட ஆட்சித்தலைவர் அவர்களால் மேற்படி ஆணையை இரத்து செய்ய நடவடிக்கை மேற்கொள்ளப்படும்.

(ஏ) குவாரி குத்தகை வழங்குவதற்கு ஒப்புதல் அளித்து குவாரி குத்தகை ஒப்பந்தம் நிறைவேற்றுவது தொடர்பாக தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் பின்னிணைப்பு 1-ல் கண்டுள்ள படிவத்தில் ஒப்பந்த கருத்துகளில் சேர்க்கை, நீக்கம் மற்றும் மாற்றங்கள் செய்யப்பட்ட வரைவு ஒப்பந்தம் மற்றும் குத்தகை பரப்பைக் காட்டும் புலப்பட நகலும் மனுதாரரின் ஏற்புக்கு அனுப்பப்படும்.

(ஐ) மாவட்ட ஆட்சியரால் குறிப்பிடப்படும் காலக்கெடுவிற்குள் மனுதாரர் கீழ்கண்ட ஆவணங்கள் மற்றும் தொகைகளை செலுத்தி அவற்றை மாவட்ட ஆட்சியரிடம் ஒப்படைக்க வேண்டும்.

i) மொத்த குத்தகை தொகையில் 20 சதவீத தொகையை காப்புத் தொகையாக உரிய தலைப்பில் செலுத்தியமைக்கான சலான்.

ii) மாவட்ட ஆட்சியரின் அறிவிக்கையில் கோரியுள்ளவாறு நீதிமன்றம் சாரா முத்திரைத்தாள் ஒப்பந்த ஆவணம் தயாரிக்கும் பொருட்டு கொடுக்கப்பட வேண்டும்.

2. (அ) உரிய காலக்கெடுவுக்குள் முன் குறிப்பிடப்பட்ட காப்புத் தொகையை அரசுக்குச் செலுத்தி ஆவணங்களை மாவட்ட ஆட்சியரிடம் ஒப்படைக்காத நபருக்கு ஏற்கனவே குவாரி குத்தகை வழங்கப்படும் என்று ஏற்கனவே கொடுக்கப்பட்ட அறிவிப்பு ரத்து செய்யப்பட்டு அந்த நாள்வரை அவரால் செலுத்தப்பட்ட தொகைகள் மற்றும் ஆவணங்கள் அரசுடமையாக்கப்படும்.

(ஆ) மேற்கண்டவாறு குத்தகை அறிவிப்பினை ரத்து செய்யப்பட்டால், ரத்து ஆணை பெற்ற நபருக்கு அடுத்தபடியாக அதிகத் தொகை செலுத்த டெண்டர்/ஏலம் கூறிய நபருக்கு குத்தகை வழங்க முன்கண்ட நிபந்தனை I-ன்படி நடவடிக்கை தொடரப்படும்.

(இ) குத்தகை வழங்க அறிவிப்பு செய்யப்பட்ட இரண்டாவது நபரும் முழு குத்தகைத் தொகை, காப்புத் தொகை, முத்திரைத்தாள், பரப்புவரி ஆகியவற்றை மாவட்ட ஆட்சியரின் அறிவிக்கையைப் பெற்றுக் கொண்ட பத்து நாட்களுக்குள் செலுத்தவில்லையெனில் உரிய குவாரி மறு டெண்டர்/ஏலம் மூலம் குத்தகைக்கு விடப்பட நடவடிக்கை எடுக்கப்படும்.

3. (அ) கோரப்படும் ஆவணங்களை மற்றும் தொகைகளை குத்தகை பெறவுள்ள மனுதாரர் அரசுக்குச் செலுத்தியபின், அறிவிக்கை மூலம் தெரிவிக்கப்படும் நாளில் மேற்படி குத்தகைதாரர் மாவட்ட ஆட்சியரின் முன்பு ஆஜராகி குத்தகை ஒப்பந்த ஆவணங்களில் கையெழுத்திட்டபின் குத்தகையாளராக அறிவிக்கப்படுவார்.

(ஆ) குத்தகை ஒப்பந்தப்பத்திரம் மற்றும் குத்தகை புலப்படம் ஆகியவற்றை மேற்படி குத்தகையாளர் கையொப்பம் இட்ட பின்னர், அவைகளில் மாறுதல் செய்யவோ, அவற்றின் மீது மாற்றுக்கருத்து தெரிவிக்கவோ குத்தகைதாரர் அனுமதிக்கப்படமாட்டார்கள்.

4. (அ) குத்தகை காலம் ஏற்கனவே கல் உடைக்கப்பட்ட கல்குவாரிகளுக்கு ஐந்து ஆண்டுகள் மற்றும் கல் உடைக்கப்படாத கல்குவாரிகளுக்கு பத்து ஆண்டுகள் மட்டுமே. குத்தகை காலத்தின் ஆரம்பம் மற்றும் முடிவு தேதிகள் ஒப்பந்த ஆவணத்தில் தெளிவாக குறிப்பிடப்பட்டிருக்கும்.

(ஆ) ஒப்பந்த ஆவணத்தில் குறிப்பிட்டுள்ளபடி குத்தகை முடிவுறும் தேதிக்கு பின்னர் குத்தகை கால நீட்டிப்பு எந்த கோரிக்கையின் அடிப்படையிலும் செய்யப்படமாட்டாது.

(இ) குவாரி குத்தகையை புதுப்பிக்கக்கோரி மனு அளிக்கப்பட்டால் அது விசாரணையின்றி தள்ளுபடி செய்யப்படும்.

5. குவாரி குத்தகை ஒப்பந்தப் பத்திரத்தில் மாவட்ட ஆட்சியருடன் மனுதாரர் கையொப்பம் இடுவதற்கு முன் குத்தகை பரப்பில் உடைகல், ஜல்லி, கட்டக்கல் போன்ற கனிமங்கள் வெட்டியெடுத்தாரானால் அப்பணி குத்தகை பெறாமல் செய்ததாக கருதப்பட்டு விதிமுறைகளின்படி மேல்நடவடிக்கை தொடரப்படும்.

6. (அ) குவாரி குத்தகை காலம் முடிவடைந்தவுடன் குத்தகைதாரர் குத்தகை பரப்பை அரசுக்கு திரும்ப ஒப்படைத்து அதற்கான கடிதத்தை உரிய கிராம நிர்வாக அலுவலர் வசம் ஒப்புவித்து அதற்கான ஆணை உறுதி ஆவணம் தயாரித்து மாவட்ட ஆட்சியரிடம் ஒப்படைக்க வேண்டும்.



பகுதி – IV குவாரிப்பணி செய்வது தொடர்பான விதிமுறைகள்

1. (அ) குவாரிப்பணி செய்தவற்கான பொது விதிமுறைகள், மாவட்ட ஆட்சியருடன் குத்தகைதாரர் கையொப்பமிடும் குத்தகை ஆவணத்தில் குறிப்பிடப்பட்டிருக்கும்.

(ஆ) கல் குவாரி குத்தகைக்காலம் குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து அனுமதி காலமாக கருதப்படும்.

(இ) மேலும், 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் அனுபந்தம் 1ல் கண்ட நமுனாவில் உரிய முத்திரைத்தாளில் குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றி அதனை அவரது சொந்த செலவில் பதிவு செய்து கொடுக்க வேண்டும்.

(ஈ) செலுத்தப்பட்ட குத்தகை தொகை தவிர, தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் பின்னிணைப்பு II-ல் கண்டவாறு குவாரியிலிருந்து வெளியில் கொண்டு செல்லப்படும் கனிமத்திற்கு அரசால் அவ்வப்போது திருத்தி நிர்ணயிக்கப்படும் சீனியரேஜ் தொகை அல்லது ஒவ்வொரு ஆண்டிற்கான முடக்குவரி இவற்றில் எது அதிகமோ அது செலுத்தப்பட வேண்டும். அவ்வாறு செலுத்தப்படாவிட்டால் குவாரி குத்தகையை ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.

2. மேலும் ஒவ்வொரு தனி குத்தகை புலத்திற்கும், சிறப்பு நிபந்தனைகள் ஏதும் இருக்குமானால் அவைகள் மாவட்ட ஆட்சியரால் வழங்கப்படும் பணி அனுமதி ஆணையில் குறிப்பிடப்படும். குத்தகை பெற்றவர் அவ்வனுமதி ஆணையையும் ஏற்று நடக்க வேண்டும்.

3. மேற்குறிப்பிட்டவை தவிர பின்வரும் சிறப்பு நிபந்தனைகளும் குத்தகைதாரரால் குத்தகை காலத்தில் கடைபிடிக்கப்பட வேண்டும்.

i. குத்தகையாளர் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின்படி குவாரிப்பணி மேற்கொள்ள வேண்டும். தவறும் பட்சத்தில் தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி 41 (10) (ii)-ன்படி நடவடிக்கை மேற்கொள்ளப்படும்.

ii. அனுமதி பெற்ற வெடிபொருள் கையாலும் நபர்கள் மூலம் வெடிமருந்துகள் பயன்படுத்தவேண்டும். வெடிபொருட்கள் சட்டம் கண்டிப்பாக கடைப்பிடிக்கப்பட வேண்டும். குவாரியில் வெடி பொருட்கள் பயன்படுத்துவர் தொடர்பாக சென்னை மண்டல சுரங்க பாதுகாப்பு இயக்கக பொது இயக்குநர் அவர்களின் வழிகாட்டு நெறிமுறைகளை பின்பற்றி குறைந்த அழுத்தமுள்ள வெடிமருந்துகளை பயன்படுத்தி குவாரிப்பணி செய்ய வேண்டும்.

iii. குத்தகையாளர் குத்தகைப் பகுதியில் வெட்டியெடுத்து வெளியில் அனுப்பும் சிறுவகைக் கனிமத்திற்கு உரிய கணக்குகளை புதுக்கோட்டை மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநர் குறிப்பிடும் படிவத்தில் சுரங்க விபரப்பதிவேடு ஏற்படுத்தி விபரங்கள் எழுதி பிரதி மாதம் 5-ம் தேதிக்குள் தணிக்கைக்கு சமர்ப்பிக்க வேண்டும்.

iv. குத்தகை காலத்தில் ஏற்படுத்தப்பட்ட சுரங்க விபரப் பதிவேடுகளை குத்தகையாளர் குத்தகைக்காலம் முடிந்த பின்னரும் பாதுகாத்து அரசு அலுவலர்கள் ஆய்வுக்கு கேட்கும் போது ஒப்படைக்க வேண்டும்.

v. குத்தகையாளர் கனிமங்களை வெளியில் அனுப்ப அனுப்புகை சீட்டுகளில் (பில்புக்) உதவி இயக்குநர் ஒப்புதல் பெற வரும்போது, சீனியரேஜ் தொகையை செலுத்தி, அலுவலகத்திலிருந்து வழங்கப்படும் இசைவாணைச்சீட்டு மற்றும் அனுப்புகை சீட்டுகளில் உரிய அலுவலரின் மேலொப்பம் பெற்றுச் சென்று பயன்படுத்த வேண்டும்.

vi. கனிமங்களை குத்தகைப் பகுதியிலிருந்து வெளியில் அனுப்பும் போது அனுப்பப்படும் கனிமத்தின் வகை, அதன் அளவு, கனிமம் எடுத்துச் செல்லும் வாகனத்தின் வகை மற்றும் பதிவு எண், கனிமம் கொண்டு சேர்க்கப்படும் இடம், குவாரியிலிருந்து வாகனம் புறப்படும் நேரம் மற்றும் சென்றடைய உத்தேச நேரம் ஆகிய விபரங்களை அசல் சீட்டில் ஒரே போனாவாலும் நகலை கார்பன் பேப்பர் அழுத்தம் மூலமும் எழுதி அசலை வாகனத்துடன் அனுப்பி நகலை (அடிக்கட்டு) அடுத்தமுறை அனுமதிபெற வரும்போது ஆய்வுக்கு காண்பித்துவிட்டு திரும்ப பெற்றுச் சென்று பாதுகாப்பாக வைத்திருக்க வேண்டும்.

vii. அனுப்புச் சீட்டில் எல்லா விபர வினாக்களுக்கும் விபரங்கள் எழுதப்படாமலோ அல்லது திருத்தப்பட்டோ அல்லது மேல் எழுத்தப்பட்டோ அல்லது வெவ்வேறு மையினால் எழுதப்பட்டிருப்பின் அந்த அனுப்புகைச் சீட்டுடன் எடுத்துச் செல்லப்படும் கனிமம், அனுமதியின்றி எடுத்துச் செல்லப்படுவதாக கருதி, விதிமுறைகளின்படி நடவடிக்கை எடுக்கப்படும்.

viii. குத்தகை பகுதிக்குச் சென்றுவர பாதைவசதி குத்தகைதாரர், தனது சொந்த பொறுப்பில் ஏற்படுத்திக் கொள்ள வேண்டும். கல்குவாரிப்பணியில் குழந்தை தொழிலாளர்களை பயன்படுத்தக்கூடாது.

ix. குவாரிகளுக்கு அருகில் உள்ள போக்குவரத்துச் சாலைகள், குடியிருப்பு வீடுகள், வண்டிப்பாதைகள், மின் கம்பங்கள், டிரான்ஸ்பார்மர்கள் மற்றும் இதர நிலையான அமைப்புகள் இவற்றிலிருந்து நிர்ணயிக்கப்பட்ட பாதுகாப்பு இடைவெளிவிட்டு மீதமுள்ள இடத்திற்குள்தான் குவாரி செய்யும் பணி செய்யப்பட வேண்டும். மேற்கண்ட அமைப்புகளுக்கு சேதம் ஏதும் நேரிட்டால் அதற்கு குத்தகைதாரரே முழுப் பொறுப்பேற்க வேண்டும். இந்நேர்வில் பாதுகாக்கப்பட்ட புராதனச்சின்னங்களிலிருந்து 300 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.

x. குத்தகைதாரரை மேற்குறிப்பிட்ட நிபந்தனைகளும் 1959-ஆம் ஆண்டைய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் மற்றும் சுரங்கங்கள் மற்றும் கனிமங்கள் (அபிவிருத்தி மற்றும் ஒழுங்குமுறை) சட்டம், 1957 மற்றும் அரசால் அவ்வப்போது கொண்டு வரப்படும் ஆணைகளும், விதிகளும் கட்டுப்படுத்தும்.

xi. கல்குவாரிகளிலிருந்து சாதாரண கல், சக்கைக்கல், கட்டுக்கல், ஜல்விக்கற்கள், கலுக்கால் ஆகிய பொது உபயோக சிறு கனிமங்களை மட்டுமே குவாரி செய்ய வேண்டும். இவ்வனுமதியை பயன்படுத்தி வெளிநாட்டிற்கு ஏற்றுமதி செய்வதற்கும், அலங்கார வகை மற்றும் மெருகேற்றம் செய்வதற்கும் பயன்படும் வகையில் பெரிய/சிறிய கிராணைட் கற்துண்டங்களை வெட்டி எடுக்கக்கூடாது.

xii. குத்தகை விடப்படும் குவாரிகளை நீக்கவோ, புதிதாக சேர்க்கவோ, குவாரிப் பரப்பளவை மாற்றவோ, மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. நிர்வாக சூழல் காரணமாக ஏலத்தை ரத்து செய்ய மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

xiii. குத்தகை உரிமம் கோரும் முன் சம்பந்தப்பட்ட குவாரியினை நேரில் பார்வையிட்டு பாதை வசதி, கனிமத்தின் தரம், கனிமத்தின் இருப்பு ஆகியவற்றை ஆராய்ந்து பின்னர் குத்தகை உரிமம்கோரி விண்ணப்பிக்க வேண்டும். பின்னாளில் இது தொடர்பான எந்த ஒரு பின் நிகழ்வுக்கும் மாவட்ட நிர்வாகம்/அரசு பொறுப்பல்ல.

xiv. 1959-ஆம் ஆண்டு தமிழ்நாடு சிறு கனிம சலுகை விதிகள் அட்டவணை படிவம் 1-ல் கண்ட ஒப்பந்தப் பத்திரத்தில் தேவையான அளவுக்கு நிபந்தனைகளை புதியதாக சேர்க்கவோ, நீக்கவோ, மாற்றியமைக்கவோ மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகைப் பத்திரம் ஏற்படுத்திய பின்பு புலஎண் மற்றும் குவாரி செய்ய ஒதுக்கப்பட்ட பரப்பு குறித்து எவ்வித தாவாவும் செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.

xv. விண்ணப்பதாரர் குத்தகை தொகையைச் செலுத்தாமலும், செலுத்தியிருப்பின் முத்திரைத்தாளில் ஒப்பந்தப் பத்திரம் மாவட்ட ஆட்சியரிடம் நிறைவேற்றி சார்-பதிவாளர் அலுவலகத்தில் பதிவு செய்து தராமலும் குவாரிப் பணியை ஆரம்பிக்கக்கூடாது. அவ்வாறு செய்தால் கள்ளத்தனமாக குவாரி செய்ததாகக் கருதப்பட்டு 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளின்படி நடவடிக்கை மேற்கொள்ளப்படும்.

xvi. ஒரு மனுதாரருக்கு மாநிலத்தில் இரு குவாரி குத்தகைக்கு மேல் குத்தகை வழங்கப்பட மாட்டாது.

xvii. மேற்படி சிறு கனிமங்கள் எடுக்கும் இடத்தில் சிறு கனிமங்கள் எடுப்பதிலாவது அப்புறப்படுத்துவதிலாவது மேற்படி குத்தகைதாரருக்கு ஏற்படக்கூடிய யாதொரு நஷ்டங்களுக்கான சலுகை எதுவும் அரசினரால் அளிக்கப்பட மாட்டாது.

xviii. டெண்டர் அறிவிக்கை பிரசுரிக்கப்பட்ட பின்னரோ அல்லது குத்தகை உறுதி ஆணை பிறப்பிப்பதற்கு முன்னரோ நிபந்தனைகளை மாற்றவோ அல்லது ரத்துச் செய்யவோ மற்றும் பட்டியலில் கண்டுள்ள எல்லா குவாரிகளுக்கும் குத்தகை உரிமம் கோரும் டெண்டர் மனுக்களை எக்காரணத்தையும் காட்டாமல் இரத்து செய்யவோ அல்லது மூடி முத்திரையிட்ட உறைகளை திறக்கும் நாள், நேரம் ஆகியவைகளைத் தள்ளி வைக்கவோ, நிறுத்தி வைக்கவோ மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

xix. டெண்டர் விளம்பரத்தின்படி ஏதாவது காரணத்தால் மூடி முத்திரையிடப்பட்ட உறைகள் திறக்கும் நாள் மற்றும் நேரம் ஆகியவை ஒத்தி வைக்க நேர்ந்தால் அதற்கு மனுதாரர்கள் நஷ்ட ஈடு கேட்க உரிமையில்லை. மனுதாரர் ஒவ்வொரு குவாரிக்கும் தனித் தனியே ஒரு ஒப்பந்தப்புள்ளி மனுவை உரிய இணைப்புகளோடு அனுப்ப வேண்டும். ஒரே மனுவில் ஒரு குவாரிக்கு மேல் பல குவாரிகளைக் குறிப்பிட்டு மனு செய்தால் அம்மனு நிராகரிக்கப்படும்.

xx. 1959-ஆம் ஆண்டு தமிழ்நாடு சிறு கனிம சலுகை விதிகளில் கண்டுள்ள அனைத்து சாரம்சங்களையும் மாவட்ட அரசிதழில் கண்டுள்ள அனைத்து நிபந்தனைகளையும் நன்கு தெரிந்து கொண்டபின் டெண்டர் மனுக்களை அனுப்ப வேண்டும். மனு அனுப்பிய பிறகு விதிகள் மற்றும் குத்தகை நிபந்தனைகள் பற்றி சரியாகத் தெரியாது என மனுதாரர் வாதிட்டால் அது ஏற்றுக் கொள்ளப்படமாட்டாது.

xxi. உறுதி செய்யப்பட்ட குத்தகை உரிமத்தை சம்பந்தப்பட்ட உயர் அலுவலர்கள் பொது நன்மையைக் கருதி ரத்துச் செய்ய நேரிட்டால் அதனால் ஏற்படும் இழப்புக்கு ஈடுகோர குத்தகைதாரருக்கு உரிமையில்லை.

xxii. குத்தகைதாரர் குவாரியை வேறு யாருக்கும் மாற்றவோ, உள்குத்தகைக்கு விடவோ கூடாது. அப்படி ஏதாவது செய்திருப்பது தெரியவந்தால் மேற்படி குத்தகை ரத்து செய்யப்படுவதுடன் அவர் செலுத்திய தொகையும் அரசுக்கு ஆதாயமாக்கப்படும்.

xxiii. குத்தகைக்கு விடப்பட்ட புலத்தில் புல வரைபடத்தில் வரையறை செய்யப்பட்டுள்ள இடத்திலும், விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்குக் கூடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் குத்தகை ரத்துச் செய்யப்படும்.

xxiv. அனுமதிக்கப்படாத பிற இடங்களில் முறைகேடாக குத்தகைதாரர் குவாரி செய்து அதனால் அவர் மீது வழக்கு தொடரப்பட்டாலோ, அல்லது அரசுக்கு நஷ்டம் ஏற்பட்டாலோ, வழக்கிற்கான செலவுத் தொகை அல்லது நஷ்டஈடு முழுவதும் குத்தகைதாரரிடமிருந்து வசூல் செய்யப்படும்.

xxv. குத்தகைதாரர் உரிய அனுப்புகைச் சீட்டை குத்தகைக்கு வழங்கப்பட்ட குவாரியில் இருந்துதான் வாகனங்களுக்கு கொடுத்தனுப்ப வேண்டும்.

xxvi. உரிய அதிகாரிகள் ஒப்புதல் பெறப்படாத அனுப்புகைச்சீட்டுடன் கொண்டு செல்லப்படும் சிறு கனிமங்கள் முறையற்ற வகையில் எடுத்ததாகக் கருதப்பட்டு உரிய சட்டத்தின்படி கைப்பற்றப்பட்டு அபராதம் விதிக்கப்படும்.

xxvii. புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்கள் அல்லது வருவாய்த்துறை அலுவலர்கள் முதலானோர் தணிக்கை செய்யும் போது உரிய கணக்குகள் மற்றும் அனுப்புகைச் சீட்டு முதலானவைகளை குவாரி உரிமம் பெற்றவர்கள் அவர்களுக்கு காண்பிக்க வேண்டும்.

xxviii. அனுப்புகைச் சீட்டில் உள்ள காலங்கள் பூர்த்தி செய்யப்படாமலோ அல்லது தவறாக எழுதப்பட்டோ அல்லது திருத்தங்களிடனோ வாகனங்களுக்கு கொடுக்கப்பட்டிருந்தால் குத்தகைதாரர் மற்றும் சிறு கனிமம் கொண்டு செல்லும் வாகன உரிமையாளர் ஆகியவர்களுக்கு அபராதம் விதிக்கப்பட்டு வசூல் செய்யப்படும்.

xxix. ஏலதாரர் ஒவ்வொரு நாளும் குவாரியில் எவ்வளவு சிறு கனிமங்கள் எடுக்கப்பட்டது என்பதையும், எந்த அளவு கனிமங்கள் லாரி/வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விவரத்தையும் காட்டும் பதிவேடு பராமரித்து வர வேண்டும்.

xxx. குவாரி செய்வதற்கு அனுமதிக்கப்பட்டுள்ள இடத்தில் மட்டும்தான் குவாரி செய்ய உரிமையுண்டு.

xxxi. அரசு மற்றும் மாவட்ட ஆட்சியரால் இது விஷயமாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அவ்வப்போது ஏற்படுத்தப்படும் சட்ட திட்டங்களுக்கும், நிபந்தனைகளுக்கும் குத்தகைதாரர் கட்டுப்பட்டு நடக்க வேண்டும்.

xxxii. குவாரியில் வேட்டு வைப்பதிலும், கட்டைப்போட்டு சுடுவதிலும் யாதொரு அபாயமும் நேரிடாமல் இருக்க வேண்டியதைப் பற்றி குத்தகைதாரர் உஷாராக இருக்க வேண்டியது. அப்படி வேட்டு வைப்பதிலோ அல்லது கட்டைப் போட்டு சுடுவதிலோ அரசு சொத்துக்களுக்காவது அல்லது பிறர் சொத்துக்களுக்காவது அல்லது வேறு எந்த நபருக்காவது அபாயம் அல்லது சேதம் நேர்ந்தால் குத்தகைதாரர் அவ்விதம் நேரக்கூடிய சேதங்களை தங்கள் செலவிலேயே நிவர்த்தி செய்து கொடுக்க வேண்டியதோடு, அந்த நபருக்கு நஷ்ட ஈடு கொடுக்க குத்தகைதாரர் கடமைப்பட்டவர் ஆவார்.

xxxiii. குவாரியில் வேலை செய்யும் தொழிலாளர்களுக்கும் மற்றும் இதர நபர்களுக்கும் விபத்து ஏற்பட்டால் அதற்கு அரசு பொறுப்பல்ல. முழுப்பொறுப்பும் குத்தகைதாரரைச் சேரும்.

xxxiv. குத்தகை பகுதிக்குச் சென்றுவர பாதைவசதி குத்தகைதாரர், தனது சொந்த பொறுப்பில் ஏற்படுத்திக் கொள்ள வேண்டும்.

xxxv. அருகில் அமைந்துள்ள விவசாய நிலங்களுக்கு எவ்வித பாதிப்பும் இல்லாத வகையில் குவாரிப்பணி மேற்கொள்ள வேண்டும்.

xxxvi. தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரிய இசைவாணையை குவாரிப்பணி தொடங்கும் முன் பெற்று சமர்ப்பிக்க வேண்டும்.

xxxvii. குத்தகை எடுத்தவர் குத்தகையை அனுபவிக்காவிட்டாலும், செலுத்தப்பட்ட குத்தகைத் தொகை எக்காரணத்தை முன்னிட்டும் வாபஸ் செய்யப்படமாட்டாது.

xxxviii. குவாரியில் எல்லைகள் பற்றிய பிரச்னைகள் ஏற்பட்டால் மாவட்ட ஆட்சியரின் தீர்ப்பே இறுதியானது.

xxxix. குத்தகைக்காலம் முடிந்தபின் குத்தகைதாரர்கள் குத்தகைக்கு விடப்பட்ட பகுதிகளில் எந்தவிதமான உரிமையும் கொண்டாடக்கூடாது.

xl. குவாரி குத்தகை வழங்குவது, மற்றும் சம்பந்தப்பட்ட எவ்வித நடவடிக்கைகளும் மாவட்ட ஆட்சியர் அவர்களின் முடிவுக்கு கட்டுப்பட்டதாகும்.

xli. டெண்டரில் கோரப்படும் கல்குவாரிகளின் பேரில் நீதிமன்றத்தில் ஆணை/தடையாணை பெறப்பட்டால் சம்பந்தப்பட்ட குவாரிக்கு குத்தகை உரிமம் வழங்குவது குறித்து மாவட்ட ஆட்சியரின் முடிவே இறுதியாகும்.

xlii. குத்தகைக்கு எடுத்தவர் எந்த காரணத்தை முன்னிட்டும் தனக்கு இழப்பு ஏற்பட்டதாக தெரிவித்து நஷ்டஈடு கேட்கக் கூடாது.

xliii. குத்தகைதாரர் குவாரியில் புல எண், பரப்பு, குத்தகைதாரர் பெயர், குத்தகை ஆணை எண், குத்தகை தொகை போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து பராமரிக்க வேண்டும்.

xliv. குத்தகைதாரர் குவாரியில் எல்லைகளை தெளிவாக தெரியும்படியாக கல் ஊன்றி அடையாளமிட்டு வைத்த பின் குவாரி செய்ய வேண்டும். எல்லைக்கற்களை குத்தகைக் காலம் முழுமைக்கும் நன்கு பராமரிக்க வேண்டும்.

xlv. குத்தகைக்கு வழங்கப்பட்ட குவாரிகளிலிருந்து அரசு வேலைகளுக்கு கனிமங்கள் வெட்டி எடுத்துச் செல்ல அரசுக்கு சகல உரிமையும் உண்டு.

xlvi. **(அ) சிறப்பு நிபந்தனைகள்:**

i. இந்த டெண்டர் மற்றும் ஏலமுறையில் கலந்து கொள்ளும் விண்ணப்பதாரர்கள் அனைவரும் இந்திய அரசின் வருமான வரித்துறையினரால் வழங்கப்படும் நிரந்தர கணக்கு எண். (PAN CARD) அட்டையை பெற்றிருக்க வேண்டும்.

ii. மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 2 சதவீத வருமான வரி தொகை செலுத்த வேண்டும்.

iii. மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது பங்களிப்பு தொகையான அதவாது 10 சதவீத தொகையை புதுக்கோட்டை மாவட்ட கனிம அறக்கட்டளையின் வங்கி கணக்கில் செலுத்த வேண்டும்.

iv. மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 10 சதவீத தொகையை பசுமை நிதி (Green Fund) செலுத்த வேண்டும்.

கல் குவாரி விவரம்

வ. எண்	வட்டம்	கிராமம்	புல எண்	பரப்பு (ஹெக்)	பழைய/புதிய குவாரி
1	குளத்தூர்	மேலூர்	207/8	0.90.00	பழையகுவாரி
2	குளத்தூர்	மேலூர்	207/4	0.97.00	புதிய குவாரி
3	குளத்தூர்	மேலூர்	211(பகுதி-1)	1.56.00	பழையகுவாரி
4	குளத்தூர்	மேலூர்	211 (பகுதி-2)	1.50.00	பழையகுவாரி
5	குளத்தூர்	மேலூர்	211 (பகுதி-3)	2.10.00	பழையகுவாரி
6	குளத்தூர்	மேலூர்	216/1	1.47.50	பழையகுவாரி
7	குளத்தூர்	சத்தியமங்கலம்	47/4 பகுதி	2.00.00	பழையகுவாரி
8	குளத்தூர்	இரும்பாளி	98/1, 98/2	0.78.00	பழையகுவாரி
9	குளத்தூர்	நார்த்தாமலை	94(பகுதி-1)	1.67.0	புதிய குவாரி
10	குளத்தூர்	நார்த்தாமலை	94(பகுதி-2)	1.50.0	புதிய குவாரி
11	குளத்தூர்	நார்த்தாமலை	94(பகுதி-3)	1.32.5	புதிய குவாரி
12	இலுப்பூர்	ஆரியூர்	17/2 & 17/4	0.76.50	புதிய குவாரி
13	இலுப்பூர்	மதியநல்லூர்	247(பகுதி)	1.00.00	பழையகுவாரி
14	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-1)	2.80.33	பழையகுவாரி
15	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-2)	2.28.30	பழையகுவாரி
16	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-3)	3.48.00	பழையகுவாரி
17	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-4)	3.18.37	பழையகுவாரி
18	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-A)	1.50.00	புதிய குவாரி
19	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-B)	1.00.00	புதிய குவாரி
20	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-C)	1.00.00	புதிய குவாரி
21	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-D)	1.00.00	புதிய குவாரி
22	பொன்னமராவதி	சாத்தனூர்	37/1 (பகுதி)	1.15.00	பழையகுவாரி
23	குளத்தூர்	பள்ளத்துப்பட்டி	6	1.20.00	பழையகுவாரி
24	விராலிமலை	விட்டமாப்பட்டி	81	0.77.50	பழையகுவாரி

ஐ.சா. மெர்சி ரம்யா,
மாவட்ட ஆட்சியர்,
புதுக்கோட்டை.

இடம் : புதுக்கோட்டை
நாள் : 18.10.2023

(லேசர் அச்சடிப்புகள் மாவட்ட ஆட்சியர், புதுக்கோட்டை மாவட்டம்)
தமிழ்நாடு அரசு எழுதுபொருள் மற்றும் அச்சுத் துறை இயக்குநரால், புதுக்கோட்டை அரசு கிளை அச்சகத்தில் அச்சிடப்பட்டு மாவட்ட ஆட்சியரால் வெளியிடப்பட்டது.



இணைப்பு VI

(தமிழ்நாடு சிறுவகைக் கனிமச் சலுகை விதிகள் 1959-ன் விதி 8-ஐக் காண்க)

குவாரி குத்தகை கோரும் டெண்டர்/ஏல விண்ணப்பம்

(அசல் மற்றும் இரண்டு நகல்களில் இணைப்புகளுடன் கொடுக்க).

அனுப்புநர்

அலுவலர் பயன்படுத்த

(அ) மனு பெறப்படும் நாள்

.....

(ஆ) பெறப்படும் இடம்

பெறுநர் ஒப்பம்

மாவட்ட ஆட்சியர்,
புதுக்கோட்டை மாவட்டம்,
புதுக்கோட்டை.

அய்யா,

மாவட்ட அரசிதழ் எண்.....நாள். .....அல்லது..... செய்தித்தாள் விளம்பர நாள்.....ல் வெளியிடப்பட்டுள்ளது தொடர்பாக, தமிழ்நாடு சிறுவகைக் கனிம சலுகை விதிகள் 1959 இன் விதி 8-ன் படி நான்/நாங்கள் இந்த விண்ணப்பத்தை சமர்ப்பிக்கிறேன்/சமர்ப்பிக்கிறோம்.

தேவையான விவரங்கள் கீழே கொடுக்கப்படுகிறது :

1. மனுதாரர் பெயர் மற்றும் முழு முகவரி :

2. (அ) மனுதாரர் தனி நபரா/தனியார் கம்பெனியா/ கூட்டு நிறுவனமா (அல்லது) கூட்டமைப்பா. :

   (ஆ) மனுதாரர் தனி நபரானால் எந்த நாட்டினர் :

   (இ) மனுதாரர் தனியார் கம்பெனி/வியாபார ஸ்தாபனம் அல்லது சங்கமாயின் அதன் இயக்குநர்/பங்குதாரர்கள்/உறுப்பினர்கள் எந்த நாட்டவர் என்ற விபரம் (சான்று இணைக்கப்படவேண்டும்) :

3. பிணை வைப்புத்தொகை செலுத்திய விவரம் (வங்கி கேட்பு வரைவோலை எண் மற்றும் நாள் ஆகிய விவரங்களை அளிக்கவும்). :

4. விண்ணப்பதாரர் கீழ்கண்ட விவரங்கள் அடங்கிய ஆணை உறுதி ஆவணம் அளித்துள்ளாரா? :

அ) நடப்பு தேதி வரையிலான வருமானவரி விவரப்பட்டியல் சமர்ப்பிக்கப்பட்டுள்ளதா? :

ஆ) மனுதாரருக்கு விதிக்கப்பட்ட வருமான வரி தொகையை செலுத்தியுள்ளாரா? மற்றும் :

இ) வருமான வரி சட்டம் 1961-ல் குறிப்பிட்டவாறு சுய மதிப்பீட்டின் அடிப்படையில் வருமான வரி செலுத்தியுள்ளாரா? :

5. மனுதாரர் எந்த சிறுவகைக் கனிமத்தைக் குவாரி செய்ய விரும்புகிறார் என்ற விபரம். :

6. கோரப்படும் குத்தகையின் கால அளவு :

7. குத்தகைக்கு கோரப்படும் இடத்தின் மொத்த பரப்பு :

8. டெண்டர் மனு அளித்துள்ள புலத்தின் விவரங்கள் :

மாவட்டம்	வட்டம்	கிராமம்	புல எண்	பரப்பு (ஹெக்டேரில்)
(1)	(2)	(3)	(4)	(5)

9. குவாரி குத்தகை பெற விரும்பும் மனுதாரர் அளிக்க விரும்பும் அதிகபட்ச டெண்டர் தொகை (எண்ணாலும், எழுத்தாலும் குறிப்பிடவும்) :

10. மனுதாரர் தமிழ்நாட்டில் ஏற்கனவே குவாரி அனுமதி பெற்றுள்ள இடங்கள் குறித்த விவரங்கள் :

11. அ) குவாரி நிலுவைத்தொகை செலுத்தியது தொடர்பாக சுரங்கவரி நிலுவையின்மை சான்று (தேவையெனில் இணைக்க). :

(ஆ) விண்ணப்பம் அளிக்கும் நாளில் விண்ணப்பதாரர் குவாரி குத்தகை அல்லது சுரங்க குத்தகை பெற்றிராவிட்டால் அது குறித்து ஆணை உறுதி ஆவணம் இணைக்கவும். :

12. விண்ணப்பதாரர் வேறு ஏதேனும் விவரம் : அளிக்க விரும்பினால் அது குறித்த விவரம்

நான் / நாங்கள் மேலே எங்களால் அளிக்கப்பட்ட விவரங்கள் உண்மையானவை என்று உறுதியளிக்கிறேன்/உறுதியளிக்கிறோம். நான்/நாங்கள், அரசாங்கம் அல்லது மாவட்ட ஆட்சியர் அவர்களால் கோரப்படும் இதர விவரங்கள் மற்றும் காப்புத்தொகை ஆகியவற்றை அளிக்க தயாராக உள்ளேன்/உள்ளோம். தமிழ்நாடு சிறுவகைக் கனிமச் சலுவை விதிகள் 1959-ல் கண்டவாறு குவாரி குத்தகை பெறுவது தொடர்பாகவும், குவாரிப்பணி செய்வது தொடர்பாகவும் மாவட்ட அரசிதழ் வெளியீட்டில் தெரிவிக்கப்பட்டுள்ள நிபந்தனை, சட்ட உடன்படிக்கை குறித்து நன்றாக அறிவேன்/அறிவோம் என உறுதி அளிக்கிறேன்/அளிக்கிறோம்.

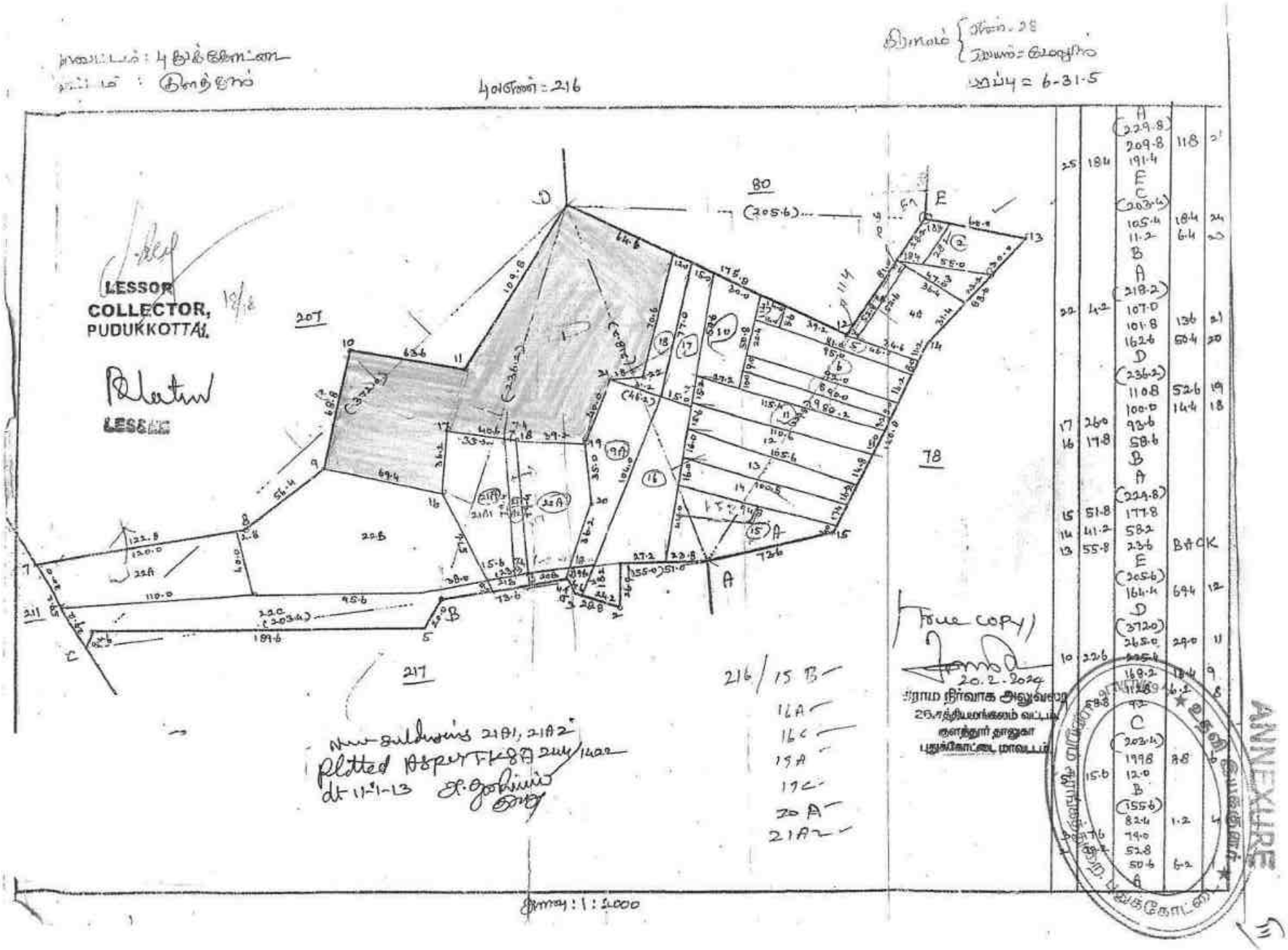
2) சாதாரண கற்கள் வெட்ட வழங்கப்பட்ட கற்குவாரியில் அறுத்து மெருகேற்றி கட்டுமானப்பணிக்கு பயன்படும் கிரானைட் கற்துண்டங்கள் வெட்டமாட்டோம் எனவும் அவ்வாறு கிரானைட் கிடைக்குமானால் குத்தகையை மாவட்ட ஆட்சியர் ரத்து செய்ய நான் / நாங்கள் ஒப்புக்கொள்கிறேன் / ஒப்புக்கொள்கிறோம் என உறுதியளிக்கிறேன்.

தங்கள் உண்மையுள்ள,

இடம் :

நாள் :

மனுதாரர் கையொப்பம்



Lease Applied Area-

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ANNEXURE 12



1438 ஆம் பசலியில் புதுக் கோட்டை மாவட்டம் குளத்தூர் வட்டம் மேலநீர் கிராமக் கணக்கு

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாரருடைய பெயரும் என்னும் அல்லது அனுபோக தாருடைய பெயர்.	வரும்படி பயனின் பெயர்.	முதல் போகம்.					
நில அளவை எண்.	உட்பிரிவு எண்.	பரப்பு.	தீர்வை.	ஒரு போகம் அல்லது இரு போகம்.		நிலத்தின் எந்த பகுதி யாவது காருபயனாரால் பயிடப்பட்டுள்ளதா.	எந்த பாகத்தில் பயிர் செய்யப்பட்டது அல்லது தரிசாக வைக்கப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடை செய்த பரப்பு	உண்மையான பயன் ஆதாயம்.	விவசாயிகள் ஆலை விடுக்காடு.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
216	1	1475	00	00	அரசு புறம்போக்கு				பாறை		
							/ உண்மை சரிதான்				/

20.2.2024

குளத்தூர் தாலுகா
புதுக்கோட்டை மாவட்டம்.

380/18-RF III-A-10-20,00,000- Cps.-GBP.-MDU.-7-2019.

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று காருபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.					கிராம அதிகாரியின் குறிப்புரை :- (1) புலன்களின் பகுதிகளில் வரி விதிப்பில் விலக்குகள் அளவில். (2) கைப்பற்றில் நிலைக்களின் காருபடியும் (3) பரிகாரப் பாதத்தில் பயிரிடப்பட்டதை உதவியின்றி பயிரிடப்பட்டதை என்று குறிப்பிடவேண்டிய வருக்கு பிரதேச பாகங்களில் நீர் பாய்ச்சப்பட்ட விவரங்கள்.	இருக்கவேண்டிய வகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்.	வரும்படி பயனின் அனுபவம்
எந்த பாகத்தில் பயிர் செய்யப்பட்டது அல்லது மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு	உண்மையான பாய்ச்சல் ஆதாயம்.	விவசாயிகள் ஆலை விடுக்காடு.	(16)	(18அ)	(19)
(13)	(14)	(15)	(16)	(17)			

(அ) வகம், (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலம், (ஈ) பயிரிட தகுந்த தரிசு (உ) நிலையான புல் தரைகளும் மற்றும் இதர மேய்ச்சல் நிலங்களும், (ஊ) விதைக்கப்பட்ட நிகர பரப்பில் சேர்க்கப்படாத பரவைகள் பயிர்களும் தோப்புகளும், (எ) நடப்புத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்.

ANNEXURE 1

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216	1	216-1		அரசு	புறமபோக்கு	AW		0-0	0	0	00	1	47.50	0	00			தரிசை ஏறபடாத தரிசு
216	2	216-2		ரயத்துவாரி	புஞ்சை			7-5	7	1	53	0	16.00	0	24	1309	முத்துக்கருப்பன்	

True copy

20.2.2024

26.சத்தியமங்கலம் பட்டம்,
குளத்தூர் தாலுகா
புதுக்கோட்டை மாவட்டம்.

ANNEXURE 5

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3/25/2017

ANNEXURE



இந்திய அரசாங்கம்
Government of India

ஜாஃபர்அலி
Jafferali
தந்தை பெயர் முகமது
Father: RAJA MOHAMED

பிறந்த நாள்/DOB: 26/05/1981
ஆண்/ Male

5259 2947 6161

ஆதார் - சாதாரண மனிதனின் அதிகாரம்



Unique Identification Authority of India

தொகுதி 30 காதர்முகைதீன்
தலைமை அஞ்சலகம் கம்பெனி
புதுக்கோட்டை தாலுகா புதுக்கோட்டை
புதுக்கோட்டை புதுக்கோட்டை
தமிழ்நாடு, 622001

Address: S/O
Rajamohamed, TS NO 9884,
KALIFNAGAR 4TH STRRET,
PUDUKKOTTAI TALUKA,
Pudukkottai, Pudukkottai,
Tamil Nadu, 622001

5259 2947 6161

1947
1800 300 1947

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आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA

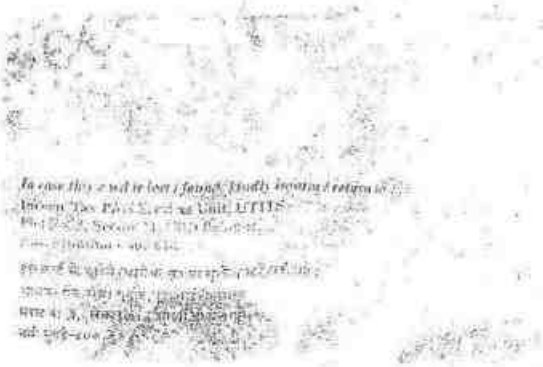
R JAFFER ALI
MOHAMED IBRAHIM RAJA MOHAMED

25/05/1981
Permanent Account Number
AMLPJ6635P





Signature



ANNEXURE

அண்ணாமலைப் பல்கலைக்கழகம்
ANNAMALAI UNIVERSITY



Reg. No. : 090895

அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2011 இல் பயன்பாட்டு நிலத்தியல் பிரிவில் நடத்திய தேர்வுகளில் வெங்கடகிரி பா கூடுதல் மதிப்புப்புள்ளிகள் 10.00 க்கு சராசரியாக 6.03 பெற்று இரண்டாம் வகுப்பில் தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி, **அறிவியல் நிறைஞர்** பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார் என அண்ணாமலைப் பல்கலைக்கழக ஆளவை இதன்வழி அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that **VENGATAGIRI B** has been admitted to the Degree of **MASTER OF SCIENCE** in **APPLIED GEOLOGY**, he/she having secured **OGPA** of **6.03** out of **10.00** been certified by duly appointed Examiners at the Examination held in **MAY,2011** to be qualified to receive the same, and that he/she was placed in **SECOND CLASS.**

பல்கலைக்கழக முத்திரை பெறுகின்றது
Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

Dr.M.Rathinasabapathi

Dr.S.Ramanathan

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ANNEXURE 5

GOVERNMENT OF INDIA
MINISTRY OF LABOUR AND EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY

Certificate of Practical Experience granted by the Manager to a Candidate for a Manager's/ Surveyor's/ Mining foreman/ Mining Mate/ Blasters certificate of competency examination under Metalliferous Mines Regulation, 1961.

I, M.S.Pavel being the Manager of K.Pitchampatti Multicolour Granite Mine belong to M/s. Anupkumar Lohia do hereby certify that **Thiru. B.Vengadagiri** son of **Thiu. Balasubramanian** (whose signature is appended) worked in the above mine from 10.07.2012 to 15.08.2018 and is still working. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper candidate to be examined for certificate of competency.

M.S. 15.8

(Signature with date and official seal)

(Mines Manager's class)

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

(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite

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.

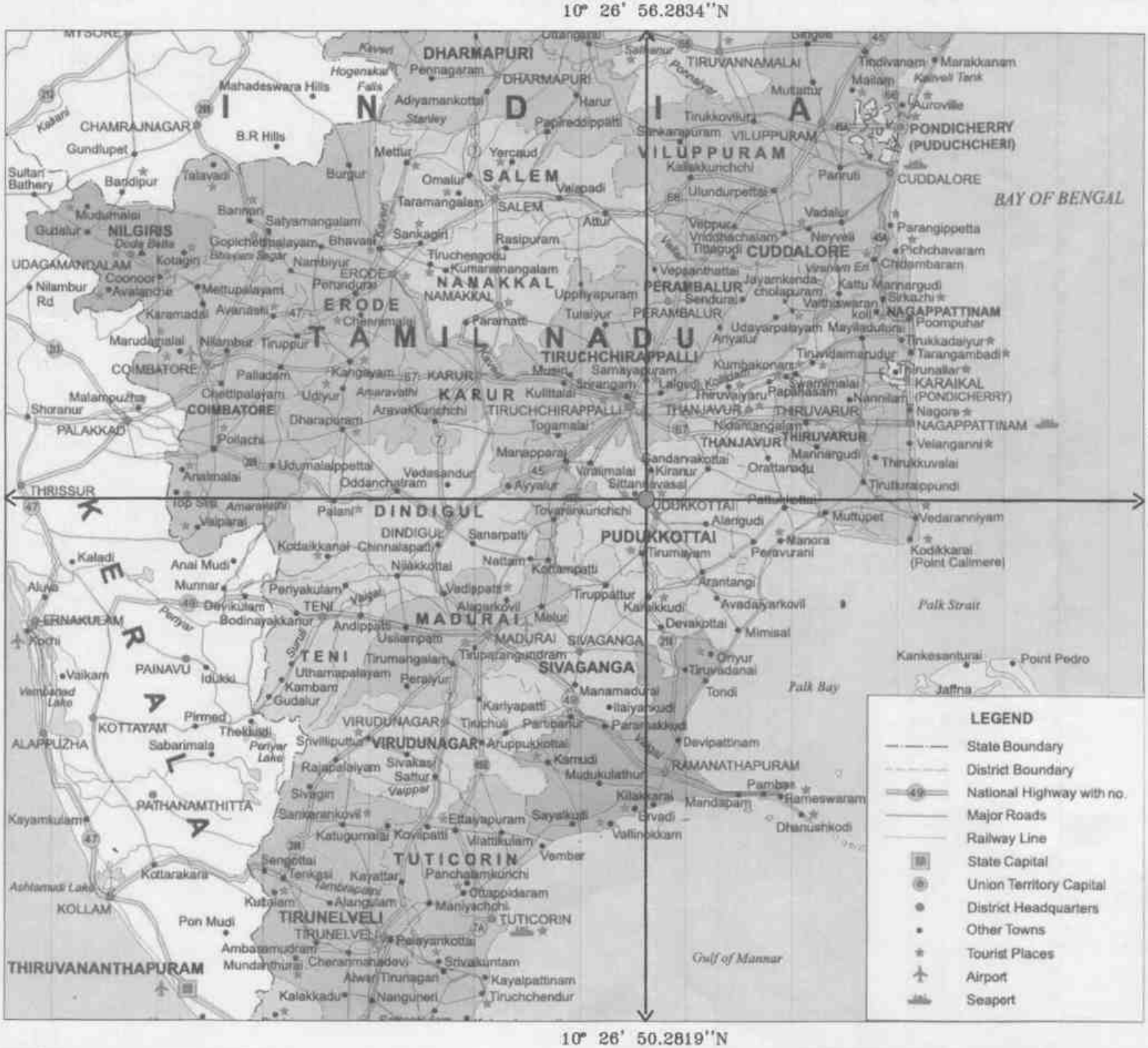


PLATE NO : I

DATE OF SURVEY : 19.01.2024

APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1.
EXTENT : 1.47.5 ha.
VILLAGE : MELUR,
TALUK : KULATHUR,
DISTRICT : PUDUKKOTTAI,
STATE : TAMIL NADU.

INDEX

Q. L. A. AREA :

TOPO SHEET NO. : 58 - J / 15

LATITUDE : 10° 26' 50.2819"N to 10° 26' 56.2834"N
LONGITUDE : 78° 46' 19.1656"E to 78° 46' 24.5439"E

LOCATION PLAN

NOT TO SCALE

PREPARED BY :

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

B.VENKADACHALAM,M.Sc.,
QUALIFIED PERSON
Under Rule 17(1)(a)(b)of MCR,2018

TOPO SHEET NO. : 58 - J / 15

LATITUDE : 10° 26' 50.2819"N to 10° 26' 56.2834"N
LONGITUDE : 78° 46' 19.1656"E to 78° 46' 24.5439"E

10KM RADIUS :

Q. LEASE AREA :

N

PLATE NO I A

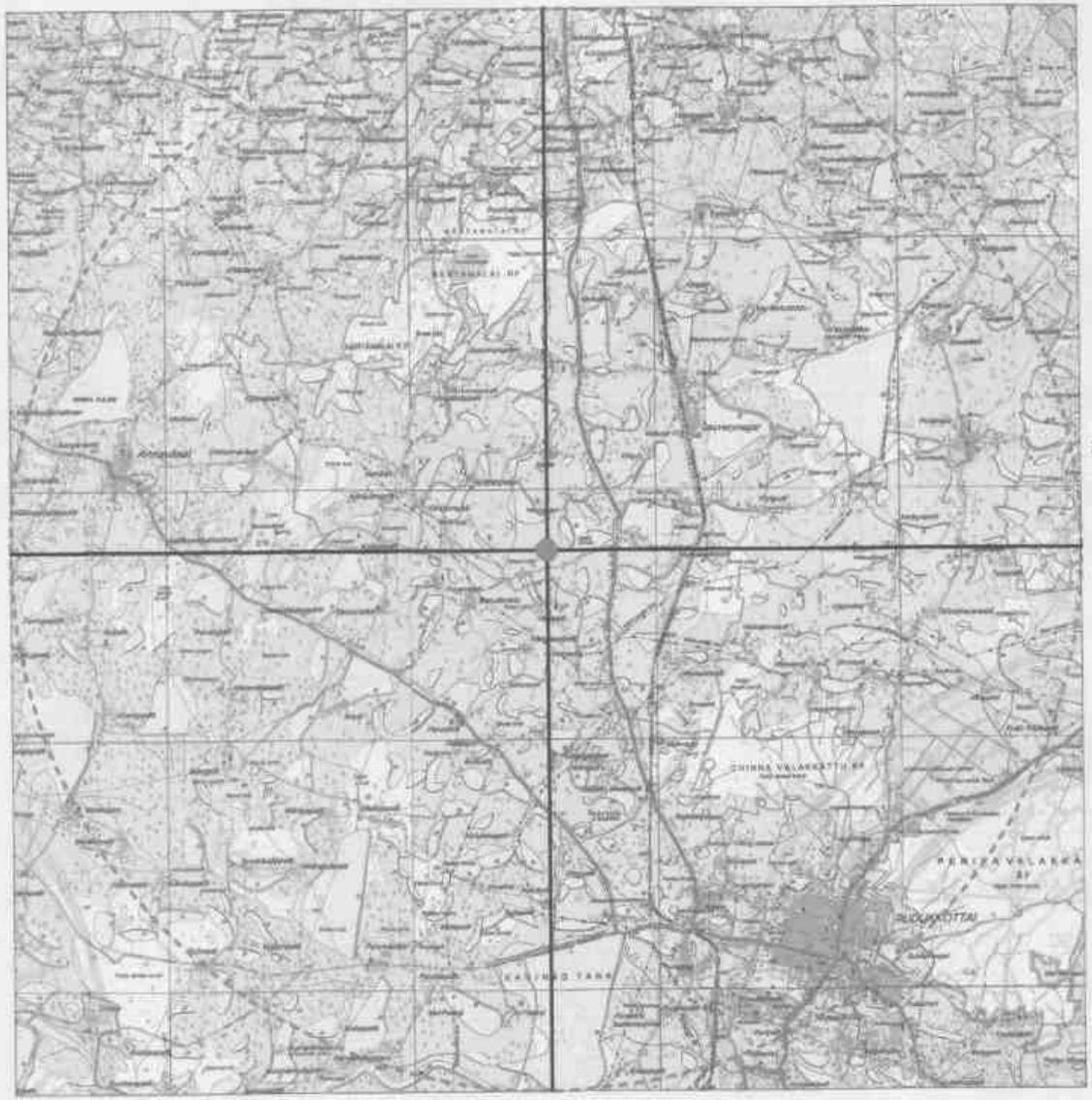
DATE OF SURVEY : 19.01.2024

10° 32' 21.6306"N

78° 40' 50.4763"E

78° 51' 53.2459"E

10° 21' 24.9328"N



APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1
EXTENT : 1.47.5 ha.
VILLAGE : MELUR,
TALUK : KULATHUR,
DISTRICT : PUDUKKOTTAI,
STATE : TAMIL NADU.

CONVENTIONAL SYMBOLS

Express highway: with toll, with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cartrack. Packtrack with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel, with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial, dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under construction
Railways, other gauges: double; single with distance stone; dismantled
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features.(1)Ext. (2)semi-fixed(vegetation). (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chapel. Church. Mosque. Sigah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; wooded. Surveyed tree
Boundary, international
" state: demarcated; undemarcated
" district; subdivision; tahsil or taluk; forest
Boundary pillars: surveyed; unlocated
Heights, triangulated: station; point; approximate. ▲200 . 200
Bench-mark: geodetic; tertiary; canal. BM 63-3
Post office. Telegraph office. Overhead tank
Rest house or Inspection bungalow. Circuit house. Police station. IB
Camping ground. Forest: reserved; protected. CG RF PF
Spaced names: administrative; locality or tribal. KIKRI ARIGA
Hospital. Dispensary. Veterinary: Hospital / Dispensary
Aerodrome. Heliport. Tourist site
Power line, with pylons surveyed, with poles unsurveyed

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE- 1:100000

PREPARED BY :

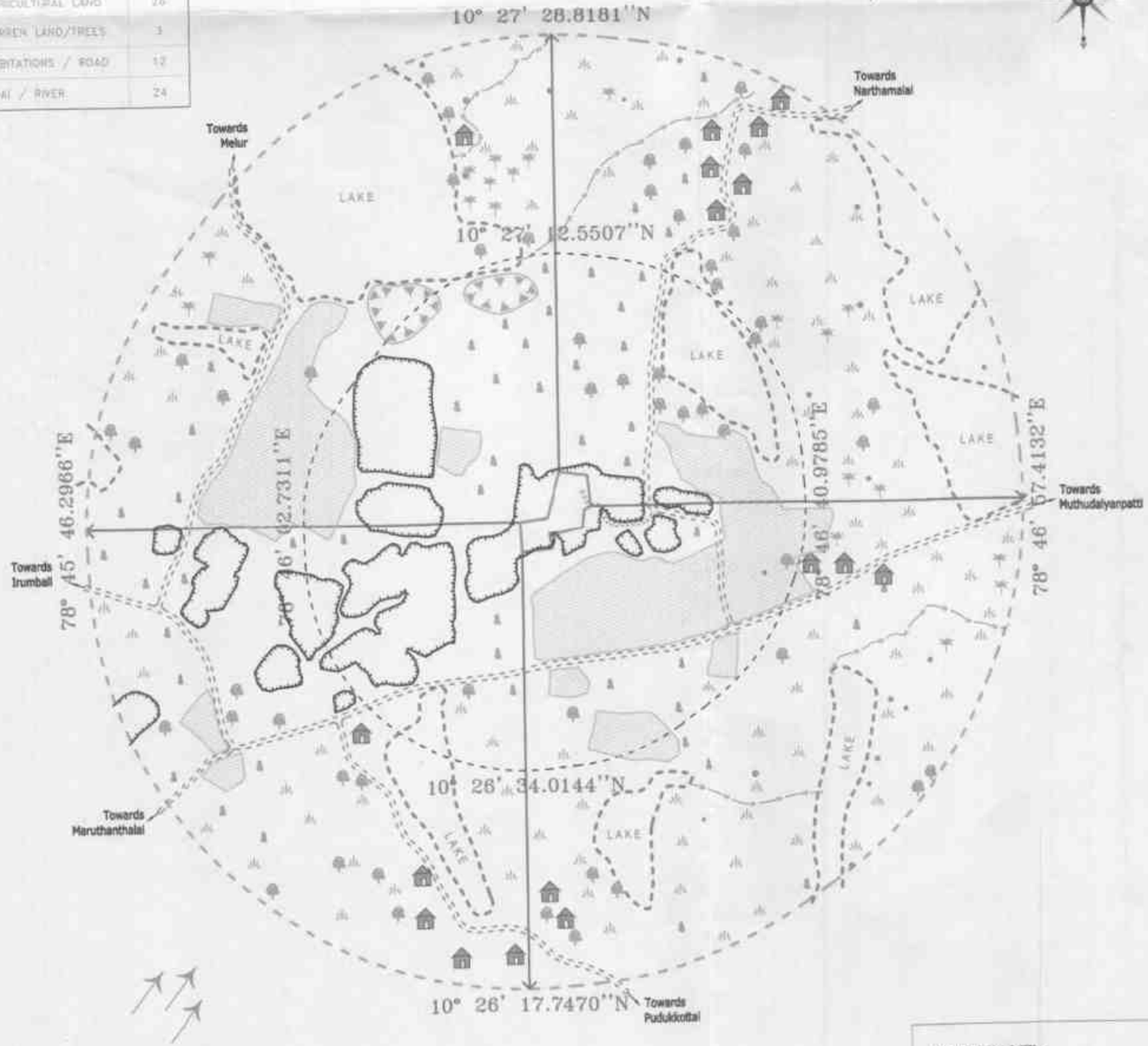
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

B.VEERABAGIRAM,M.Sc.,
QUALIFIED PERSON
Under Rule [illegible] of MCR,2016

LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD/PIT/CRUSHER	55
AGRICULTURAL LAND	26
BARREN LAND/TREES	3
HABITATIONS / ROAD	12
ODAI / RIVER	24

OCTOBER TO DECEMBER



JULY TO SEPTEMBER

INDEX

TOPO SHEET NO. : 58 - J / 15

LATITUDE : 10° 26' 50.2819"N to 10° 26' 56.2834"N
LONGITUDE : 78° 46' 19.1656"E to 78° 46' 24.5439"E

- Q. LEASE APPLIED AREA
- 500M RADIUS
- 1KM RADIUS
- WIND DIRECTION
- PANCHAYAT ROAD
- APPROACH ROAD
- POND/LAKE
- ODAI
- SEASONAL AGRI. LAND
- BARREN LAND
- TREES
- INFRASTRUCTURE
- CRUSHER
- WELL . PIT

PLATE NO: I-B

DATE OF SURVEY : 19.01.2024

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1.
EXTENT : 1.47.5 ha.
VILLAGE : MELUR.
TALUK : KULATHUR.
DISTRICT : PUDUKKOTTAI.
STATE : TAMIL NADU.

ENVIRONMENTAL AND LANDUSE PLAN FOR 1Km RADIUS

SCALE 1 : 10.000

APPLICANT :

Thiru.R.JAFFER ALI.
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

PREPARED BY :

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

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

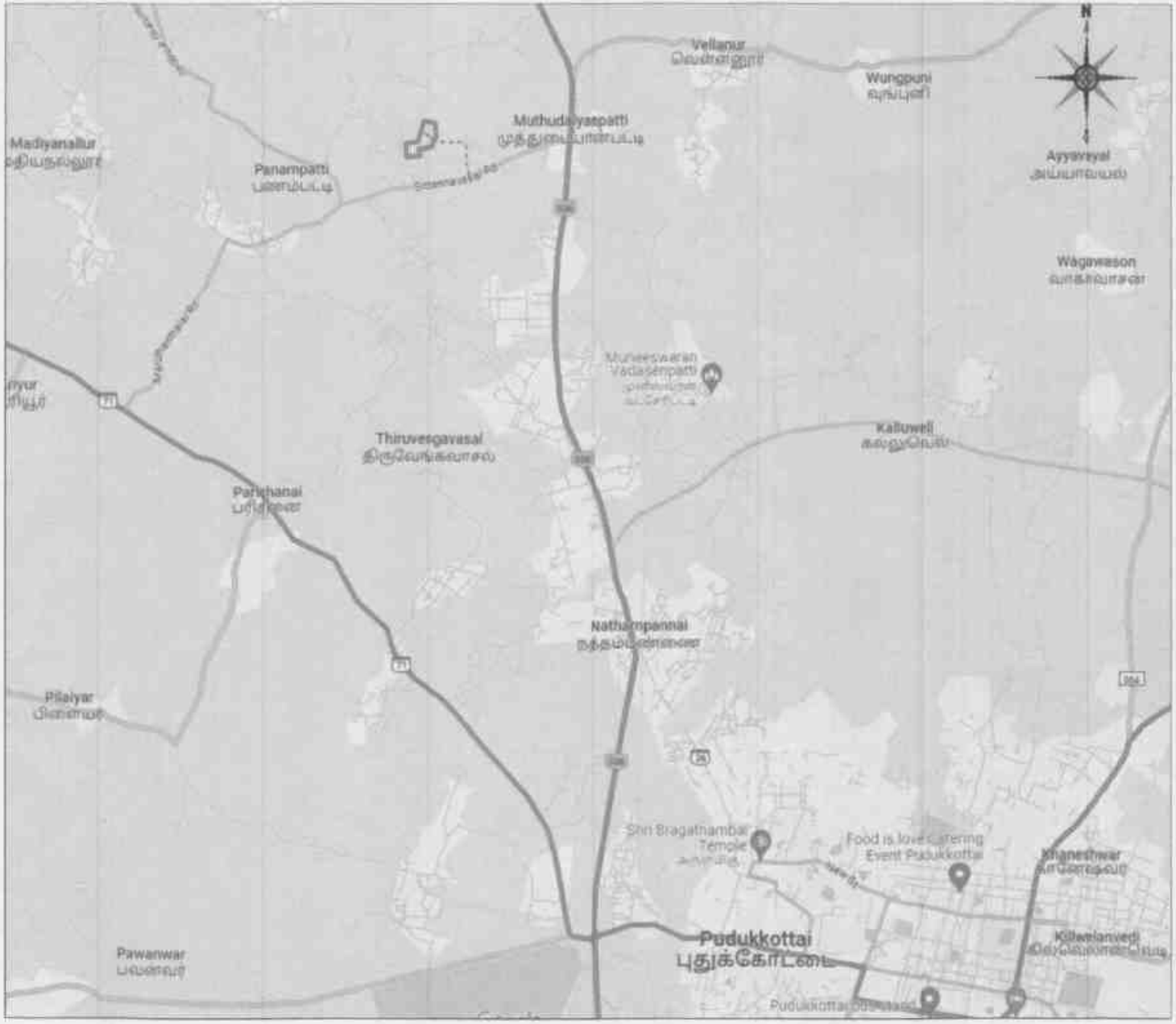


PLATE NO.I-C

DATE OF SURVEY : 19.01.2024

APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1.
EXTENT : 1.47.5 ha.
VILLAGE : MELUR.
TALUK : KULATHUR.
DISTRICT : PUDUKKOTTAI.
STATE : TAMIL NADU.

INDEX

QUARRY LEASE AREA

APPROACH ROAD

PANCHAYAT ROAD

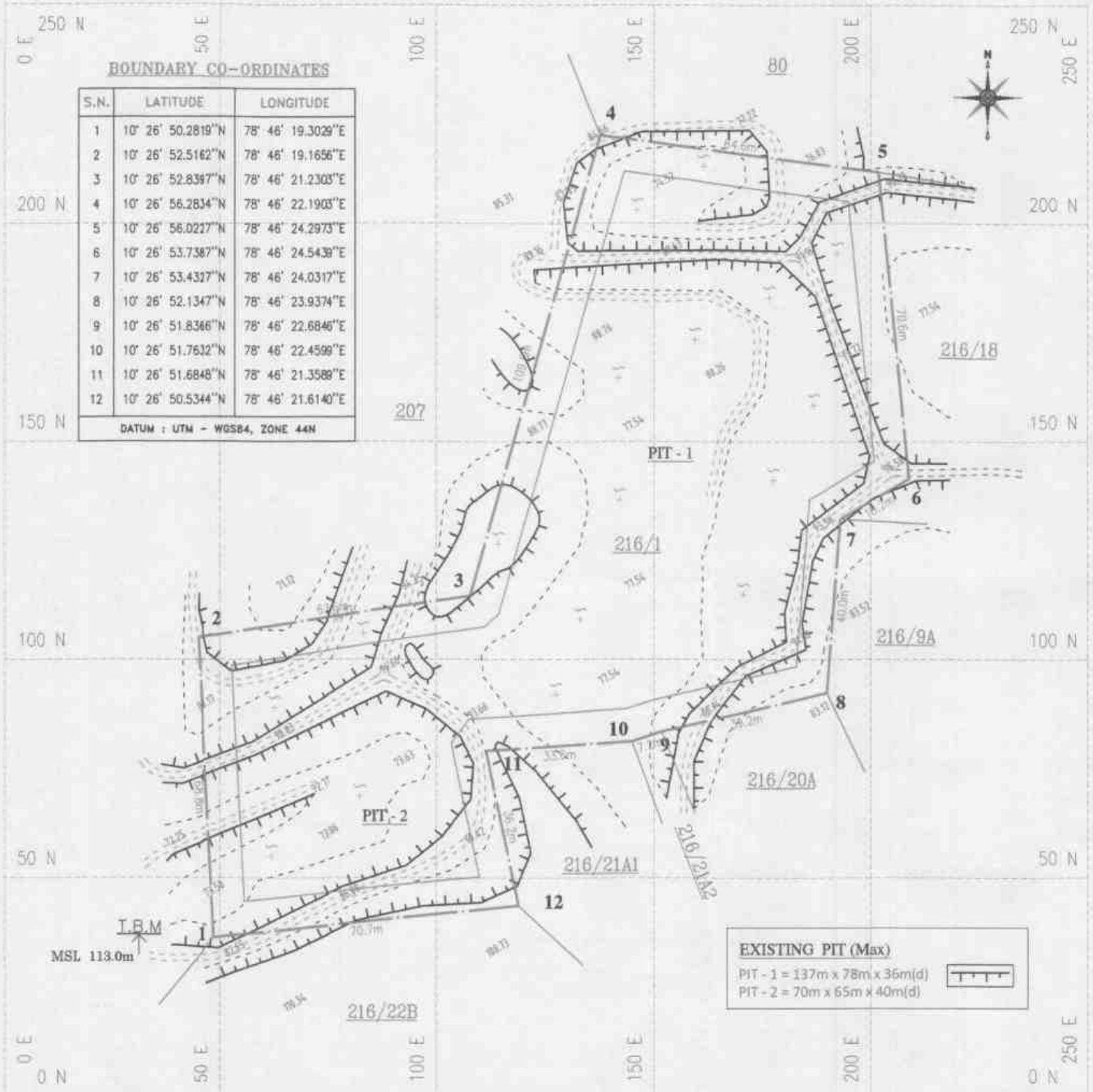
ROUTE MAP

Not To Scale

PREPARED BY :

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B.VENKATAGIRI M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) of the [illegible] MCR,2016



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	10° 26' 50.2819"N	78° 46' 19.3029"E
2	10° 26' 52.5162"N	78° 46' 19.1656"E
3	10° 26' 52.8397"N	78° 46' 21.2303"E
4	10° 26' 56.2834"N	78° 46' 22.1903"E
5	10° 26' 56.0227"N	78° 46' 24.2973"E
6	10° 26' 53.7387"N	78° 46' 24.5439"E
7	10° 26' 53.4327"N	78° 46' 24.0317"E
8	10° 26' 52.1347"N	78° 46' 23.9374"E
9	10° 26' 51.8366"N	78° 46' 22.6846"E
10	10° 26' 51.7632"N	78° 46' 22.4599"E
11	10° 26' 51.6848"N	78° 46' 21.3588"E
12	10° 26' 50.5344"N	78° 46' 21.6140"E

DATUM : UTM - WGS84, ZONE 44N

INDEX

- Q. LEASE AREA BOUNDARY
- 7.5M SAFETY DISTANCE
- TEMPORARY BENCH MARK — TBM
- APPROACH ROAD
- QUARRY ROAD
- PIT
- SPOT LEVELS — 77.5
- ROUGH STONE

PLATE NO: II

DATE OF SURVEY : 19.01.2024

APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1.
EXTENT : 1.47.5 ha.
VILLAGE : MELUR.
TALUK : KULATHUR.
DISTRICT : PUDUKKOTTAI.
STATE : TAMIL NADU.

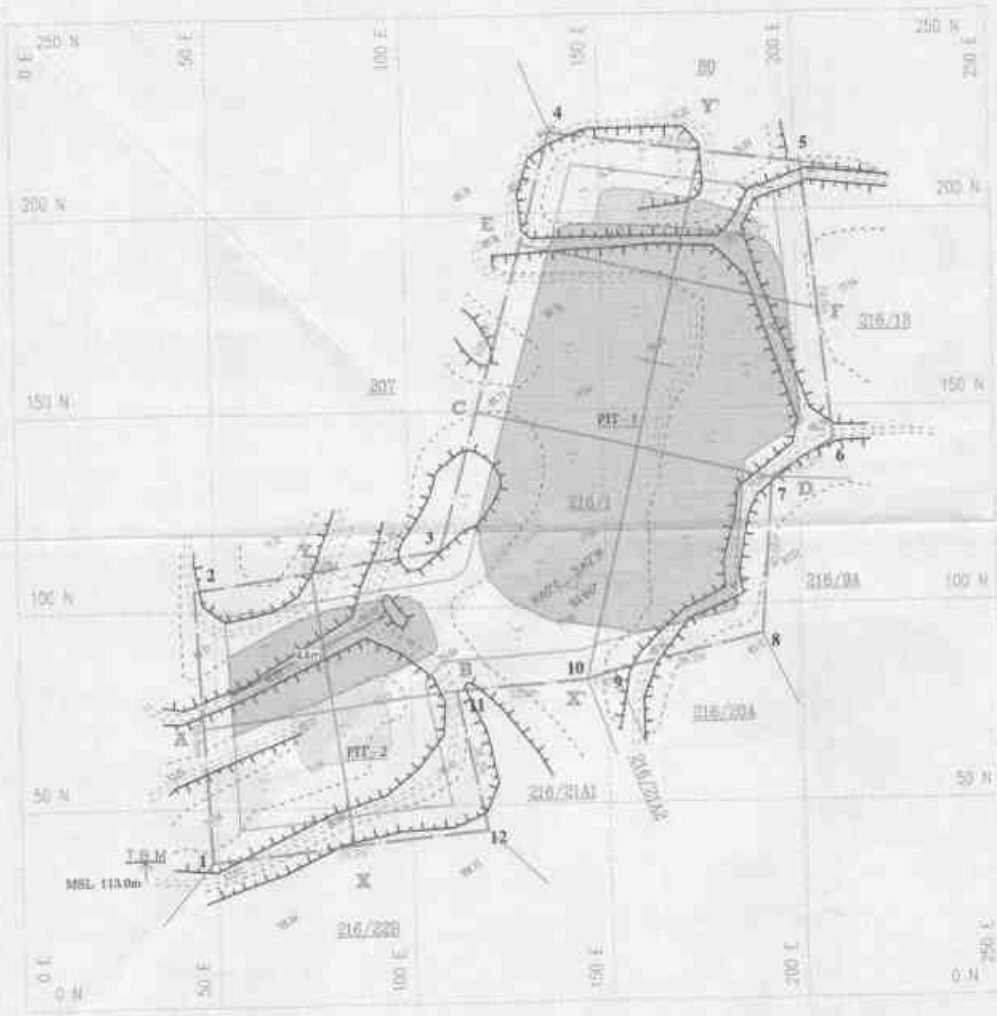
QUARRY LEASE & SURFACE PLAN

SCALE 1 : 1000

PREPARED BY :

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B.VENKATAGIRI M.Sc.,
QUALIFIED PERSON
Under Rule 17(1)(a)(ii) of MCR,2016





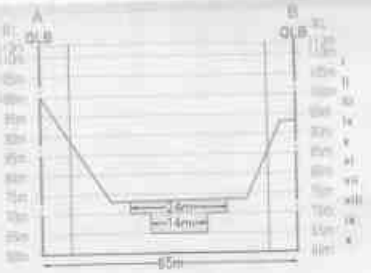
BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	10° 26' 30.2818"N	78° 46' 19.3029"E
2	10° 26' 52.5192"N	78° 46' 19.1656"E
3	10° 26' 52.9397"N	78° 46' 21.2305"E
4	10° 26' 56.2834"N	78° 46' 22.1903"E
5	10° 26' 56.0027"N	78° 46' 24.2873"E
6	10° 26' 53.7357"N	78° 46' 24.5439"E
7	10° 26' 53.4327"N	78° 46' 24.0317"E
8	10° 26' 52.1347"N	78° 46' 23.9374"E
9	10° 26' 51.8360"N	78° 46' 22.6845"E
10	10° 26' 51.7532"N	78° 46' 22.4589"E
11	10° 26' 51.6644"N	78° 46' 21.2588"E
12	10° 26' 50.5344"N	78° 46' 21.8140"E

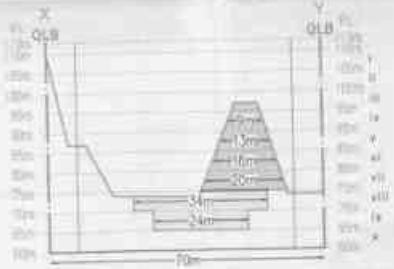
DATUM : UTM - WGS84, ZONE 44N

1st-yr Proposed area to be Quarried
2nd-yr Proposed area to be Quarried
3rd-yr Proposed area to be Quarried

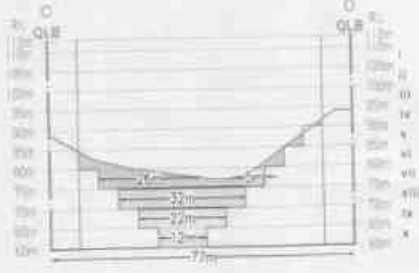
SECTION ALONG A-B



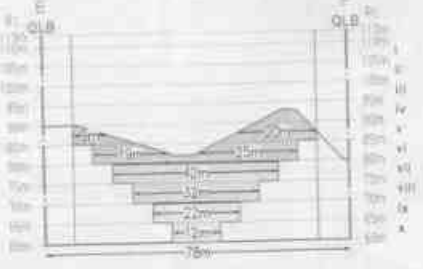
SECTION ALONG X-Y



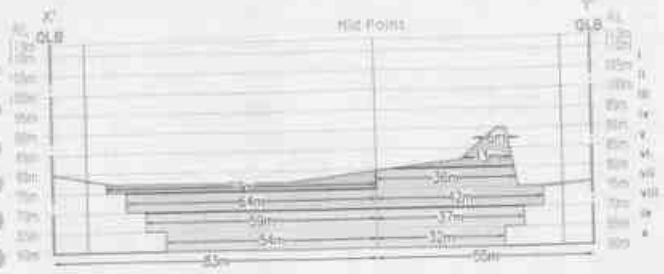
SECTION ALONG C-D



SECTION ALONG E-F



SECTION ALONG X'-Y'



PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	1.47.5	1.47.5
INFRASTRUCTURE	Nil	Nil
ROAD	Nil	Nil
GREEN BELT	Nil	Nil
UN-UTILIZED AREA	Nil	Nil
GRAND TOTAL	1.47.5	1.47.5

INDEX

- Q. LEASE AREA BOUNDARY
- 7.5M SAFETY DISTANCE
- TEMPORARY BENCH MARK
- APPROACH ROAD
- QUARRY ROAD
- PIT
- SPOT LEVELS
- ROUGH STONE
- STRIKE & DIP

PLATE NO: III

DATE OF SURVEY : 19.01.20

APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos. : 216/1,
EXTENT : 1.47.5 hs.
VILLAGE : MELUR,
TALUK : KULATHUR,
DISTRICT : PUDUKKOTTAI,
STATE : TAMIL NADU.

TOPOGRAPHY, GEOLOGICAL PL
& SECTIONS SHOWING YEARW
DEVELOPMENT & PRODUCTIO

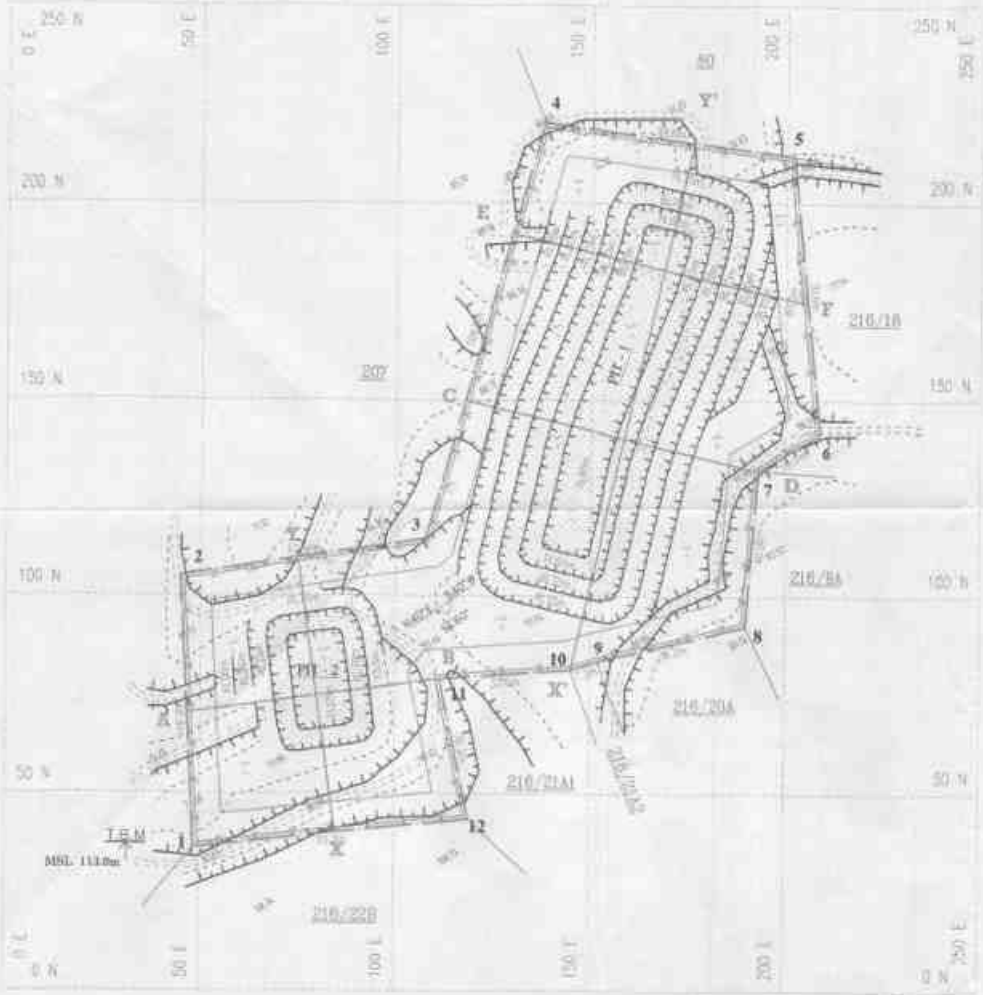
SCALE 1 : 1000

PREPARED BY :

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

QUALIFIED PERSON

105 A



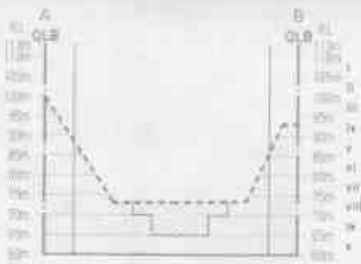


BOUNDARY CO-ORDINATES

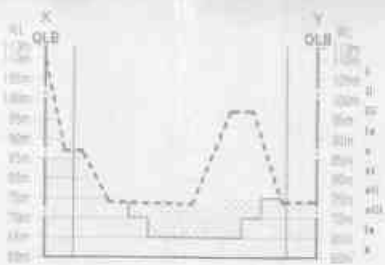
S.N.	LATITUDE	LONGITUDE
1	10° 26' 30.2819"N	78° 46' 19.3029"E
2	10° 26' 32.5102"N	78° 46' 19.1656"E
3	10° 26' 32.8397"N	78° 46' 21.2303"E
4	10° 26' 36.2834"N	78° 46' 22.1903"E
5	10° 26' 36.0227"N	78° 46' 24.2973"E
6	10° 26' 33.7387"N	78° 46' 24.5439"E
7	10° 26' 33.4327"N	78° 46' 24.0317"E
8	10° 26' 32.1347"N	78° 46' 23.9276"E
9	10° 26' 31.8366"N	78° 46' 22.6846"E
10	10° 26' 31.7632"N	78° 46' 22.4099"E
11	10° 26' 31.6868"N	78° 46' 21.3588"E
12	10° 26' 30.5344"N	78° 46' 21.6145"E

DATUM : UTM - WGS84, ZONE 44N

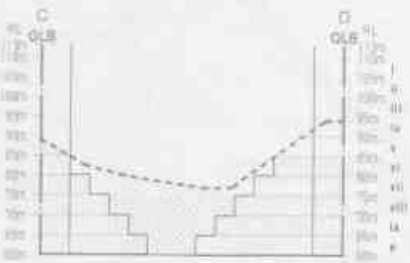
SECTION ALONG A-B



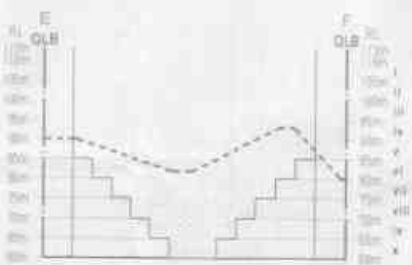
SECTION ALONG X-Y



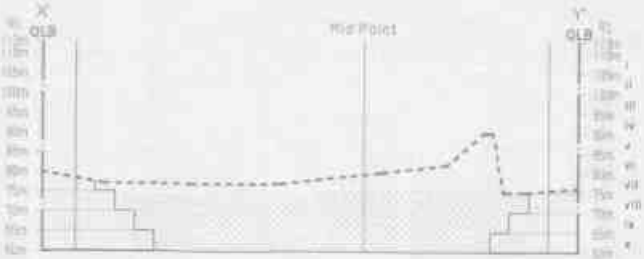
SECTION ALONG C-D



SECTION ALONG E-F



SECTION ALONG X'-Y'



PROPOSED PIT (Max)

PIT - 1 = 137m x 78m x 53m(d)
PIT - 2 = 70m x 65m x 48m(d)

INDEX

- Q. LEASE AREA BOUNDARY
- 7.5M SAFETY DISTANCE
- TEMPORARY BENCH MARK
- APPROACH ROAD
- QUARRY ROAD
- PIT
- SPOT LEVELS
- ROUGH STONE
- STRIKE & DIP
- FENCING
- FINISHED SURFACE LEVEL
- OLD SURFACE LEVEL
- EXISTING LAND FORM
- RAIN WATER STORAGE

PLATE NO: IV

DATE OF SURVEY : 19.01.2024

APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.S.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1,
EXTENT : 1.47.5 hs.
VILLAGE : MELUR,
TALUK : KULATHUR,
DISTRICT : PUDUKKOTTAI,
STATE : TAMIL NADU.

PROGRESSIVE QUARRY CLOSUR PLAN & SECTIONS

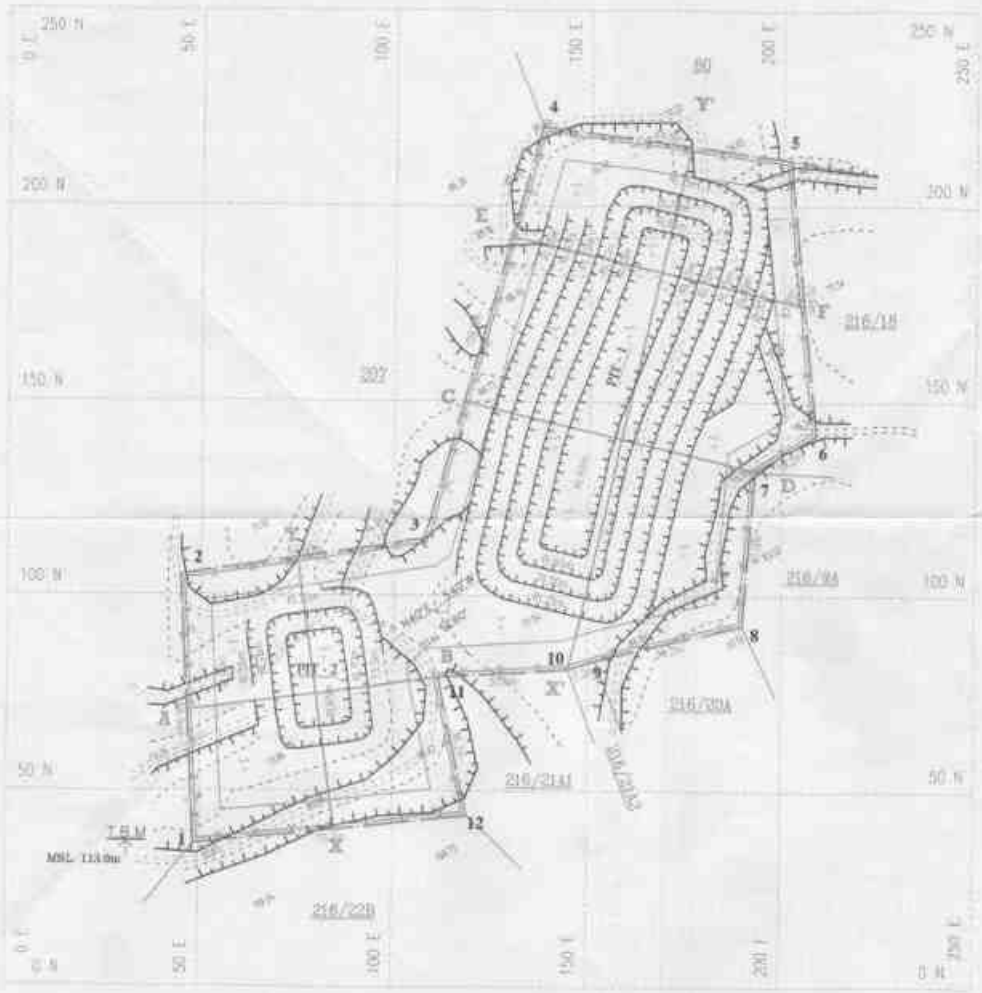
SCALE 1 : 1000

PREPARED BY :

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

S.THANGAVELU M.Sc.,
QUARRY OWNERS ASSOCIATION
PUDUKKOTTAI DISTRICT, MOB:2018

106 A



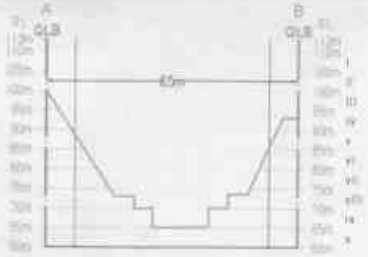


BOUNDARY CO-ORDINATES

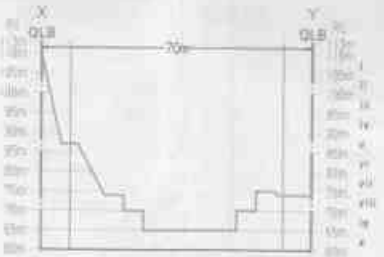
S.N.	LATITUDE	LONGITUDE
1	10° 25' 50.2819"N	78° 46' 19.3029"E
2	10° 25' 52.5162"N	78° 46' 19.1656"E
3	10° 25' 52.8367"N	78° 46' 21.2303"E
4	10° 25' 56.2834"N	78° 46' 22.1903"E
5	10° 25' 56.0221"N	78° 46' 24.2873"E
6	10° 25' 53.7387"N	78° 46' 24.5439"E
7	10° 25' 53.4327"N	78° 46' 24.0317"E
8	10° 25' 52.1347"N	78° 46' 23.8374"E
9	10° 25' 51.8306"N	78° 46' 22.6666"E
10	10° 25' 51.7622"N	78° 46' 22.4589"E
11	10° 25' 51.6846"N	78° 46' 21.3589"E
12	10° 25' 50.5344"N	78° 46' 21.6142"E

DATUM : WGS84, ZONE 44N

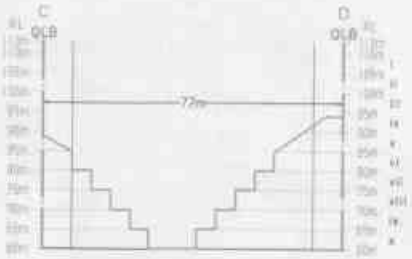
SECTION ALONG A-B



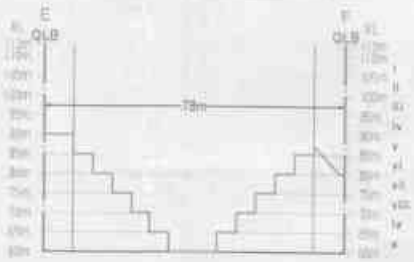
SECTION ALONG X-Y



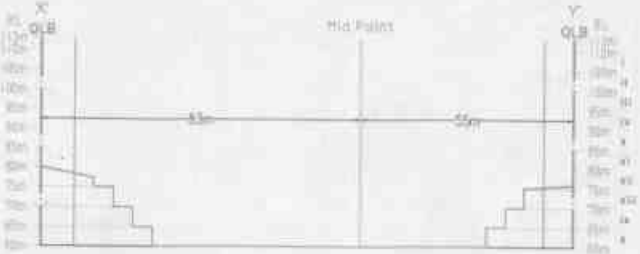
SECTION ALONG C-D



SECTION ALONG E-F



SECTION ALONG X'-Y'



ULTIMATE PIT (Max)

PIT - 1 = 137m x 70m x 53m(D)

PIT - 2 = 70m x 65m x 48m(D)

INDEX

Q. LEASE AREA BOUNDARY	
7.5M SAFETY DISTANCE	
TEMPORARY BENCH MARK	TBM
APPROACH ROAD	
QUARRY ROAD	
PIT	
SPOT LEVELS	
ROUGH STONE	
STRIKE & DIP	
FENCING	

PLATE NO: V

DATE OF SURVEY : 19.01.2024

APPLICANT :

Thiru.R.JAFFER ALI,
S/o. RAJA MOHAMED,
T.I.No.9884,
KALIF NAGAR 4TH STREET,
PUDUKKOTTAI DISTRICT - 622 001.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 216/1,
EXTENT : 1.47.5 ha.
VILLAGE : MELUR,
TALUK : KULATHUR,
DISTRICT : PUDUKKOTTAI,
STATE : TAMIL NADU.

CONCEPTUAL PLAN & SECTIONS

SCALE 1 : 1000

PREPARED BY :

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

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

HYDRO-GEOLOGY REPORT

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HYDRO - GEOLOGICAL STUDIES AT THIRU. R. JAFFER ALI, ROUGH STONE QUARRY IN MELUR VILLAGE, KULATHUR TALUK, PUDUKKOTTAI DISTRICT, TAMIL NADU.

1 INTRODUCTION

Proprietor of **Thiru. R. Jaffer Ali,** Rough stone quarry over an extent of 1.47.5 hectares of Government land in S.F.Nos: 216/1 of Melur Village, Kulathur Taluk, Pudukkottai 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 rough stone quarry and genesis rock with determine the shallow and deeper freshwater aquifer in the proposed mining area in Melur Village.

1.1. Scope of Study

The primary objective of this study is to investigate both shallow and deep aquifers using the Vertical Electrical Sounding (VES) method, which measures the apparent resistivity of the study area. Specifically, the study focuses on estimating the groundwater level in Melur village, located in Kulathur Taluk, Pudukkottai District, Tamil Nadu, including the proposed leasehold area and its surroundings. The area is predominantly characterized by variations in water levels, sand types, rock types, and basement rock features. The main goal is to determine the water table depth and analyze groundwater flow patterns within the leasehold and adjacent areas **(Fig.1).**

1.2. Profiles in the Study Area.

Name of the Lessee	: **Thiru. R. Jaffer Ali**
Survey No	: 216/1
Extent	: 1.47.5 hectares.
Village	: Melur village,
Taluka	: Kulathur Taluk,
District	: Pudukkottai
State	: Tamil Nadu

2. STUDY AREA DESCRIPTION



Figure.1. Shows proposed mine lease area

The lease applied area is located about 7km Northwestern side of Pudukkottai town, 12 km Southern side of Kulathur town and 2km Southern side of Melur Village.

Pudukkottai —19 km→ Kulathur —10 km→ Melur —2km→ Lease Applied area

111 A

North South South

2.1 Topography of the Lease Area and Its Surrounding Environments:

The lease area is flat terrain. The area has gentle sloping towards Northeastern side and altitude of the area is 113m above from MSL. The area is covered by 3m thickness of Topsoil and followed by Massive Charnockite which is clearly inferred from the existing quarry pit.

The Water table is found at a depth of 58m - 62m. Average annual rainfall is about 985mm.





Figure 2. Topography of the lease area

3 REGIONAL GEOLOGY OF PUDUKKOTTAI DISTRICT

The geological formation of Pudukkottai District comprises of the hard rocks formed in the Archean age to the sedimentary deposits of the Quaternary period. Geologically the entire study area can be divided into hard rock and sedimentary rock regions. The hard rocks are found on the western

side and sedimentary formation towards the eastern direction of the study area. About 45 per cent of the study area is under hard massive formation of Archean age and the rest 55 per cent comprises of the sedimentary formation ranging from Pre-Cambrian to Quaternary period.

The various types of hard rocks found here are Charnockites, Hornblende Gneiss, Biotite Gneiss, Granite and Quartzite's. Various types of Gneiss rocks are found in the western part of Pudukkottai District. Charnockites and granites rocks are mostly found in the central part including the blocks of Kunnandavarkoil, Thirumayam and the southern parts of Pudukkottai Block. The various types of Gneiss rocks are found in the western part of the study area, consisting the blocks of Viralimalai, Annavasal and Ponamaravathy.

Quartzite deposits are found in small quantity in some parts of Annavasal and Thirumayam Blocks. In the Blocks of Kulathur, Thirumayam and parts of Pudukkottai crystalline rocks are found.

The sedimentary deposits found in this region consist of shaly sandstone, sand, clay and gravels. The sedimentary deposits formed during the Tertiary period consist of laterite, arenaceous and argillaceous sandstone clay. These deposits are found in the Blocks of Arantangi, Gandarvakottai, Alangudi and Thiruvarankulam. Crecateous deposits consisting of clay, limestone, sand stone and clayey sand stone are found in some parts of Gandarvakottai, Thirumayam and Pudukkottai. Unconsolidated coastal alluvial deposits consisting of sand gravel and silt are found along the river bed.

Silt and clay deposits of Quaternary period are found in the blocks of Avudaiyarkoil and Manalmelkudi. Sand deposits with beach ridges and dunes are identified near the coastal boundary of Pudukkottai District.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the

Charnockite body is N20°E – S20°W with dipping towards NW70°.

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

AGE		FORMATION
Recent	-	Quaternary formation (Gravel)
---------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneissic complex

4 HYDROGEOLOGY

(i) Major Geological formations:

Geology Geologically the entire district can be broadly classified into hard rock and sedimentary regions.

a) Hard rock regions

Around 45% of this district is underlain by hard massive formations of Archaean age. Granitic gneiss, hornblende biotite gneiss, charnockites, pegmatites and quartzites are the various types of rocks encountered in the hard rock region. Kulathur, major part of Thirumayam and parts of Pudukottai taluk are occupied by crystalline rocks. (Source: CGWB).

b) Sedimentary regions

The area occupied by sedimentary formations belonging to 1. Cretaceous 2.Tertiary and 3. Recent ages fall on the eastern half of the district. The total extent occupied by sedimentary formations amounts to 55% of the total geographical area of the district. Tertiary deposits of Pudukottai district consists of laterite, arenaceous and argillaceous sand stone and clay. Cretaceous deposits consists of clay, limestone, sand stone and clayey sand stone. The coastal alluvial deposits consists of unconsolidated sands, gravels and clay. Aranthangi, major parts of Gandarvakottai, Alangudi, Avudaiyarkoil and half of Manamelkudi and Pudukottaitaluks are occupied by tertiary

deposits. Minor parts of Gandarvakottai, Thirumayam and half of Pudukottai taluks are occupied by cretaceous deposits. Half of Manamelkudi and minor parts of Avudaiyarkoil taluks are occupied by Quarternary deposits.

5 METHODOLOGIES OF STUDY

1. Open well and bore well water level measurement, depth of water level diameter of open well, agriculture land survey.
2. Geophysical survey for deep aquifer in nearby site Rock and soil geology also collected for the aquifer characteristic study
3. Aquifer thickness and quality measurement study in nearby proposed mine site areas of the study area

5.1 Geophysical Investigation

5.1.1 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)**

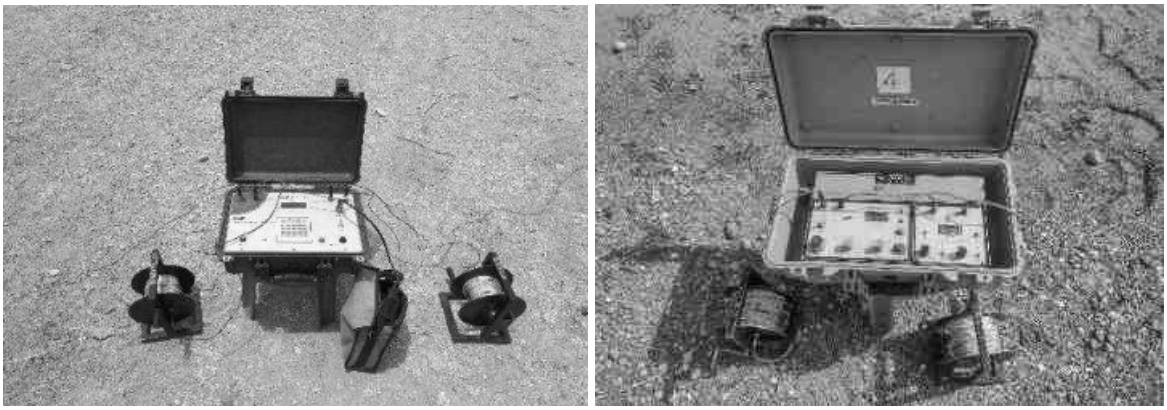


Figure 3. Electrical resistivity survey Instruments.

5.2.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The

presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = Rs * L/A \text{ (in Ohm)}$$

Where Rs is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$Rs = (A/L) * (dV/I) \text{ (in Ohm m)}$$

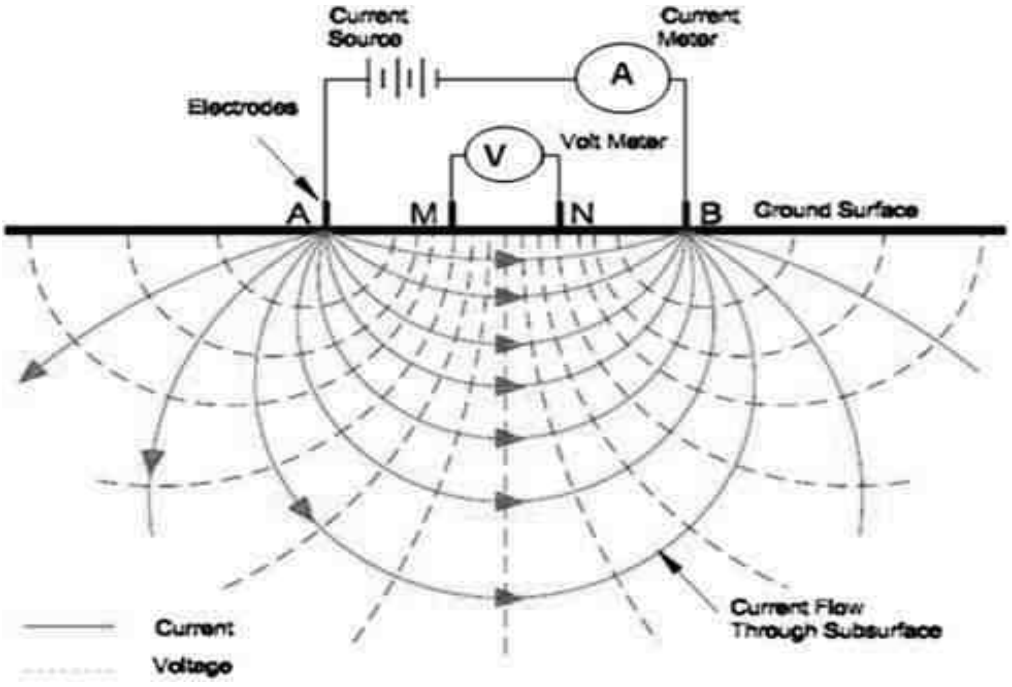


Figure 4. Schematic Diagram of Electrical resistivity principle

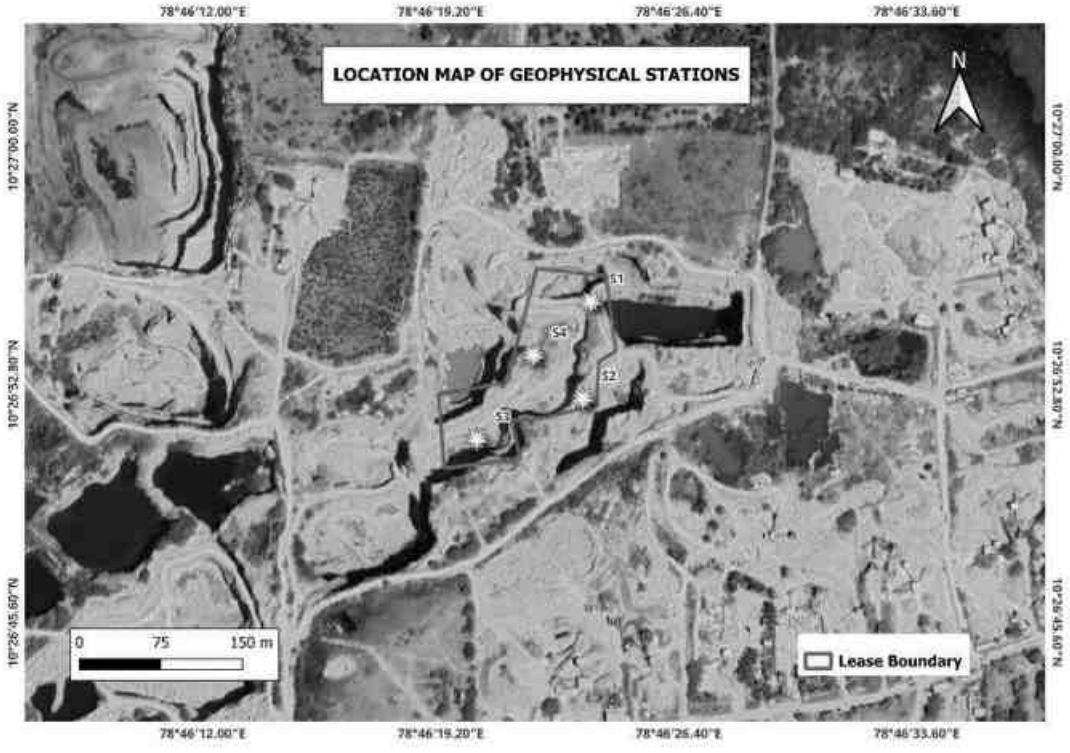


Figure 5. Geophysical survey location in the lease area

6. GEOPHYSICAL DATA INTERPRETATION & GRAPH

Table 1 Geophysical data of Station 1

STATION-1				
AB/2 (m)	MN/2 (m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	6.87	32.37
5	1	37.7	1.67	62.96
10	1	155.5	0.96	149.29
10	5	23.6	3.15	74.22
15	5	62.8	2.65	166.50
20	5	117.8	2.38	280.39
30	5	274.9	2.12	582.77
40	5	494.8	1.87	925.28
50	5	777.5	1.61	1251.85
60	5	1123.1	1.36	1527.45
70	5	1531.5	1.05	1608.11
80	5	2002.8	0.89	1782.47
90	5	2536.8	0.72	1826.53
100	5	3133.7	0.69	2162.28

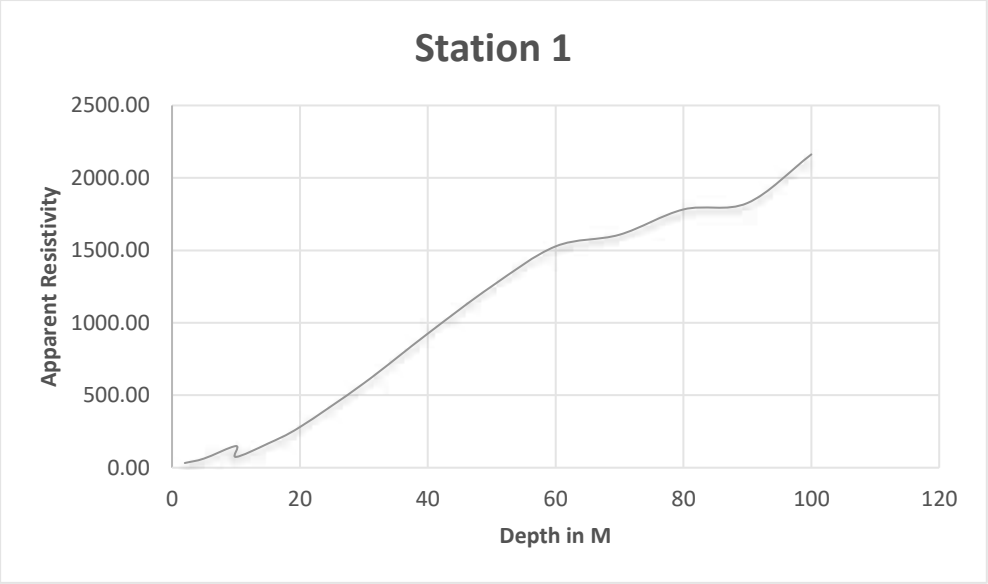


Figure 6 Graphical Representation of Geophysical data Station 1

Table 2 Geophysical data of Station 2

STATION-2				
AB/2 (m)	MN/2 (m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	6.41	30.21
5	1	37.7	2.15	81.05
10	1	155.5	1.07	166.39
10	5	23.6	2.96	69.74
15	5	62.8	2.37	148.91
20	5	117.8	1.85	217.95
30	5	274.9	1.4	384.85
40	5	494.8	1.15	569.02
50	5	777.5	0.87	676.47
60	5	1123.1	0.72	808.65
70	5	1531.5	0.67	1026.13
80	5	2002.8	0.63	1261.75
90	5	2536.8	0.57	1446.00
100	5	3133.7	0.48	1504.20

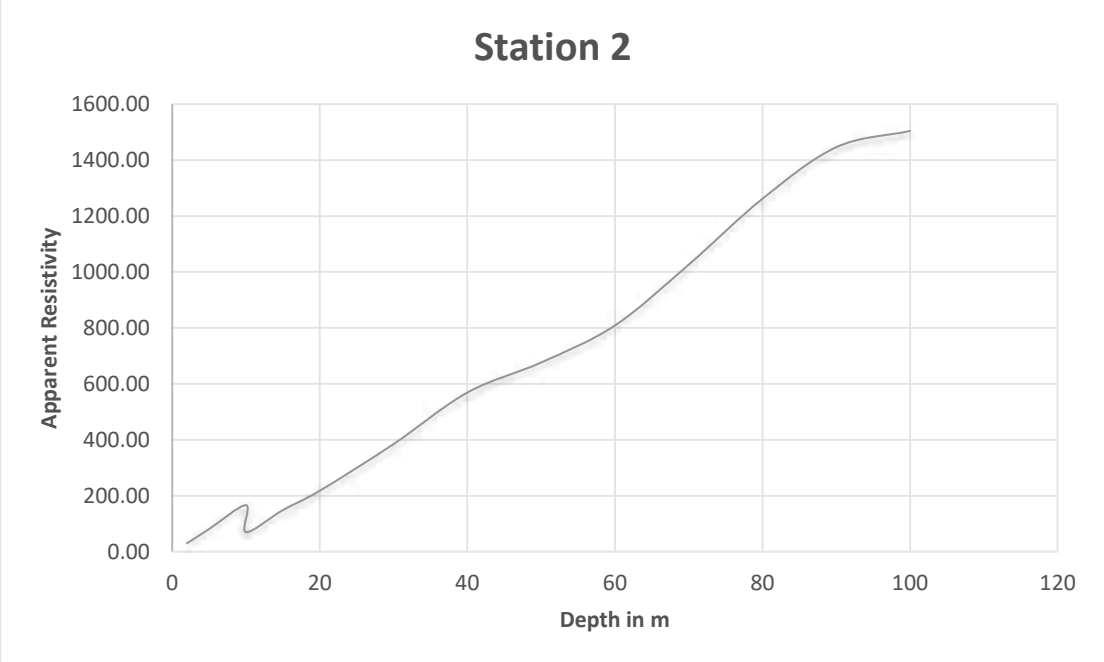


Figure 7 Graphical Representation of Geophysical data Station 2

Table 3 Geophysical data of Station 3

STATION-3				
AB/2 (m)	MN/2 (m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	5.69	26.81
5	1	37.7	1.67	62.96
10	1	155.5	0.89	138.40
10	5	23.6	2.21	52.07
15	5	62.8	1.8	113.10
20	5	117.8	1.63	192.03
30	5	274.9	1.38	379.35
40	5	494.8	1.17	578.92
50	5	777.5	0.86	668.69
60	5	1123.1	0.7	786.19
70	5	1531.5	0.64	980.18
80	5	2002.8	0.6	1201.66
90	5	2536.8	0.53	1344.53
100	5	3133.7	0.45	1410.19

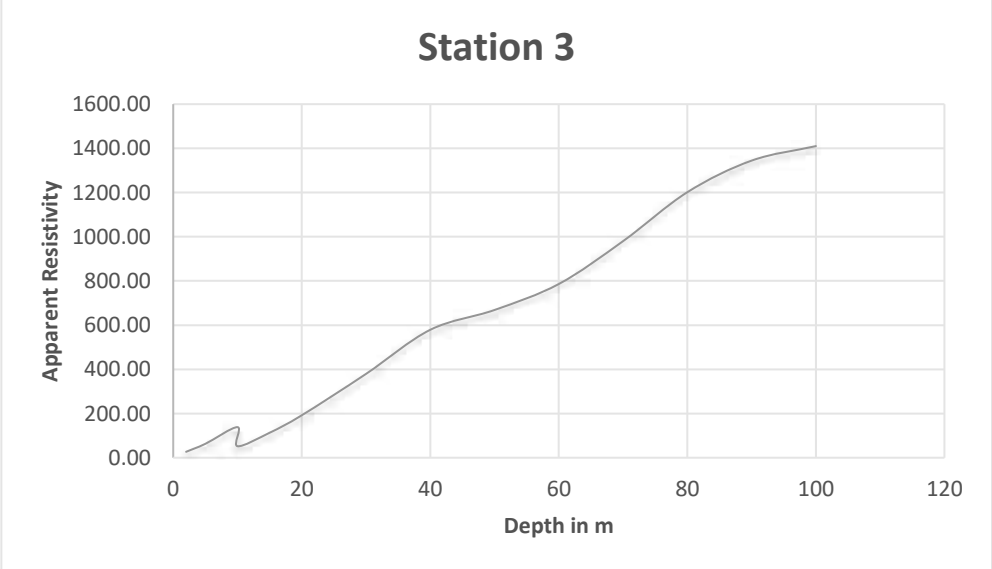


Figure 8 Graphical Representation of Geophysical data Station 3

Table 4 Geophysical data of Station 4

STATION-4				
AB/2 (m)	MN/2 (m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	8.24	38.83
5	1	37.7	2.31	87.09
10	1	155.5	1.13	175.73
10	5	23.6	2.7	63.62
15	5	62.8	2.55	160.22
20	5	117.8	2.34	275.68
30	5	274.9	2.12	582.77
40	5	494.8	1.86	920.33
50	5	777.5	1.64	1275.18
60	5	1123.1	1.3	1460.06
70	5	1531.5	1.18	1807.21
80	5	2002.8	0.89	1782.47
90	5	2536.8	0.74	1877.26
100	5	3133.7	0.65	2036.93

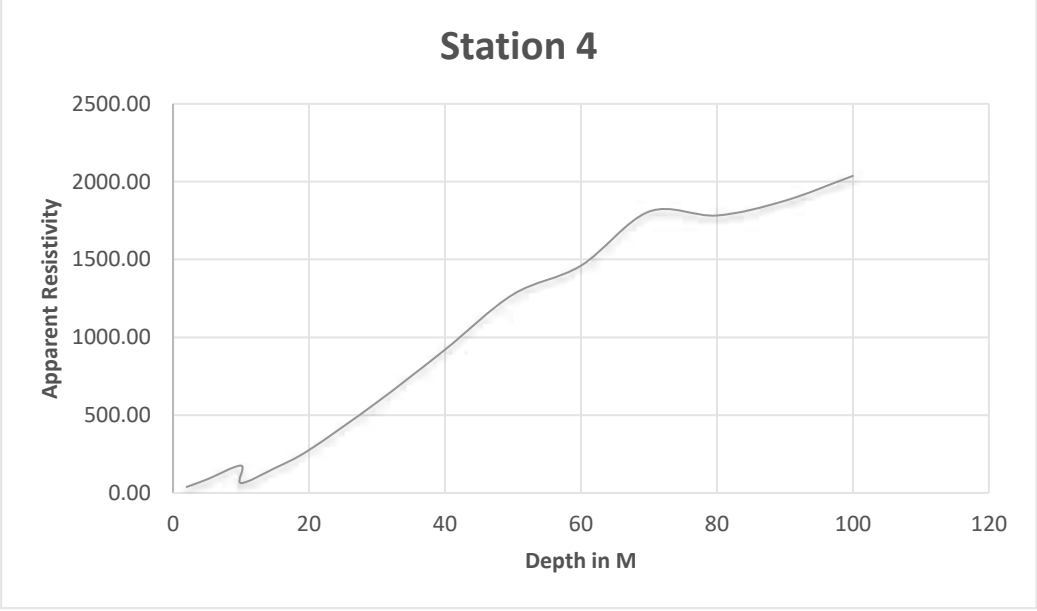
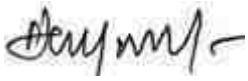


Figure 9 Graphical Representation of Geophysical data Station 4

7.CONCLUSION

- The lease area is flat terrain. The area has gentle sloping towards Northeastern side and altitude of the area is 113m above from MSL
- The geological study of the given area covered by topsoil and rough stone in the entire area. The discharge of the groundwater controlled by the massive Charnockite rock.
- The massive Charnockite formation $SE60^0$ dipping act as a barrier and restrict the groundwater flow movement in the mine lease area.
- Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 100m.
- The subsurface formation up to this depth can be categorized as follows,
    - **0m to 3m (Average) - Top Soil**
    - **4m to 50m (Average) – weathered & Charnockite Formation (Massive Formation)**
- In this mine lease area, groundwater occurs at shallow depth, 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 50m.
- The aquifer are found within the weathered / fractured metamorphic terrain. Currently the aquifers are located at **60 to 65 meters** below ground level (BGL). However, considering the approved mining plan depth, which is **53 meters** below ground level. It will not impact the groundwater table.
- 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.



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தமிழ்நாடு அரசு
2023

பதிவெண்: எம். 4

புதுக்கோட்டை மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

புதுக்கோட்டை, அக்டோபர் 19, 2023

[எண் 14

ஐப்பசி 2, சோபகிருது, திருவள்ளுவர் ஆண்டு—2054

மாவட்ட ஆட்சியர் அறிவிக்கை

கனிமங்களும் குவாரிகளும் - மதுரை மாவட்டம் - 1959 ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி 8(1) ன்படி டெண்டர் இணைந்த பொது ஏலத்தில் விடுவது குறித்த அறிவிப்பு.

மாவட்ட ஆட்சியர் ந.க.எண் 611/2022 (புமசு), நாள்: 18-10-2023

புதுக்கோட்டை மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் தேர்வு செய்யப்பட்டுள்ள கல் குவாரியிலிருந்து சாதாரண பொது உபயோக சிறு கனிமங்களைக் குவாரி செய்து எடுத்து செல்வதற்கான குத்தகை உரிமம் வழங்க வேண்டி மூடி முத்திரையிட்ட டெண்டர் விண்ணப்பங்கள் கோருதல் மற்றும் பொது ஏல அறிவிப்பு.

(அ) 1959 ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி 8-ன் உள்விதி (1)-ன்படி இந்த அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள அட்டவணையில் குறிப்பிடப்பட்டுள்ள அரசுப் புறம்போக்கு நிலங்களில் அமைந்துள்ள கல்குவாரிகளிலிருந்து சாதாரண உடைகல், குண்டுக்கல், சக்கைக்கல், ஜல்லி, கலுக்கால் வெட்டி எடுத்துச் செல்ல ஏற்கனவே கல் உடைக்கப்பட்ட குவாரிகளுக்கு ஐந்து ஆண்டு காலத்திற்கும், கல் உடைக்கப்படாத குவாரிக்கு பத்து ஆண்டு காலத்திற்கும் குத்தகை பெற மூடி முத்திரையிடப்பட்ட மறைமுக டெண்டருடன் இணைந்த திறந்த முறை ஏலத்தின் மூலம் குவாரி குத்தகை கோரும் டெண்டர் மனுக்கள் முப்பிரதிகளில் புதுக்கோட்டை மாவட்ட ஆட்சியரால் **15.11.2023 மாலை 5.00** மணி வரையிலும் வரவேற்கப்படுகிறது.

(ஆ) திறந்த முறை ஏலம் மற்றும் மறைமுக டெண்டர் உறைகள் திறப்பது ஆகிய நடைமுறைகள் புதுக்கோட்டை மாவட்ட ஆட்சியர் அலுவலக வளாகத்தில் உள்ள கூட்ட அரங்கில் **16.11.2023** அன்று காலை **11.00** மணிக்கு தொடங்கி நடத்தப்படும்.

பகுதி – I மனு செய்வதற்கான நிபந்தனைகள்

1. இவ்வறிக்கை தொடர்பாக குவாரி குத்தகை கோரும் டெண்டர் மனுக்கள் 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் இணைப்பு VI-ல் கண்டுள்ள படிவத்தில் அசல் மற்றும் இரண்டு நகல்களுடன் கொடுக்கப்பட வேண்டும். அதன் மாதிரிப்படிவம் இவ்வறிக்கையின் கடைசியில் இணைக்கப்பட்டுள்ளது. பிற்சேர்க்கையில் பிரசுரிக்கப்பட்டுள்ள படிவம் VI-ன்படி பூர்த்தி செய்து அனுப்பப்படாத விண்ணப்பங்கள் ஏற்றுக்கொள்ளப் படமாட்டாது. மேற்படி படிவம் VI-ன் படி உரிய இணைப்புகளுடன் இல்லாத விண்ணப்பங்கள் மாவட்ட ஆட்சியரால் நிராகரிக்கப்படும்.

2. இந்த அறிவிக்கையின் இறுதியில் கண்டுள்ள அட்டவணையில் கொடுக்கப்பட்ட ஒவ்வொரு இனத்திற்கும் தனித்தனியாக மனுக்கள் கொடுக்கப்பட வேண்டும்.

3. டெண்டர் மனுவுடன் கீழ்கண்ட ஆவணங்கள் அசல் மற்றும் இரண்டு நகல்களில் முறையே அசல் மற்றும் நகல் மனுக்களுடன் இணைத்து கொடுக்கப்பட வேண்டும்.

(அ) திரும்பப்பெற இயலாத விண்ணப்ப படிவ கட்டணமான ரூ.1500/-ஐ அரசு கருவூலத்தில் செலுத்திய சலான் மனுவுடன் இணைக்க வேண்டும் அல்லது ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில், வங்கி வரைவோலை (Demand Draft) "மாவட்ட ஆட்சியர், புதுக்கோட்டை" என்ற பதவி குறிப்பிட்டு எடுத்து இணைக்கப்பட வேண்டும்.

(ஆ) பிணை வைப்புத் தொகையாக (Earnest Money Deposit) ரூ.25,000/- மட்டும் மாவட்ட ஆட்சியர், புதுக்கோட்டை என்ற பெயருக்கு ஏதேனும் ஒரு தேசிய மயமாக்கப்பட்ட வங்கியில் வங்கி வரைவோலை (Demand Draft) பெற்று மனுவுடன் இணைக்கப்பட வேண்டும். தனி நபர் பெயருக்கு எடுத்துக் கொடுக்கப்படும் வங்கி வரைவோலை ஏற்றுக்கொள்ளப்பட மாட்டாது.

(இ) டெண்டர் மனுதாரர், தான் மறைமுகமாக குறிப்பிடும் அதிகபட்ச டெண்டர் தொகையில் 10 சதவீதம் தொகைக்கான வங்கி வரைவோலையை (Demand Draft) ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் "மாவட்ட ஆட்சியர், புதுக்கோட்டை" என்ற பெயரில் மனுவுடன் இணைக்க வேண்டும்.

(ஈ) டெண்டர் மனுதாரர் தனியாகவோ அல்லது மற்றவருடன் கூட்டாகவோ இணைந்து தமிழ்நாட்டில் எந்தவொரு மாவட்டத்திலும் (i) ஏற்கனவே காலாவதியான குவாரி குத்தகை விபரம், (ii) நடப்பில் உள்ள குவாரி குத்தகை விபரம், (iii) குத்தகை

கோரி மனு செய்யப்பட்டு, நிலுவையில் உள்ள மனுக்கள் விபரம் மற்றும் (iv) தற்போதைய மனுவுடன் ஒரே நேரத்தில் வேறு பகுதியில் குத்தகை கோரும் மனுக்கள் விபரம் ஆகியவைகள் அடங்கிய ஆணை உறுதி ஆவணத்தை, சான்று உறுதி அலுவலரின் ஒப்புதல் பெற்று இணைக்க வேண்டும்.

(உ) டெண்டர் மனுதாரர் நிபந்தனை (ஈ) யில் கண்ட விபரப்படி ஏற்கனவே உள் மற்றும் வெளி மாவட்டங்களில் குவாரி குத்தகை பெற்றிருப்பவராயின் சுரங்க வரியினங்களான, ராயல்டி, சீனியரேஜ் தொகை, முடக்குவரி, பரப்புவரி, மாவட்ட கனிம அறக்கட்டளை நிதி மற்றும் அபராதம் ஏதேனும் விதிக்கப்பட்டிருப்பின் அந்த தொகைகளை செலுத்தியதற்கான "சுரங்க வரி நிலுவையில்லா சான்று" பெற்று ஒப்படைக்க வேண்டும்.

(ஊ) டெண்டர் மனுதாரர், வருமானவரி செலுத்துபவராக இருப்பின், செல்லுபடியாகத்தக்க வருமானவரிச் சான்று பெற்று ஒப்படைப்பதுடன் (i) நாளது தேதிவரை வருமான வரி தொடர்பான கணக்குகளை அத்துறைக்கு சமர்ப்பித்ததாகவும், (ii) 1961-ம் ஆண்டு வருமான வரிச் சட்டத்தின்படி சுய கணக்கீடு செய்து அதன் அடிப்படையில் வருமான வரி செலுத்தியதாகவும் குறிப்பிட்டு, ஆணை உறுதி ஆவணத்தில் ஒப்பமிட்டு சான்று உறுதி அலுவலரின் ஒப்புதல் பெற்று மனுவுடன் இணைக்க வேண்டும்.

(எ) மேற்கண்ட ஆணை உறுதி வாக்குமூலங்கள் (Affidavit) ரூ.20/- மதிப்புள்ள முத்திரைத்தாள்களில் நோட்டரி பப்ளிக் முன்பு கையொப்பமிட்டதாக இருக்க வேண்டும்.

4. மேற்கண்ட இணைப்புகளுடன், அசல் மனு மற்றும் இரண்டு நகல்கள் ஆகியவற்றை எழுத்துக்கள் தெரியாத வகையில் உள்ள காகித உறையிலிட்டு, அதில் வேண்டிய இடங்களில் அரக்கு கொண்டு சீல் வைத்து பின்னர் உறையின் மேல் அட்டவணையில் கண்ட குவாரி வரிசை எண், கிராமம் மற்றும் புல எண்ணைக் குறிப்பிட்டு, குத்தகை கோரும் டெண்டர் மனு என்று தலைப்பிட்டும், அதன் கீழ் டெண்டர் மனுதாரரின் பெயர் மற்றும் சரியான முகவரி எழுதியும், பெறுநர், "மாவட்ட ஆட்சியர், புதுக்கோட்டை மாவட்டம்" என்று தெளிவாகவும் எழுதி கீழ் குறிப்பிடப்பட்ட அலுவலருக்கு **15.11.2023 அன்று மாலை 5.00** மணிக்குள் கிடைக்குமாறு அனுப்பி வைக்க வேண்டும்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியர் அலுவலகம்,
புதுக்கோட்டை.

5. நேரடியாக அலுவலகத்தில் கொடுக்கப்படும் முத்திரை இடப்பட்ட டெண்டர் உறைகளை பெற்றுக் கொண்டமைக்கான தமிழ்நாடு சிறுகனிம சலுகை விதிகள், 1959-ன் பின்னிணைப்பு IX-ல் கண்ட படிவத்தில் ஒப்புதல் கடிதம் வழங்கப்படும். பதிவுத்தபாலில் அனுப்பி வைக்கப்படும் உறைகளுக்கு, அவை அலுவலகத்தில் கிடைக்கப்பெறும் நாளிலிருந்து மூன்று தினங்களுக்குள் ஒப்புதல் கடிதம் அனுப்பி வைக்கப்படும்.

6. குறிப்பிட்ட காலக்கெடு முடிந்த பின்னர், அலுவலரால் பெறப்படும் முத்திரை வைத்த டெண்டர் உறைகள் மற்றும் உறையின் மீது பெறுநர் "மாவட்ட ஆட்சியர், புதுக்கோட்டை மாவட்டம்" எனக் குறிப்பிடப்படாத டெண்டர் உறைகள் ஏற்றுக்கொள்ளப்படாமலேயே டெண்டர் மனுதாரருக்கு திருப்பப்படும்.

7. டெண்டர் விண்ணப்பப்படிவத்தில் மனுச் செய்யும் நபர்கள் தாங்கள் மனுச் செய்யும் குவாரிக்கு குத்தகையாகச் செலுத்த விரும்பும் தொகையை விண்ணப்பத்தில் குறிப்பிடாமல் இருந்தாலோ, அல்லது பிணை வைப்புத் தொகைக்கான காசோலைகளை விண்ணப்பத்தில் இணைக்காமல் இருந்தாலோ, விண்ணப்பதாளில் விண்ணப்பதாரர் தன் கையொப்பம் செய்யாமல் இருந்தாலோ, தமிழ்நாடு சிறு கனிம சலுகை விதிகளில் கூறப்பட்ட ஆணை உறுதி வாக்கு மூலங்கள் எதுவும் இணைக்கப்படாமல் இருந்தாலோ, மேற்படி டெண்டர் விண்ணப்பம் மாவட்ட ஆட்சியரால் அல்லது அவரால் அங்கீகரிக்கப்பட்ட அலுவலரால் நிராகரிக்கப்படும்.

8. மேற்குறிப்பிட்டவாறு விண்ணப்பம் நிராகரிக்கப்பட்ட டெண்டர் விண்ணப்பதாரர்களுக்கு டெண்டர் திறக்கும் சமயத்தில் அவர் இருந்திருப்பின் மாவட்ட ஆட்சியர் அல்லது அவரது அங்கீகாரம் பெற்றுள்ள அலுவலரால் விண்ணப்பதாரரிடம் தக்க ஒப்புதல் பெற்று காசோலை திருப்பி வழங்கப்படும். டெண்டர் திறக்கும் சமயத்தில் ஆஜரில் இல்லாத நபருக்கு பதிவஞ்சல் கடிதத்தில் கேட்பு காசோலை (Demand Draft) தனியே அனுப்பி வைக்கப்படும். ஆனால் அவ்வாறான விண்ணப்பதாரர் ஏலத்தில் அதிகத் தொகைக்கு ஏலம் கேட்டிருந்து, ஏற்கனவே பிணை வைப்புத் தொகையும் செலுத்தியிருப்பின் அவரது விண்ணப்பம் ஏற்றுக் கொள்ளப்படும்.

9. முன் குறிப்பிடப்பட்ட நிபந்தனைகளின்படி பெறப்பட்ட டெண்டர் உறை அனுப்பிய மனுதாரர்கள் டெண்டர் உறைகள் திறக்கப்படும் போது ஏல அரங்கில் இருக்க அனுமதிக்கப்படுவர்.

10. அலுவலரால் பெறப்பட்ட முத்திரை இடப்பட்ட டெண்டர் உறைகள் திறக்கப்படுவதற்கு முன் இந்த அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள அட்டவணையில் குறிப்பிடப்பட்ட ஒவ்வொரு இனங்களுக்கும் திறந்த முறை பொது ஏலம் **16.11.2023 அன்று காலை 11.00** மணியளவில் தொடங்கி தொடர்ந்து நடத்தப்படும்.

பகுதி – II திறந்த முறை பொது ஏலத்தில் கலந்து கொள்வதற்கான நிபந்தனைகள்

1. பொது ஏலத்தில் கலந்து கொள்ள விரும்புபவர் பகுதி I-ல் குறிப்பிடப்பட்டவாறு மனு மற்றும் ஆவணங்களை அசல் மற்றும் இரண்டு நகல்களுடன் ஏல நாளான **16.11.2023 அன்று காலை 11.00** மணிக்கு ஒவ்வொரு கல்குவாரிக்கும் பொது ஏலம் நடக்கும் போது நேரிடையாக பொது ஏலத்தில் கலந்து கொள்ளலாம்.

2. திறந்த முறை ஏலத்தில் கலந்து கொள்ள மனு கொடுப்போர், மனுவின் இனம் 9-ல் கண்டுள்ள வினாவில் டெண்டர் / கேட்புத் தொகை குறிப்பிடத் தேவையில்லை.

3. மூடி முத்திரையிடப்பட்ட உறையின் மூலம் டெண்டர் மனு கொடுத்துள்ள நபர் இரண்டாம் முறையாக மனு கொடுக்க தேவையில்லை. ஆனால் அவர்கள் நேரடியாக திறந்தமுறை பொது ஏலத்திலும் கலந்து கொள்ளலாம்.

4. முத்திரை இடப்பட்ட டெண்டர் உறை கொடுத்துள்ள மனுதாரர் மற்றும் பொது ஏலத்தில் கலந்து கொள்ள உள்ள மனுதாரர் ஆகியோர், பொது ஏலத்தில் கலந்து கொள்ள இயலாத நிலையில் அவர்களது நியமனம் பெற்ற மற்றொரு நபர் மனுதாரரின் ஒப்புதல் கடிதம் பெற்று அதனை சான்று உறுதி அலுவலரின் மேலொப்பம் பெற்று அதனையும், விண்ணப்பம் கொடுத்ததற்கான அலுவலரிடமிருந்து பெறப்பட்ட அசல் ஒப்புதல் கடிதத்தையும் ஏலம் நடத்தும் அலுவலரிடம் ஒப்படைத்துவிட்டு, ஏலத்தில் கலந்து கொள்ள வேண்டும். ஏலம் முடிவடைந்தவுடன் அலுவலர் கொடுத்த ஒப்புதல் கடிதம் மட்டும் திரும்ப ஒப்படைக்கப்படும்.

5. (அ) மாவட்ட ஆட்சியரோ அல்லது அவரது அதிகார அனுமதி பெற்ற அலுவலரோ குவாரி குத்தகை தொடர்பாக திறந்தமுறை ஏலம் நடத்துவார். அப்போது திறந்தமுறை ஏலத்திற்கு மனு கொடுத்தவர்கள் மற்றும் டெண்டர் உறை கொடுத்தவர்களும் தான் கொடுக்க விரும்பும் ஏலத்தொகையை கூற அனுமதிக்கப்படுவர்.

(ஆ) மனுதாரர் அல்லது அவரது அதிகாரம் பெற்ற நபர் யாரேயினும் ஏலத்தில் கலந்து கொள்ளாதபோதும், ஏலம் நடத்தப்பட்டு டெண்டர் உறைகள் திறக்கப்பட்டு விதிமுறைகளின்படி, மேல்நடவடிக்கை தொடரப்படும்.

6. ஏலம் முடிந்தபின் ஏலம் நடத்தும் அலுவலர், திறந்தமுறை ஏலத்திற்கு பெறப்பட்ட மொத்த மனுக்களின் எண்ணிக்கை மனு கொடுத்துள்ளவர்களின் பெயர், அதிகபட்சமாக கூறப்பட்ட ஏலத் தொகையை குறிப்பிட்டு ஏலம் கூறிய நபர் மற்றும் முகவரி ஆகியவற்றை ஏலம் நடத்தப்படும் இடத்திலேயே அறிவிப்பார்.

7. பின்னர் குத்தகை கோரி பெறப்பட்ட எல்லா மூடி முத்திரை இடப்பட்ட டெண்டர் உறைகளும் திறக்கப்பட்டு, அவற்றில் உள்ள மனுக்கள், ஏலதாரர்கள் மற்றும் டெண்டர்தாரர்கள் முன்னிலையில் ஆய்வு செய்யப்படும்.

8. பகுதி–I-ல் கண்ட நிபந்தனை 3-ல் குறிப்பிடப்பட்டுள்ள ஆவணங்கள் மற்றும் தொகைக்கான வரைவோலைகள் இணைக்கப்படாத மனுக்களும், மனுவின் இனம் 9-ல் டெண்டர் தொகைக்கான குறிப்பிடாத மனுக்களும், டெண்டர்தாரரின் கையொப்பம் இடப்படாத மனுக்களும் தவறான விபரங்கள் எழுதப்பட்ட மனுக்களும் செல்லத்தகாதவை என்று முடிவு செய்யப்பட்டு ஏலக்கூட்டத்திலேயே அறிவிக்கப்படும். இதற்கான தனியே எழுத்து மூலமாக ஆணை ஏதும் பிறப்பிக்கப்பட மாட்டாது. இதுபற்றி மனுவின் மீது விபரம் எழுதப்பட்டு டெண்டர்தாரரின் ஒப்புதல் பெறப்படும்.

9. செல்லுபடியாகத்தக்க மனுக்கள் ஆய்வு செய்யப்பட்டு அவற்றில் அதிகபட்ச டெண்டர் தொகை குறிப்பிடப்பட்டுள்ள டெண்டர்தாரரின் பெயர் மற்றும் முகவரி ஆகியவை ஏலக்கூடத்தில் அறிவிக்கப்படும்.

10. ஒவ்வொரு குவாரிக்கும் பெறப்பட்ட டெண்டர் விண்ணப்பங்களில் குறிப்பிடப்பட்டுள்ள அதிகபட்சமான குத்தகைத்தொகை அல்லது ஏலத்தின் மூலம் கேட்கப்படும் அதிகபட்ச ஏலத்தொகை இவற்றில் எது அதிகமோ அந்த தொகைக்கு டெண்டர்/ஏலம் கேட்ட நபர் குத்தகை பெற தகுதியானவர் என ஏல அரங்கில் மாவட்ட ஆட்சியர் அல்லது மாவட்ட ஆட்சியரால் அங்கீகரிக்கப்பட்ட அலுவலரால் அறிவிக்கப்படும்.

11. முதல் நிலை பொது ஏலத்தில் கூறப்பட்ட அதிகபட்ச ஏலத் தொகையைவிட அதிகமாக மறைமுக டெண்டர் முறையில் இரண்டு அல்லது அதற்கு மேற்பட்ட நபர்கள் ஒரே டெண்டர் தொகை குறிப்பிட்டிருந்தால் அவ்வாறு குறிப்பிட்ட டெண்டர்தாரர்களிடையே இரண்டாம் நிலை திறந்த முறை பொது ஏலம் நடத்தப்பட்டு, அதில் அதிகத்தொகை செலுத்த முன் வருபவர் குவாரி குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்படுவார்.

12. முதல் நிலை திறந்த முறை பொது ஏலத்தில் கூறப்பட்ட அதிகபட்ச ஏலத் தொகையையும் மறைமுக டெண்டர் முறையில், குறிப்பிட்ட அதிகபட்ச டெண்டர் தொகையும், ஒரே தொகையாக இருந்தால் அவ்விரு தொகைகளை கூறிய நபர்களிடையே இரண்டாம் நிலை திறந்த முறை ஏலம் நடத்தப்பட்டு அதில் அதிகத்தொகை செலுத்த முன்வருபவர் குவாரி குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்படுவர்.

13. (அ) அதிகபட்ச ஏலத் தொகை கோரி குவாரி குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்பட்ட நபர், அதிகபட்ச ஏலத் தொகையில் 10% சதவீத தொகையை உடனடியாக ஏலம் நடத்திய அலுவலரிடம் செலுத்தி ஒப்புதல் கடிதம் பெற்றுக் கொள்ள வேண்டும். மீதி 90% சதவீதத் தொகையை ஏலம் நடைபெறும் நாளிலிருந்து பதினைந்து நாட்களுக்குள் செலுத்தக் கோரி அறிவிப்பு ஒப்புதல் கடிதத்திலேயே குறிப்பிடப்பட்டிருக்கும்.

(ஆ) மேலே குறிப்பிட்டவாறு அந்தந்த குவாரிக்கான ஏலக்கேட்பு முடிவு செய்யப்பட்ட உடன் 10% சதவீத தொகை செலுத்தாத பட்சத்தில் அந்த நபரால் ஏற்கனவே அரசுக்கு வங்கி வரைவோலை மூலம் செலுத்தியுள்ள தொகைகள் அரசுடமையாக்கப்படும்.

14. (அ) நிபந்தனை 13-ன்படி அதிகபட்ச ஏலத் தொகை கூறி குத்தகை பெறத் தகுதியானவர் என்று அறிவிக்கப்பட்ட நபர் உடனடியாக 10% சதவீத தொகை செலுத்தாத நிலையில், அவருக்கு அடுத்தபடியாக அதிக ஏலத் தொகை அல்லது டெண்டர் தொகை குறிப்பிட்ட நபரின் ஏலத்தொகை ஏற்புடையதாக இருக்கும் பட்சத்தில் குத்தகை பெறத் தகுதியானவர் என்று அறிவிக்கப்பட்டு அவர் குறிப்பிட்டுள்ள குத்தகைத் தொகையில் பத்து சதவீதத் தொகையை உடனே செலுத்துமாறு கோரப்படுவார். உரிய தொகையை அவர் அரசுக்குச் செலுத்தினால் அவர் குத்தகை பெறத் தகுதியானவர் என்று அறிவிக்கப்படுவார்.

(ஆ) மேற்கண்டவாறு குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்பட்ட இரண்டாவது நபரும் 10% சதவீத தொகை செலுத்தாத போது மேற்கண்ட வழிமுறையை மாவட்ட ஆட்சியர் மீண்டும் நடைமுறைப்படுத்தலாம் அல்லது ஏலத் தொகை ஏற்புடையது அல்ல என்று மாவட்ட ஆட்சியர் கருதினால் உரிய குவாரியை மறு டெண்டர் / ஏலம் மூலம் குத்தகைக்கு விடலாம்.

15. குவாரி குத்தகை பெற தகுதியானவர் பெயர் அறிவிக்கப்பட்ட பின்னர், இதர மனுதாரருக்கு வரைவோலையை திரும்ப வழங்க பின்னர் நடவடிக்கை எடுக்கப்படும்.

16. (அ) குத்தகை பெற தகுதியானவர் என்று அறிவிக்கப்பட்ட நபர் நிலுவையிலுள்ள 90% சதவீத குத்தகைத் தொகையை ஏலம் நடைபெறும் நாளிலிருந்து **15 நாட்களுக்குள்** அதனை அரசுக்கு செலுத்த வேண்டும்.

(ஆ) உயர்ந்த பட்ச ஏலதாரர்/டெண்டர்தாரர் என அறிவிக்கப்படும் நபர் குத்தகை தொகை செலுத்துவதுடன், குத்தகை தொகைக்கு உண்டான வருமான வரி 2% செலுத்தப்படவேண்டும். செலுத்தப்பட்ட வருமானவரிக்கு 10% கூடுதல் வரி செலுத்தப்பட வேண்டும். மேலும் செலுத்தப்பட்ட வருவானவரி மற்றும் கூடுதல் வரிக்கு 3% தீர்வை செலுத்தப்படவேண்டும்.

(இ) மேற்குறிப்பிட்ட 90% சதவீதத் தொகை குறிப்பிட்ட காலத்திற்குள் செலுத்தப்படாவிட்டால், குத்தகை கோரும் நபர் ஏற்கனவே செலுத்தியுள்ள 10 சதவீத தொகை மற்றும் முன்வைப்பு தொகையான ரூ.25,000/- ஆகியவை அரசுடமையாக்கப்படும்.

(ஈ) நிபந்தனை 16(அ)-ன்படி குத்தகைத் தொகை செலுத்தப்படாதபோது தொகை செலுத்தக் கோரப்பட்ட நபருக்கு அடுத்தபடியாக அதிக தொகை செலுத்த டெண்டர் / ஏலம் கூறிய நபர் குத்தகை பெறத் தகுதியானவர் என்று எழுத்து மூலம் அறிவிக்கப்பட்டு அவர் கூறிய மொத்த ஏலத்தொகையை பத்து நாட்களுக்குள் அரசுக்கு செலுத்துமாறு கோரப்படும்.

(உ) நிபந்தனை 16(இ)-ன்படியும் கோரப்பட்ட குத்தகைத் தொகை செலுத்தப்படா விட்டால், தொடர்புடைய கல்குவாரி டெண்டர் / பொது ஏலம் மூலம் குத்தகைக்கு விட மறு அறிவிப்பு செய்யப்பட்டு நடவடிக்கை தொடரப்படும்.

17. (அ) குவாரி குத்தகை கோரி ஒரே ஒரு மறைமுக டெண்டர் மனு கொடுக்கப்பட்டு திறந்த முறை பொது ஏலத்தில் கலந்து கொள்ள யாரும் முன்வரவில்லையெனில், டெண்டர் தொகை அரசுக்கு ஆதாயமானது என்று மாவட்ட ஆட்சியர் கருதினால், அந்த டெண்டர் மனுதாரருக்கு குவாரி குத்தகை வழங்க மாவட்ட ஆட்சியர் ஒப்புதல் அளிக்கலாம். டெண்டர் தொகை அரசுக்கு ஆதாயமானதல்ல என்று மாவட்ட ஆட்சியர் கருதும் பட்சத்தில், மனுவைத் தள்ளுபடி செய்து ஆணையிடப்பட்டு மறு ஏலத்தின் மூலம் குவாரி குத்தகை வழங்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

(ஆ) இரண்டு அல்லது அதற்கு அதிகமான மனுக்கள் பெறப்பட்டாலும் கூட அதிகபட்ச டெண்டர் / ஏலத்தொகை அரசுக்கு ஆதாயமானதல்ல என்று மாவட்ட ஆட்சியர் கருதினால் மனுவை தள்ளுபடி செய்து மறு ஏலம் நடத்த மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

பகுதி – III குவாரி குத்தகை பெறுவதற்கான நிபந்தனைகள்

1. (அ) தமிழ்நாட்டில் எல்லா மாவட்டங்களிலும் சேர்த்து ஒரு மனுதாரருக்கு இரண்டு கல்குவாரி குத்தகைக்கு மேல் வழங்கப்பட மாட்டாது. தவறான தகவல் தந்து இரண்டுக்கு மேற்பட்ட குத்தகைகள் பெறப்பட்டிருப்பது பின்னர் தெரியவந்தால் கடைசியாக கொடுக்கப்பட்ட குத்தகையை ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.

(ஆ) குவாரி உரிமம் பெறுவது தொடர்பாக உயர்ந்தபட்ச டெண்டர் / ஏலதாரர் குத்தகை தொகையைச் செலுத்தி அதற்குரிய சலானை மாவட்ட ஆட்சியரிடம் ஒப்படைத்த பின்பு குவாரி உரிமம் வழங்க உத்தேசிக்கப்பட்டுள்ள பரப்பாக கருதி அறிவித்து குறிப்பாணை வழங்கப்படும்.

(இ) மேற்படி குறிப்பாணையை பெற்ற அதிக தொகை செலுத்த டெண்டர் / ஏலம் கோரிய நபர் தகுதியான சுரங்கத்திட்ட அறிக்கையை அங்கீகரிக்கப்பட்ட (RQP) நபரிடமிருந்து தயார் செய்து சம்பந்தப்பட்ட உதவி இயக்குநரின் ஒப்புதலுக்கு 90 நாட்களுக்குள் சமர்ப்பிக்க வேண்டும்.

(உ) உயர்ந்தபட்ச டெண்டர் / ஏலதாரர் சமர்ப்பித்த சுரங்கத்திட்டத்தினை பரிசீலனை செய்து திட்டத்தில் மாற்றம் இருப்பின் திருத்தி அமைக்கும் பொருட்டும் சுரங்கத்திட்டம் புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநரால் ஒப்புதல் செய்யவும், சுரங்கத்திட்டம் பெறப்பட்ட நாளிலிருந்து 90 நாட்கள் கால அவகாசமாகும்.

(ஊ) சம்பந்தப்பட்ட உதவி இயக்குநரால் ஒப்புதல் செய்யப்பட்ட சுரங்கத்திட்ட அறிக்கையை அதிக தொகை செலுத்த டெண்டர் / ஏலம் கூறிய நபர் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று கோரி விண்ணப்பித்து தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மாவட்ட ஆட்சித்தலைவர் அவர்களால் அதிக தொகை செலுத்த டெண்டர் / ஏலம் கூறிய நபருக்கு குவாரி உரிமம் வழங்க நடவடிக்கை எடுக்கப்படும்.

(எ) உரிய காலக்கெடுவிற்குள் உயர்ந்தபட்ச டெண்டர் / ஏலதாரர் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கத் தவறும் பட்சத்தில் மாவட்ட ஆட்சித்தலைவர் அவர்களால் மேற்படி ஆணையை இரத்து செய்ய நடவடிக்கை மேற்கொள்ளப்படும்.

(ஏ) குவாரி குத்தகை வழங்குவதற்கு ஒப்புதல் அளித்து குவாரி குத்தகை ஒப்பந்தம் நிறைவேற்றுவது தொடர்பாக தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் பின்னிணைப்பு 1-ல் கண்டுள்ள படிவத்தில் ஒப்பந்த கருத்துகளில் சேர்க்கை, நீக்கம் மற்றும் மாற்றங்கள் செய்யப்பட்ட வரைவு ஒப்பந்தம் மற்றும் குத்தகை பரப்பைக் காட்டும் புலப்பட நகலும் மனுதாரரின் ஏற்புக்கு அனுப்பப்படும்.

(ஐ) மாவட்ட ஆட்சியரால் குறிப்பிடப்படும் காலக்கெடுவிற்குள் மனுதாரர் கீழ்கண்ட ஆவணங்கள் மற்றும் தொகைகளை செலுத்தி அவற்றை மாவட்ட ஆட்சியரிடம் ஒப்படைக்க வேண்டும்.

i) மொத்த குத்தகை தொகையில் 20 சதவீத தொகையை காப்புத் தொகையாக உரிய தலைப்பில் செலுத்தியமைக்கான சலான்.

ii) மாவட்ட ஆட்சியரின் அறிவிக்கையில் கோரியுள்ளவாறு நீதிமன்றம் சாரா முத்திரைத்தாள் ஒப்பந்த ஆவணம் தயாரிக்கும் பொருட்டு கொடுக்கப்பட வேண்டும்.

2. (அ) உரிய காலக்கெடுவுக்குள் முன் குறிப்பிடப்பட்ட காப்புத் தொகையை அரசுக்குச் செலுத்தி ஆவணங்களை மாவட்ட ஆட்சியரிடம் ஒப்படைக்காத நபருக்கு ஏற்கனவே குவாரி குத்தகை வழங்கப்படும் என்று ஏற்கனவே கொடுக்கப்பட்ட அறிவிப்பு ரத்து செய்யப்பட்டு அந்த நாள்வரை அவரால் செலுத்தப்பட்ட தொகைகள் மற்றும் ஆவணங்கள் அரசுடமையாக்கப்படும்.

(ஆ) மேற்கண்டவாறு குத்தகை அறிவிப்பினை ரத்து செய்யப்பட்டால், ரத்து ஆணை பெற்ற நபருக்கு அடுத்தபடியாக அதிகத் தொகை செலுத்த டெண்டர்/ஏலம் கூறிய நபருக்கு குத்தகை வழங்க முன்கண்ட நிபந்தனை I-ன்படி நடவடிக்கை தொடரப்படும்.

(இ) குத்தகை வழங்க அறிவிப்பு செய்யப்பட்ட இரண்டாவது நபரும் முழு குத்தகைத் தொகை, காப்புத் தொகை, முத்திரைத்தாள், பரப்புவரி ஆகியவற்றை மாவட்ட ஆட்சியரின் அறிவிக்கையைப் பெற்றுக் கொண்ட பத்து நாட்களுக்குள் செலுத்தவில்லையெனில் உரிய குவாரி மறு டெண்டர்/ஏலம் மூலம் குத்தகைக்கு விடப்பட நடவடிக்கை எடுக்கப்படும்.

3. (அ) கோரப்படும் ஆவணங்களை மற்றும் தொகைகளை குத்தகை பெறவுள்ள மனுதாரர் அரசுக்குச் செலுத்தியபின், அறிவிக்கை மூலம் தெரிவிக்கப்படும் நாளில் மேற்படி குத்தகைதாரர் மாவட்ட ஆட்சியரின் முன்பு ஆஜராகி குத்தகை ஒப்பந்த ஆவணங்களில் கையெழுத்திட்டபின் குத்தகையாளராக அறிவிக்கப்படுவார்.

(ஆ) குத்தகை ஒப்பந்தப்பத்திரம் மற்றும் குத்தகை புலப்படம் ஆகியவற்றை மேற்படி குத்தகையாளர் கையொப்பம் இட்ட பின்னர், அவைகளில் மாறுதல் செய்யவோ, அவற்றின் மீது மாற்றுக்கருத்து தெரிவிக்கவோ குத்தகைதாரர் அனுமதிக்கப்படமாட்டார்கள்.

4. (அ) குத்தகை காலம் ஏற்கனவே கல் உடைக்கப்பட்ட கல்குவாரிகளுக்கு ஐந்து ஆண்டுகள் மற்றும் கல் உடைக்கப்படாத கல்குவாரிகளுக்கு பத்து ஆண்டுகள் மட்டுமே. குத்தகை காலத்தின் ஆரம்பம் மற்றும் முடிவு தேதிகள் ஒப்பந்த ஆவணத்தில் தெளிவாக குறிப்பிடப்பட்டிருக்கும்.

(ஆ) ஒப்பந்த ஆவணத்தில் குறிப்பிட்டுள்ளபடி குத்தகை முடிவுறும் தேதிக்கு பின்னர் குத்தகை கால நீட்டிப்பு எந்த கோரிக்கையின் அடிப்படையிலும் செய்யப்படமாட்டாது.

(இ) குவாரி குத்தகையை புதுப்பிக்கக்கோரி மனு அளிக்கப்பட்டால் அது விசாரணையின்றி தள்ளுபடி செய்யப்படும்.

5. குவாரி குத்தகை ஒப்பந்தப் பத்திரத்தில் மாவட்ட ஆட்சியருடன் மனுதாரர் கையொப்பம் இடுவதற்கு முன் குத்தகை பரப்பில் உடைகல், ஜல்லி, கட்டக்கல் போன்ற கனிமங்கள் வெட்டியெடுத்தாரானால் அப்பணி குத்தகை பெறாமல் செய்ததாக கருதப்பட்டு விதிமுறைகளின்படி மேல்நடவடிக்கை தொடரப்படும்.

6. (அ) குவாரி குத்தகை காலம் முடிவடைந்தவுடன் குத்தகைதாரர் குத்தகை பரப்பை அரசுக்கு திரும்ப ஒப்படைத்து அதற்கான கடிதத்தை உரிய கிராம நிர்வாக அலுவலர் வசம் ஒப்புவித்து அதற்கான ஆணை உறுதி ஆவணம் தயாரித்து மாவட்ட ஆட்சியரிடம் ஒப்படைக்க வேண்டும்.

பகுதி – IV குவாரிப்பணி செய்வது தொடர்பான விதிமுறைகள்

1. (அ) குவாரிப்பணி செய்தவற்கான பொது விதிமுறைகள், மாவட்ட ஆட்சியருடன் குத்தகைதாரர் கையொப்பமிடும் குத்தகை ஆவணத்தில் குறிப்பிடப்பட்டிருக்கும்.

(ஆ) கல் குவாரி குத்தகைக்காலம் குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து அனுமதி காலமாக கருதப்படும்.

(இ) மேலும், 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் அனுபந்தம் 1ல் கண்ட நமுனாவில் உரிய முத்திரைத்தாளில் குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றி அதனை அவரது சொந்த செலவில் பதிவு செய்து கொடுக்க வேண்டும்.

(ஈ) செலுத்தப்பட்ட குத்தகை தொகை தவிர, தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் பின்னிணைப்பு II-ல் கண்டவாறு குவாரியிலிருந்து வெளியில் கொண்டு செல்லப்படும் கனிமத்திற்கு அரசால் அவ்வப்போது திருத்தி நிர்ணயிக்கப்படும் சீனியரேஜ் தொகை அல்லது ஒவ்வொரு ஆண்டிற்கான முடக்குவரி இவற்றில் எது அதிகமோ அது செலுத்தப்பட வேண்டும். அவ்வாறு செலுத்தப்படாவிட்டால் குவாரி குத்தகையை ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.

2. மேலும் ஒவ்வொரு தனி குத்தகை புலத்திற்கும், சிறப்பு நிபந்தனைகள் ஏதும் இருக்குமானால் அவைகள் மாவட்ட ஆட்சியரால் வழங்கப்படும் பணி அனுமதி ஆணையில் குறிப்பிடப்படும். குத்தகை பெற்றவர் அவ்வனுமதி ஆணையையும் ஏற்று நடக்க வேண்டும்.

3. மேற்குறிப்பிட்டவை தவிர பின்வரும் சிறப்பு நிபந்தனைகளும் குத்தகைதாரரால் குத்தகை காலத்தில் கடைபிடிக்கப்பட வேண்டும்.

i. குத்தகையாளர் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின்படி குவாரிப்பணி மேற்கொள்ள வேண்டும். தவறும் பட்சத்தில் தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி 41 (10) (ii)-ன்படி நடவடிக்கை மேற்கொள்ளப்படும்.

ii. அனுமதி பெற்ற வெடிபொருள் கையாலும் நபர்கள் மூலம் வெடிமருந்துகள் பயன்படுத்தவேண்டும். வெடிபொருட்கள் சட்டம் கண்டிப்பாக கடைப்பிடிக்கப்பட வேண்டும். குவாரியில் வெடி பொருட்கள் பயன்படுத்துவர் தொடர்பாக சென்னை மண்டல சுரங்க பாதுகாப்பு இயக்கக பொது இயக்குநர் அவர்களின் வழிகாட்டு நெறிமுறைகளை பின்பற்றி குறைந்த அழுத்தமுள்ள வெடிமருந்துகளை பயன்படுத்தி குவாரிப்பணி செய்ய வேண்டும்.

iii. குத்தகையாளர் குத்தகைப் பகுதியில் வெட்டியெடுத்து வெளியில் அனுப்பும் சிறுவகைக் கனிமத்திற்கு உரிய கணக்குகளை புதுக்கோட்டை மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநர் குறிப்பிடும் படிவத்தில் சுரங்க விபரப்பதிவேடு ஏற்படுத்தி விபரங்கள் எழுதி பிரதி மாதம் 5-ம் தேதிக்குள் தணிக்கைக்கு சமர்ப்பிக்க வேண்டும்.

iv. குத்தகை காலத்தில் ஏற்படுத்தப்பட்ட சுரங்க விபரப் பதிவேடுகளை குத்தகையாளர் குத்தகைக்காலம் முடிந்த பின்னரும் பாதுகாத்து அரசு அலுவலர்கள் ஆய்வுக்கு கேட்கும் போது ஒப்படைக்க வேண்டும்.

v. குத்தகையாளர் கனிமங்களை வெளியில் அனுப்ப அனுப்புகை சீட்டுகளில் (பில்புக்) உதவி இயக்குநர் ஒப்புதல் பெற வரும்போது, சீனியரேஜ் தொகையை செலுத்தி, அலுவலகத்திலிருந்து வழங்கப்படும் இசைவாணைச்சீட்டு மற்றும் அனுப்புகை சீட்டுகளில் உரிய அலுவலரின் மேலொப்பம் பெற்றுச் சென்று பயன்படுத்த வேண்டும்.

vi. கனிமங்களை குத்தகைப் பகுதியிலிருந்து வெளியில் அனுப்பும் போது அனுப்பப்படும் கனிமத்தின் வகை, அதன் அளவு, கனிமம் எடுத்துச் செல்லும் வாகனத்தின் வகை மற்றும் பதிவு எண், கனிமம் கொண்டு சேர்க்கப்படும் இடம், குவாரியிலிருந்து வாகனம் புறப்படும் நேரம் மற்றும் சென்றடைய உத்தேச நேரம் ஆகிய விபரங்களை அசல் சீட்டில் ஒரே பேனாவாலும் நகலை கார்பன் பேப்பர் அழுத்தம் மூலமும் எழுதி அசலை வாகனத்துடன் அனுப்பி நகலை (அடிக்கட்டு) அடுத்தமுறை அனுமதிபெற வரும்போது ஆய்வுக்கு காண்பித்துவிட்டு திரும்ப பெற்றுச் சென்று பாதுகாப்பாக வைத்திருக்க வேண்டும்.

vii. அனுப்புச் சீட்டில் எல்லா விபர வினாக்களுக்கும் விபரங்கள் எழுதப்படாமலோ அல்லது திருத்தப்பட்டோ அல்லது மேல் எழுத்தப்பட்டோ அல்லது வெவ்வேறு மையினால் எழுதப்பட்டிருப்பின் அந்த அனுப்புகைச் சீட்டுடன் எடுத்துச் செல்லப்படும் கனிமம், அனுமதியின்றி எடுத்துச் செல்லப்படுவதாக கருதி, விதிமுறைகளின்படி நடவடிக்கை எடுக்கப்படும்.

viii. குத்தகை பகுதிக்குச் சென்றுவர பாதைவசதி குத்தகைதாரர், தனது சொந்த பொறுப்பில் ஏற்படுத்திக் கொள்ள வேண்டும். கல்குவாரிப்பணியில் குழந்தை தொழிலாளர்களை பயன்படுத்தக்கூடாது.

ix. குவாரிகளுக்கு அருகில் உள்ள போக்குவரத்துச் சாலைகள், குடியிருப்பு வீடுகள், வண்டிப்பாதைகள், மின் கம்பங்கள், டிரான்ஸ்பார்மர்கள் மற்றும் இதர நிலையான அமைப்புகள் இவற்றிலிருந்து நிர்ணயிக்கப்பட்ட பாதுகாப்பு இடைவெளிவிட்டு மீதமுள்ள இடத்திற்குள்தான் குவாரி செய்யும் பணி செய்யப்பட வேண்டும். மேற்கண்ட அமைப்புகளுக்கு சேதம் ஏதும் நேரிட்டால் அதற்கு குத்தகைதாரரே முழுப் பொறுப்பேற்க வேண்டும். இந்நோ்வில் பாதுகாக்கப்பட்ட புராதனச்சின்னங்களிலிருந்து 300 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.

x. குத்தகைதாரரை மேற்குறிப்பிட்ட நிபந்தனைகளும் 1959-ஆம் ஆண்டைய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் மற்றும் சுரங்கங்கள் மற்றும் கனிமங்கள் (அபிவிருத்தி மற்றும் ஒழுங்குமுறை) சட்டம், 1957 மற்றும் அரசால் அவ்வப்போது கொண்டு வரப்படும் ஆணைகளும், விதிகளும் கட்டுப்படுத்தும்.

xi. கல்குவாரிகளிலிருந்து சாதாரண கல், சக்கைக்கல், கட்டுக்கல், ஜல்லிக்கற்கள், கலுக்கால் ஆகிய பொது உபயோக சிறு கனிமங்களை மட்டுமே குவாரி செய்ய வேண்டும். இவ்வனுமதியை பயன்படுத்தி வெளிநாட்டிற்கு ஏற்றுமதி செய்வதற்கும், அலங்கார வகை மற்றும் மெருகேற்றம் செய்வதற்கும் பயன்படும் வகையில் பெரிய/சிறிய கிரானைட் கற்துண்டங்களை வெட்டி எடுக்கக்கூடாது.

xii. குத்தகை விடப்படும் குவாரிகளை நீக்கவோ, புதிதாக சேர்க்கவோ, குவாரிப் பரப்பளவை மாற்றவோ, மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. நிர்வாக சூழல் காரணமாக ஏலத்தை ரத்து செய்ய மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

xiii. குத்தகை உரிமம் கோரும் முன் சம்பந்தப்பட்ட குவாரியினை நேரில் பார்வையிட்டு பாதை வசதி, கனிமத்தின் தரம், கனிமத்தின் இருப்பு ஆகியவற்றை ஆராய்ந்து பின்னர் குத்தகை உரிமம்கோரி விண்ணப்பிக்க வேண்டும். பின்னாளில் இது தொடர்பான எந்த ஒரு பின் நிகழ்வுக்கும் மாவட்ட நிர்வாகம்/அரசு பொறுப்பல்ல.

xiv. 1959-ஆம் ஆண்டு தமிழ்நாடு சிறு கனிம சலுகை விதிகள் அட்டவணை படிவம் 1-ல் கண்ட ஒப்பந்தப் பத்திரத்தில் தேவையான அளவுக்கு நிபந்தனைகளை புதியதாக சேர்க்கவோ, நீக்கவோ, மாற்றியமைக்கவோ மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகைப் பத்திரம் ஏற்படுத்திய பின்பு புலஎண் மற்றும் குவாரி செய்ய ஒதுக்கப்பட்ட பரப்பு குறித்து எவ்வித தாவாவும் செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.

xv. விண்ணப்பதாரர் குத்தகை தொகையைச் செலுத்தாமலும், செலுத்தியிருப்பின் முத்திரைத்தாளில் ஒப்பந்தப் பத்திரம் மாவட்ட ஆட்சியரிடம் நிறைவேற்றி சார்-பதிவாளர் அலுவலகத்தில் பதிவு செய்து தராமலும் குவாரிப் பணியை ஆரம்பிக்கக்கூடாது. அவ்வாறு செய்தால் கள்ளத்தனமாக குவாரி செய்ததாகக் கருதப்பட்டு 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளின்படி நடவடிக்கை மேற்கொள்ளப்படும்.

xvi. ஒரு மனுதாரருக்கு மாநிலத்தில் இரு குவாரி குத்தகைக்கு மேல் குத்தகை வழங்கப்பட மாட்டாது.

xvii. மேற்படி சிறு கனிமங்கள் எடுக்கும் இடத்தில் சிறு கனிமங்கள் எடுப்பதிலாவது அப்புறப்படுத்துவதிலாவது மேற்படி குத்தகைதாரருக்கு ஏற்படக்கூடிய யாதொரு நஷ்டங்களுக்கான சலுகை எதுவும் அரசினரால் அளிக்கப்பட மாட்டாது.

xviii. டெண்டர் அறிவிக்கை பிரசுரிக்கப்பட்ட பின்னரோ அல்லது குத்தகை உறுதி ஆணை பிறப்பிப்பதற்கு முன்னரோ நிபந்தனைகளை மாற்றவோ அல்லது ரத்துச் செய்யவோ மற்றும் பட்டியலில் கண்டுள்ள எல்லா குவாரிகளுக்கும் குத்தகை உரிமம் கோரும் டெண்டர் மனுக்களை எக்காரணத்தையும் காட்டாமல் இரத்து செய்யவோ அல்லது மூடி முத்திரையிட்ட உறைகளை திறக்கும் நாள், நேரம் ஆகியவைகளைத் தள்ளி வைக்கவோ, நிறுத்தி வைக்கவோ மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

xix. டெண்டர் விளம்பரத்தின்படி ஏதாவது காரணத்தால் மூடி முத்திரையிடப்பட்ட உறைகள் திறக்கும் நாள் மற்றும் நேரம் ஆகியவை ஒத்தி வைக்க நேர்ந்தால் அதற்கு மனுதாரர்கள் நஷ்ட ஈடு கேட்க உரிமையில்லை. மனுதாரர் ஒவ்வொரு குவாரிக்கும் தனித் தனியே ஒரு ஒப்பந்தப்புள்ளி மனுவை உரிய இணைப்புகளோடு அனுப்ப வேண்டும். ஒரே மனுவில் ஒரு குவாரிக்கு மேல் பல குவாரிகளைக் குறிப்பிட்டு மனு செய்தால் அம்மனு நிராகரிக்கப்படும்.

xx. 1959-ஆம் ஆண்டு தமிழ்நாடு சிறு கனிம சலுகை விதிகளில் கண்டுள்ள அனைத்து சாரம்சங்களையும் மாவட்ட அரசிதழில் கண்டுள்ள அனைத்து நிபந்தனைகளையும் நன்கு தெரிந்து கொண்டபின் டெண்டர் மனுக்களை அனுப்ப வேண்டும். மனு அனுப்பிய பிறகு விதிகள் மற்றும் குத்தகை நிபந்தனைகள் பற்றி சரியாகத் தெரியாது என மனுதாரர் வாதிட்டால் அது ஏற்றுக் கொள்ளப்படமாட்டாது.

xxi. உறுதி செய்யப்பட்ட குத்தகை உரிமத்தை சம்பந்தப்பட்ட உயர் அலுவலர்கள் பொது நன்மையைக் கருதி ரத்துச் செய்ய நேரிட்டால் அதனால் ஏற்படும் இழப்புக்கு ஈடுகோர குத்தகைதாரருக்கு உரிமையில்லை.

xxii. குத்தகைதாரர் குவாரியை வேறு யாருக்கும் மாற்றவோ, உள்குத்தகைக்கு விடவோ கூடாது. அப்படி ஏதாவது செய்திருப்பது தெரியவந்தால் மேற்படி குத்தகை ரத்து செய்யப்படுவதுடன் அவர் செலுத்திய தொகையும் அரசுக்கு ஆதாயமாக்கப்படும்.

xxiii. குத்தகைக்கு விடப்பட்ட புலத்தில் புல வரைபடத்தில் வரையறை செய்யப்பட்டுள்ள இடத்திலும், விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்குக் கூடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் குத்தகை ரத்துச் செய்யப்படும்.

xxiv. அனுமதிக்கப்படாத பிற இடங்களில் முறைகேடாக குத்தகைதாரர் குவாரி செய்து அதனால் அவர் மீது வழக்கு தொடரப்பட்டாலோ, அல்லது அரசுக்கு நஷ்டம் ஏற்பட்டாலோ, வழக்கிற்கான செலவுத் தொகை அல்லது நஷ்டஈடு முழுவதும் குத்தகைதாரரிடமிருந்து வசூல் செய்யப்படும்.

xxv. குத்தகைதாரர் உரிய அனுப்புகைச் சீட்டை குத்தகைக்கு வழங்கப்பட்ட குவாரியில் இருந்துதான் வாகனங்களுக்கு கொடுத்தனுப்ப வேண்டும்.

xxvi. உரிய அதிகாரிகள் ஒப்புதல் பெறப்படாத அனுப்புகைச்சீட்டுடன் கொண்டு செல்லப்படும் சிறு கனிமங்கள் முறையற்ற வகையில் எடுத்ததாகக் கருதப்பட்டு உரிய சட்டத்தின்படி கைப்பற்றப்பட்டு அபராதம் விதிக்கப்படும்.

xxvii. புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்கள் அல்லது வருவாய்த்துறை அலுவலர்கள் முதலானோர் தணிக்கை செய்யும் போது உரிய கணக்குகள் மற்றும் அனுப்புகைச் சீட்டு முதலானவைகளை குவாரி உரிமம் பெற்றவர்கள் அவர்களுக்கு காண்பிக்க வேண்டும்.

xxviii. அனுப்புகைச் சீட்டில் உள்ள காலங்கள் பூர்த்தி செய்யப்படாமலோ அல்லது தவறாக எழுதப்பட்டோ அல்லது திருத்தங்களிடனோ வாகனங்களுக்கு கொடுக்கப்பட்டிருந்தால் குத்தகைதாரர் மற்றும் சிறு கனிமம் கொண்டு செல்லும் வாகன உரிமையாளர் ஆகியவர்களுக்கு அபராதம் விதிக்கப்பட்டு வசூல் செய்யப்படும்.

xxix. ஏலதாரர் ஒவ்வொரு நாளும் குவாரியில் எவ்வளவு சிறு கனிமங்கள் எடுக்கப்பட்டது என்பதையும், எந்த அளவு கனிமங்கள் லாரி/வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விவரத்தையும் காட்டும் பதிவேடு பராமரித்து வர வேண்டும்.

xxx. குவாரி செய்வதற்கு அனுமதிக்கப்பட்டுள்ள இடத்தில் மட்டும்தான் குவாரி செய்ய உரிமையுண்டு.

xxxi. அரசு மற்றும் மாவட்ட ஆட்சியரால் இது விஷயமாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அவ்வப்போது ஏற்படுத்தப்படும் சட்ட திட்டங்களுக்கும், நிபந்தனைகளுக்கும் குத்தகைதாரர் கட்டுப்பட்டு நடக்க வேண்டும்.

xxxii. குவாரியில் வேட்டு வைப்பதிலும், கட்டைப்போட்டு சுடுவதிலும் யாதொரு அபாயமும் நேரிடாமல் இருக்க வேண்டியதைப் பற்றி குத்தகைதாரர் உஷாராக இருக்க வேண்டியது. அப்படி வேட்டு வைப்பதிலோ அல்லது கட்டைப் போட்டு சுடுவதிலோ அரசு சொத்துக்களுக்காவது அல்லது பிறர் சொத்துக்களுக்காவது அல்லது வேறு எந்த நபருக்காவது அபாயம் அல்லது சேதம் நேர்ந்தால் குத்தகைதாரர் அவ்விதம் நேரக்கூடிய சேதங்களை தங்கள் செலவிலேயே நிவர்த்தி செய்து கொடுக்க வேண்டியதோடு, அந்த நபருக்கு நஷ்ட ஈடு கொடுக்க குத்தகைதாரர் கடமைப்பட்டவர் ஆவார்.

xxxiii. குவாரியில் வேலை செய்யும் தொழிலாளர்களுக்கும் மற்றும் இதர நபர்களுக்கும் விபத்து ஏற்பட்டால் அதற்கு அரசு பொறுப்பல்ல. முழுப்பொறுப்பும் குத்தகைதாரரைச் சேரும்.

xxxiv. குத்தகை பகுதிக்குச் சென்றுவர பாதைவசதி குத்தகைதாரர், தனது சொந்த பொறுப்பில் ஏற்படுத்திக் கொள்ள வேண்டும்.

xxxv. அருகில் அமைந்துள்ள விவசாய நிலங்களுக்கு எவ்வித பாதிப்பும் இல்லாத வகையில் குவாரிப்பணி மேற்கொள்ள வேண்டும்.

xxxvi. தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரிய இசைவாணையை குவாரிப்பணி தொடங்கும் முன் பெற்று சமர்ப்பிக்க வேண்டும்.

xxxvii. குத்தகை எடுத்தவர் குத்தகையை அனுபவிக்காவிட்டாலும், செலுத்தப்பட்ட குத்தகைத் தொகை எக்காரணத்தை முன்னிட்டும் வாபஸ் செய்யப்படமாட்டாது.

xxxviii. குவாரியில் எல்லைகள் பற்றிய பிரச்னைகள் ஏற்பட்டால் மாவட்ட ஆட்சியரின் தீர்ப்பே இறுதியானது.

xxxix. குத்தகைக்காலம் முடிந்தபின் குத்தகைதாரர்கள் குத்தகைக்கு விடப்பட்ட பகுதிகளில் எந்தவிதமான உரிமையும் கொண்டாடக்கூடாது.

xl. குவாரி குத்தகை வழங்குவது, மற்றும் சம்பந்தப்பட்ட எவ்வித நடவடிக்கைகளும் மாவட்ட ஆட்சியர் அவர்களின் முடிவுக்கு கட்டுப்பட்டதாகும்.

xli. டெண்டரில் கோரப்படும் கல்குவாரிகளின் பேரில் நீதிமன்றத்தில் ஆணை/தடையாணை பெறப்பட்டால் சம்பந்தப்பட்ட குவாரிக்கு குத்தகை உரிமம் வழங்குவது குறித்து மாவட்ட ஆட்சியரின் முடிவே இறுதியாகும்.

xlii. குத்தகைக்கு எடுத்தவர் எந்த காரணத்தை முன்னிட்டும் தனக்கு இழப்பு ஏற்பட்டதாக தெரிவித்து நஷ்டஈடு கேட்கக் கூடாது.

xliii. குத்தகைதாரர் குவாரியில் புல எண், பரப்பு, குத்தகைதாரர் பெயர், குத்தகை ஆணை எண், குத்தகை தொகை போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து பராமரிக்க வேண்டும்.

xliv. குத்தகைதாரர் குவாரியில் எல்லைகளை தெளிவாக தெரியும்படியாக கல் ஊன்றி அடையாளமிட்டு வைத்த பின் குவாரி செய்ய வேண்டும். எல்லைக்கற்களை குத்தகைக் காலம் முழுமைக்கும் நன்கு பராமரிக்க வேண்டும்.

xlv. குத்தகைக்கு வழங்கப்பட்ட குவாரிகளிலிருந்து அரசு வேலைகளுக்கு கனிமங்கள் வெட்டி எடுத்துச் செல்ல அரசுக்கு சகல உரிமையும் உண்டு.

xlvi. (அ) சிறப்பு நிபந்தனைகள்:

i. இந்த டெண்டர் மற்றும் ஏலமுறையில் கலந்து கொள்ளும் விண்ணப்பதாரர்கள் அனைவரும் இந்திய அரசின் வருமான வரித்துறையினரால் வழங்கப்படும் நிரந்தர கணக்கு எண். (PAN CARD) அட்டையை பெற்றிருக்க வேண்டும்.

ii. மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 2 சதவீத வருமான வரி தொகை செலுத்த வேண்டும்.

iii. மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது பங்களிப்பு தொகையான அதவாது 10 சதவீத தொகையை புதுக்கோட்டை மாவட்ட கனிம அறக்கட்டளையின் வங்கி கணக்கில் செலுத்த வேண்டும்.

iv. மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 10 சதவீத தொகையை பசுமை நிதி (Green Fund) செலுத்த வேண்டும்.

கல் குவாரி விவரம்

வ. எண்	வட்டம்	கிராமம்	புல எண்	பரப்பு (ஹெக்)	பழைய/புதிய குவாரி
1	குளத்தூர்	மேலூர்	207/8	0.90.00	பழையகுவாரி
2	குளத்தூர்	மேலூர்	207/4	0.97.00	புதிய குவாரி
3	குளத்தூர்	மேலூர்	211(பகுதி-1)	1.56.00	பழையகுவாரி
4	குளத்தூர்	மேலூர்	211 (பகுதி-2)	1.50.00	பழையகுவாரி
5	குளத்தூர்	மேலூர்	211 (பகுதி-3)	2.10.00	பழையகுவாரி
6	குளத்தூர்	மேலூர்	216/1	1.47.50	பழையகுவாரி
7	குளத்தூர்	சத்தியமங்கலம்	47/4 பகுதி	2.00.00	பழையகுவாரி
8	குளத்தூர்	இரும்பாளி	98/1, 98/2	0.78.00	பழையகுவாரி
9	குளத்தூர்	நார்த்தாமலை	94(பகுதி-1)	1.67.0	புதிய குவாரி
10	குளத்தூர்	நார்த்தாமலை	94(பகுதி-2)	1.50.0	புதிய குவாரி
11	குளத்தூர்	நார்த்தாமலை	94(பகுதி-3)	1.32.5	புதிய குவாரி
12	இலுப்பூர்	ஆரியூர்	17/2 & 17/4	0.76.50	புதிய குவாரி
13	இலுப்பூர்	மதியநல்லூர்	247(பகுதி)	1.00.00	பழையகுவாரி
14	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-1)	2.80.33	பழையகுவாரி
15	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-2)	2.28.30	பழையகுவாரி
16	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-3)	3.48.00	பழையகுவாரி
17	இலுப்பூர்	சித்தன்னவாசல்	94(பகுதி-4)	3.18.37	பழையகுவாரி
18	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-A)	1.50.00	புதிய குவாரி
19	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-B)	1.00.00	புதிய குவாரி
20	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-C)	1.00.00	புதிய குவாரி
21	இலுப்பூர்	கட்டக்குடி	203 (பகுதி-D)	1.00.00	புதிய குவாரி
22	பொன்னமராவதி	சாத்தனூர்	37/1 (பகுதி)	1.15.00	பழையகுவாரி
23	குளத்தூர்	பள்ளத்துப்பட்டி	6	1.20.00	பழையகுவாரி
24	விராலிமலை	விட்டமாப்பட்டி	81	0.77.50	பழையகுவாரி

இடம் : புதுக்கோட்டை
நாள் : 18.10.2023

ஐ.சா. மெர்சி ரம்யா,
மாவட்ட ஆட்சியர்,
புதுக்கோட்டை.

(லேசர் அச்சடிப்புகள் மாவட்ட ஆட்சியர், புதுக்கோட்டை மாவட்டம்)
தமிழ்நாடு அரசு எழுதுபொருள் மற்றும் அச்சுத் துறை இயக்குநரால், புதுக்கோட்டை அரசு கிளை அச்சகத்தில் அச்சிடப்பட்டு மாவட்ட ஆட்சியரால் வெளியிடப்பட்டது.

இணைப்பு VI

(தமிழ்நாடு சிறுவகைக் கனிமச் சலுகை விதிகள் 1959-ன் விதி 8-ஐக் காண்க)
குவாரி குத்தகை கோரும் டெண்டர்/ஏல விண்ணப்பம்
(அசல் மற்றும் இரண்டு நகல்களில் இணைப்புகளுடன் கொடுக்க).

அனுப்புநர்

அலுவலர் பயன்படுத்த

(அ) மனு பெறப்படும் நாள்

.....

(ஆ) பெறப்படும் இடம்

பெறுநர் ஒப்பம்

மாவட்ட ஆட்சியர்,
புதுக்கோட்டை மாவட்டம்,
புதுக்கோட்டை.

அய்யா,

மாவட்ட அரசிதழ் எண்.....நாள். .....அல்லது..... செய்தித்தாள் விளம்பர நாள்.....ல் வெளியிடப்பட்டுள்ளது தொடர்பாக, தமிழ்நாடு சிறுவகைக் கனிம சலுகை விதிகள் 1959 இன் விதி 8-ன் படி நான்/நாங்கள் இந்த விண்ணப்பத்தை சமர்ப்பிக்கிறேன்/சமர்ப்பிக்கிறோம்.

தேவையான விவரங்கள் கீழே கொடுக்கப்படுகிறது :

1. மனுதாரர் பெயர் மற்றும் முழு முகவரி :

2. (அ) மனுதாரர் தனி நபரா/தனியார் கம்பெனியா/ கூட்டு நிறுவனமா (அல்லது) கூட்டமைப்பா. :

   (ஆ) மனுதாரர் தனி நபரானால் எந்த நாட்டினர் :

   (இ) மனுதாரர் தனியார் கம்பெனி/வியாபார ஸ்தாபனம் அல்லது சங்கமாயின் அதன் இயக்குநர்/பங்குதாரர்கள்/உறுப்பினர்கள் எந்த நாட்டவர் என்ற விபரம் (சான்று இணைக்கப்படவேண்டும்) :

3. பிணை வைப்புத்தொகை செலுத்திய விவரம் (வங்கி கேட்பு வரைவோலை எண் மற்றும் நாள் ஆகிய விவரங்களை அளிக்கவும்). :

4. விண்ணப்பதாரர் கீழ்கண்ட விவரங்கள் அடங்கிய ஆணை உறுதி ஆவணம் அளித்துள்ளாரா? :

அ) நடப்பு தேதி வரையிலான வருமானவரி விவரப்பட்டியல் சமர்ப்பிக்கப்பட்டுள்ளதா? :

ஆ) மனுதாரருக்கு விதிக்கப்பட்ட வருமான வரி தொகையை செலுத்தியுள்ளாரா? மற்றும் :

இ) வருமான வரி சட்டம் 1961-ல் குறிப்பிட்டவாறு சுய மதிப்பீட்டின் அடிப்படையில் வருமான வரி செலுத்தியுள்ளாரா? :

5. மனுதாரர் எந்த சிறுவகைக் கனிமத்தைக் குவாரி செய்ய விரும்புகிறார் என்ற விபரம். :

6. கோரப்படும் குத்தகையின் கால அளவு :

7. குத்தகைக்கு கோரப்படும் இடத்தின் மொத்த பரப்பு :

8. டெண்டர் மனு அளித்துள்ள புலத்தின் விவரங்கள் :

மாவட்டம்	வட்டம்	கிராமம்	புல எண்	பரப்பு (ஹெக்டேரில்)
(1)	(2)	(3)	(4)	(5)

9. குவாரி குத்தகை பெற விரும்பும் மனுதாரர் அளிக்க விரும்பும் அதிகபட்ச டெண்டர் தொகை (எண்ணாலும், எழுத்தாலும் குறிப்பிடவும்) :

10. மனுதாரர் தமிழ்நாட்டில் ஏற்கனவே குவாரி அனுமதி பெற்றுள்ள இடங்கள் குறித்த விவரங்கள் :

11. அ) குவாரி நிலுவைத்தொகை செலுத்தியது தொடர்பாக சுரங்கவரி நிலுவையின்மை சான்று (தேவையெனில் இணைக்க). :

(ஆ) விண்ணப்பம் அளிக்கும் நாளில் விண்ணப்பதாரர் குவாரி குத்தகை அல்லது சுரங்க குத்தகை பெற்றிராவிட்டால் அது குறித்து ஆணை உறுதி ஆவணம் இணைக்கவும். :

12. விண்ணப்பதாரர் வேறு ஏதேனும் விவரம் : அளிக்க விரும்பினால் அது குறித்த விவரம்

நான் / நாங்கள் மேலே எங்களால் அளிக்கப்பட்ட விவரங்கள் உண்மையானவை என்று உறுதியளிக்கிறேன்/உறுதியளிக்கிறோம். நூான்/நாங்கள், அரசாங்கம் அல்லது மாவ்ட ஆட்சியர் அவர்களால் கோரப்படும் இதர விவரங்கள் மற்றும் காப்புத்தொகை ஆகியவற்றை அளிக்க தயாராக உள்ளேன்/உள்ளோம். தமிழ்நாடு சிறுவகைக் கனிமச் சலுவை விதிகள் 1959-ல் கண்டவாறு குவாரி குத்தகை பெறுவது தொடர்பாகவும், குவாரிப்பணி செய்வது தொடர்பாகவும் மாவட்ட அரசிதழ் வெளியீட்டில் தெரிவிக்கப்பட்டுள்ள நிபந்தனை, சட்ட உடன்படிக்கை குறித்து நன்றாக அறிவேன்/அறிவோம் என உறுதி அளிக்கிறேன்/அளிக்கிறோம்.

2) சாதாரண கற்கள் வெட்ட வழங்கப்பட்ட கற்குவாரியில் அறுத்து மெருகேற்றி கட்டுமானப்பணிக்கு பயன்படும் கிரானைட் கற்துண்டங்கள் வெட்டமாட்டோம் எனவும் அவ்வாறு கிரானைட் கிடைக்குமானால் குத்தகையை மாவட்ட ஆட்சியர் ரத்து செய்ய நான் / நாங்கள் ஒப்புக்கொள்கிறேன் / ஒப்புக்கொள்கிறோம் என உறுதியளிக்கிறேன்.

தங்கள் உண்மையுள்ள,

இடம் :

நாள் : மனுதாரர் கையொப்பம்

ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)

To,

The owner
TVL SAI HRIDHAM INFRAA PVT LTD
Ayengudi Village Illuppur TK Pudukottai DT -622501

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/405697/2022 dated 12 Dec 2022. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC23B001TN125711**
2.	**File No.**	8294
3.	**Project Type**	New
4.	**Category**	B
5.	**Project/Activity including Schedule No.**	1(a) Mining of minerals
6.	**Name of Project**	Tvl. Sai Hridham Infraa (P) Ltd., Director Thiru.V.Palanisamy over an Extent of 1.68.0 ha of Patta land in S.F.No. 80/3,80/4,80/5,80/6,80/17,80/19 of Melur Village, Kulathur Taluk, Pudukkottai District
7.	**Name of Company/Organization**	TVL SAI HRIDHAM INFRAA PVT LTD
8.	**Location of Project**	TAMIL NADU
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 02/12/2023

(e-signed)
Thiru.Deepak S.Bilgi
Member Secretary
SEIAA - (TAMIL NADU)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

This is a computer generated cover page.

THIRU.DEEPAK S.BILGI, I.F.S.
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY-TAMILNADU
3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr.No.SEIAA-TN/F.No.8294/2021/1(a)/EC.No:6176/2023,dated:17.11.2023

Sub: SEIAA, TN – Proposed Rough Stone quarry & Gravel Quarry lease over an extent of 1.68.0 Ha at S.F.Nos. 80/3, 80/4, 80/5, 80/6, 80/17 & 80/19 of Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu by Tvl.Sai Hridham Infraa (P) ltd– under Category "B1" of Item 1(a) "Mining of Mineral Projects" of the Schedule to the EIA Notification, 2006 issue of Environmental Clearance – Regarding.

Ref:
1. Your application submitted Terms of Reference dated:05.02.2021.
2. TOR Issued vide Lr.No.SEIAA.TN/F.No.8294/SEAC/ToR-960/2021 dated:30.04.2021.
3. Public Hearing conducted on 04.05.2022.
4. Online Proposal No.SIA/TN/MIN/405697/2022, Date:07.11.2022.
5. Project proponent submitted EIA Report to SEIAA-TN on 11.11.2022.
6. Minutes of the 337th SEAC meeting held on 13.12.2022.
7. Reply by the Project Proponent Date:19.09.2023.
8. Minutes of the 419th SEAC meeting held on 01.11.2023.
9. Minutes of the 673rd SEIAA meeting held on 17.11.2023.

Details of Minor Mineral Activity:-

This has reference to your application 4th & 5th cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor minerals based on the particulars furnished in your application as shown below.

MEMBER SECRETARY
SEIAA-TN

Sl. No	Details of the proposal	Data furnished
1.	Name of the Owner/Firm	Tvl.Sai Hridham Infraa (P) ltd No.208/6Muthudaiyanpatti Melur Village Sathiyamangalam Post Pudukkottai District-622501
2.	Type of quarrying	Rough Stone & Gravel
3.	S.F No. of the quarry site	80/3, 80/4, 80/5, 80/6, 80/17 & 80/19
4.	Village in which situated	Melur
5.	Taluk in which situated	Kulathur
6.	District in which situated	Pudukkottai
7.	Extent of quarry (in ha.)	1.68.0Ha
8.	Latitude & Longitude of all corners of the quarry site	10°26' 55.62"N to 10°27'00.28"N 78°46'22.24"E to 78°46'29.02"E
9.	Topo Sheet No.	58-J/15
10.	Type of mining	Opencast mechanized mining
11.	Period of current mine plan	5 years
12.	Production (Quantity in m^3)	The lease period is 5 years. The mining plan is for the period of Five years & the production should not exceed 1,51,000m^3 of Rough stone & 39,900m^3 of Gravel with an ultimate depth of mining is 41m BGL.
13.	Depth of mining	41m BGL
14.	Depth of water table	68m in summer season - 63m in Rainy season
15.	Man Power requirement	19 Employees
16.	Water requirement: 1. Drinking water & Utilized water 2. Dust suppression 3. Green belt	**3.88 KLD** 0.70 KLD 2.7 KLD 0.48 KLD

MEMBER SECRETARY
SEIAA-TN

17.	Power requirement	TNEB 1,03,708 liters of HSD for the entire period of life
18.	Precise area communication approved by the Deputy director, Department of Geology and Mining with date.	Rc.No. 276/2020 (G&M), dated:17.11.2020
19.	Mining Plan approved by the Assistant director, Department of Geology and Mining with date	Rc.No. 276/2020 (G&M), dated:14.09.2023
20.	500m cluster letter issued by Deputy director, Department of Geology and Mining with date	Rc.No. 276/2020(G&M), dated:06.01.2021.
21.	VAO certificate regarding habitations in 300m radius	Letter dated: 15.12.2020
22.	ToR details	Lr.No.SEIAA-TN/F.No.8294/SEAC/ToR-960/2021 Dated:30.04.2021
23.	Public hearing details	Public hearing conducted on Dated:04.05.2022.
24.	EIA report submitted on	EIA received on:11.11.2022.
25.	Project Cost (excluding EMP cost)	Rs.29,98,000/-
26.	EMP cost (in Rs. Lakh).	Rs.107 Lakhs
27.	CER cost (in Rs. Lakh).	Rs.5 Lakhs
28.	**Validity:** **This Environmental Clearance is accorded for the quantity of 1,51,000m^3 of Rough stone & 39,900m^3 of Gravel up to a depth of 41m BGL and the annual peak production should not exceed 36,050m^3 of Rough stone & 17,100m^3 of Gravel .** **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.**	

MEMBER SECRETARY
SEIAA-TN

AFFIDAVIT FURNISHED BY THE PROPONENT

The Proponent has furnished affidavit stamp paper attested by the Notary stating that We, **Tvl. Sai Hridham Infraa (P) Ltd., No. 208/6, Muthudaiyanpatti, Melur Village, Sathyamangalam Post, Kulathur Taluk, Pudukkoattai District, Tamil Nadu State – 622 501**, solemnly declare and sincerely affirm that:

We have apply for getting Environment Clearance to SEIAA, Tamil Nadu State for quarry lease for quarrying of **Rough stone and Gravel Quarry Project over an Extent of 1.68.0Ha of Patta lands in S.F.Nos.80/3, 80/4, 80/5, 80/6, 80/17, 80/19, Melur Village, Kulathur Taluk, Pudukkottai District, Tamil Nadu State**

1. We swear to state and confirm that within 10km area of the quarry site, we have applied for environment clearance, none of the following is situated:
    a. Protected areas notified under the wild life (Protection) Act, 1972.
    b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974.
    c. Eco-Sensitive areas as notified.
    d. Interstate Boundary
2. We will spend the amount of Rs.5 Lakhs towards Corporate Environment Responsibility (Revised CER) for the following activities to the Government Primary School, Nakeervayal Village, Kulathur Taluk, Pudukkottai District, before commencement of quarrying activities.

Sl. No.	Description	Cost breakup
1	Renovation of Existing Toilet	Rs.5,00,000/-
2	Repairing of School Compound Wall	
3	Providing Environmental Related Book	
4	Plantation along the School Boundary @ 200 Nos	
5	Painting of Class Room and Boundary Walls	
	Total	**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:

MEMBER SECRETARY
SEIAA-TN

1. **Existing Other Quarries:**

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No	Extent	Remarks
1.	Thiru. A. Periyasamy, S/o. Adaikkalam, T.S. No. 6985, Thirukokarnam, Pudukkottai	Melur Kulathur	216/15B	0.75.0	19.02.2016 to 18.02.2021
2.	Thiru. R. Muthusamy, S/o. Renagasamy, Melur, Sathiyamangalam Post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
3.	S.M. Sait, S/o.Mookaiah Solahar, No. 51,52, Charlas Nagar, Pudukkottai	Melur Kulathur	207/8	0.50.0	20.01.2017 to 19.01.2022
4.	Thiru. M. Velu, S/o. Muthaiah, Echanari Thottaiavayal, Melur, Sathyamangalam Post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	207/14B 207/15A	0.65.5	28.06.2017 to 27.06.2022
5.	Thiru. R. Natesan, S/o. Rengasamy, No. 715A, Narkkeerar Vayal, Melur Sathiyamangalam Post, Pudukkottai District	Melur Kulathur	216/1	1.47.5	12.09.2017 to 11.09.2022
6.	M/s. Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai District	Melur Kulathur	207/21B 207/22B2 207/23	1.30.5	31.07.2019 to 30.07.2024

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7.	Thiru. Jayaraj, S/o. S.K. Rengarajan, No. 3/659 of Melamuthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	40/5B, 40/6B, 40/7A, 40/8A, 40/9A, 40/10B2 & 40/11A	0.81.0	29.06.2018 to 28.06.2023

II. Proposed Area

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No	Extent
1.	Thiru. R. Muthusamy, S/o. Rengasamy, No. 663, Mela Muthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District.	Melur Kulathur	80/20, 80/21 & 80/22	0.82.0
2.	Tvl. Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village, Sahiyamangalam Post, Kulathur Taluk, Pudukkottai District – 622 501	Melur Kulathur	80/3, 80/4, 80/5, 80/6, 80/17 & 80/19	1.68.0

III. Lease Expired

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F.No	Extent	Remarks
1.	N. Rangasamy, S/o. Nadasakandiyar, Melur Village, Kulathur Taluk,	Melur Kulathur	216/6, 216/10 2016/17 2016/18	0.56.0	30.05.2009 To 29.05.2014

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2.	Thiru. S.M. Sait, 59, Charles Nagar, Pudukkottai	Melur Kulathur	216/22A	0.40.5	27.11.2013 To 26.11.2018

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. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the laborers working in my quarry site.
8. The 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. I will not engage any child labor in my quarry site and I aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided to all the laborers working in my quarry.
11. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.

REVISED EMP BUDGET

Activities	Capital Cost	Recurring Cost
Air Environment		
Noise Environment		
Waste Management		
Mine Closure	3349136	1424864
Implementation of EC, Mining Plan & DGMS Condition- Public hearing commitment		
CER		

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EMP BUDGET SUMMARY BREAKUP YEAR WISE

Year Wise Break Up	
1st Year	₹ 47,74,000/-
2nd Year	₹ 14,96,107/-
3rd Year	₹ 15,70,913/-
4th Year	₹ 16,49,458/-
5th Year	₹ 17,95,531/-

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 & Mining, Pudukkottai District in his letter Rc.No.276/2020(G&M), dated:06.01.2021 has stated that the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

1) **Existing Other Quarries:**

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No	Extent	Lease Period
1.	Thiru. A. Periyasamy, S/o. Adaikkalam, T.S. No. 6985, Thirukokarnam, Pudukkottai	Melur Kulathur	216/15B	0.75.0	19.02.16 to 18.02.2021
2.	Thiru. R. Muthusamy, S/o. Renagasamy, Melur, Sathiyamangalam Post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021

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3.	S.M. Sait, S/o.Mookaiah Solahar, No. 51,52, Charlas Nagar, Pudukkottai	Melur Kulathur	207/8	0.50.0	20.01.2017 to 19.01.2022
4.	Thiru. M. Velu, S/o. Muthaiah, Uchanari Thottaiavayal, Melur, Sathyamangalam Post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	207/14B 207/15A	0.65.5	28.06.2017 to 27.06.2022
5.	Thiru. R. Natesan, S/o. Rengasamy, No. 715A, Narkkeerar Vayal, Melur Sathiyamangalam Post, Pudukkottai District	Melur Kulathur	216/1	1.47.5	12.09.2017 to 11.09.2022
6.	M/s. Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai District	Melur Kulathur	207/21B 207/22B2 207/23	1.30.5	31.07.2019 to 30.07.2024
7.	Thiru. Jayaraj, S/o. S.K. Rengarajan, No. 3/659 of Melamuthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	40/5B, 40/6B, 40/7A, 40/8A, 40/9A, 40/10B2 & 40/11A	0.81.0	29.06.2018 to 28.06.2023

2) **Proposed Area**

Sl. No.	Name of theApplicant	Village & Taluk	S.F. No	Extent
1.	Thiru. R. Muthusamy,	Melur	80/20,	0.82.0

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	S/o. Rengasamy, No. 663, Mela Muthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District.	Kulathur	80/21 & 80/22	
2.	Tvl. Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village, Sathiyamangalam Post, Kulathur Taluk, Pudukkottai District – 622 501	Melur Kulathur	80/3, 80/4, 80/5, 80/6, 80/17 & 80/19	1.68.0

3) **Lease Expired**

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F.No	Extent	Lease Period
1.	N. Rangasamy, S/o. Nadasakandiyar, Melur Village, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/6, 216/10 2016/17 2016/18	0.56.0	30.05.2009 to 29.05.2014
2.	Thiru. S.M. Sait, 59, Charles Nagar, Pudukkottai	Melur Kulathur	216/22A	0.40.5	27.11.2013 to 26.11.2018

DISCUSSION BY SEIAA AND THE REMARKS: -

The subject was placed in the 673rd authority meeting held on 17.11.2023. The authority noted that the subject was appraised in the 419th SEAC meeting held on 01.11.2023. SEAC has furnished its recommendations for granting Environmental Clearance subject to the conditions stated therein.

After detailed discussions, the Authority taking into account the recommendations of SEAC and also the safety aspects, and to ensure sustainable, scientific and systematic mining, SEIAA decided to grant Environmental Clearance **for the quantity of 1,51,000m³ of Rough stone and 39,900m³ of Gravel**

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to the depth of mining 41m BGL and the annual peak production should not exceed 36,050m^3 of Rough stone and 17,100m^3 of Gravel. This is also subject to the conditions imposed by SEAC, normal conditions stipulated by MOEF&CC in addition to the following conditions and the conditions in Annexure 'A' of this minutes.

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 subject to review by District Collector, Mines Dept. and TNPCB on completion of every mine plan period, till the project life. They should also review the EC conditions to ensure that they have all been adhered to and implemented.
3. The project proponent shall furnish a Certified Compliance Report obtained from MoEF&CC while seeking a renewal of the mining plan to cover the project life.
4. The progressive and final mine closure plan including the green belt implementation and environmental norms should be strictly followed as per the EMP.
5. 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.
6. 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.

Annexure 'A'

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-feasibilty 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.

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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 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 slope stability study conducted through the reputed research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc.
7. The AD/DD, Dept. of Geology &Mining & Director General of Mine safety shall ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study of the reputed research & Academic Institutions as a safety precautionary measure to avoid untoward accidents during mining operation.
8. 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.

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d) **Water Environment – Protection and mitigation measures**

9. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area.
10. The proponent shall ensure that the activities do not impact the water bodies/wells in the neighboring open wells and bore wells. The proponent shall ensure that the activities do not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity or impact the water table and levels. The proponent shall ensure that the activities do not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
11. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report.
12. 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.
13. 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.
14. 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.
15. Regular monitoring of ground water level and water quality shall be carried out around the mine area during mining operation. 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.
16. 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**

17. The activity should not result in CO_2 release and temperature rise and add to micro climate alternations.
18. The proponent shall ensure that the activities undertaken do not result in carbon emission, and temperature rise, in the area.

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19. 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

20. The proponent shall ensure that the operations do not result in loss of soil biological properties and nutrients.
21. The proponent shall ensure that activity does not deplete the indigenous soil seed bank and disturb the mycorrizal fungi, soil organism, soil community nor result in eutrophication of soil and water.
22. 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.
23. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
24. The proponent shall ensure that the mine restoration is done using mycorrizal VAM, vermin-composting, Biofertilizers to ensure soil health and biodiversity conservation.
25. The proponent shall ensure that the topsoil is protected and used in planting activities in the area.
26. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.
27. 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 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.
28. 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

29. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

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30. The sound 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. Hence, the PP shall ensure that the biological clock of the villages are not disturbed because of the mining activity.

h) Biodiversity - Protection and mitigation measures

31. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.

32. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activity does not result in invasion by invasive alien species. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around.

33. The proponent shall ensure that the activities do not disturb the agro biodiversity and agro farms. Actions to be taken to promote agroforestry, mixed plants to support biodiversity conservation in the mine restoration effort.

34. 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.

35. The proponent shall ensure that the activities do not impact green lands/grazing fields of all types surrounding the mine lease area which are food source for the grazing cattle.

i) Climate Change

36. The project activity should not in any way impact the climate and lead to a rise in temperature.

37. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change.

38. Intensive mining activity should not add to temperature rise and global warming.

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39. Operations should not result in GHG releases and extra power consumption leading to Climate Change.
40. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations.
41. Mining Operation should not result in droughts, floods and water stress, and shortages, affecting water security both on site and in the vicinity.
42. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water.
43. 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) <u>Reserve Forests & Protected Areas</u>

44. The activities should provide nature based support and solutions for forest protection and wildlife conservation.
45. The project activities should not result in forest fires, encroachments or create forest fragmentation and disruption of forest corridors.
46. There should be no disturbance to the freshwater flow from the forest impacting the water table and wetlands.
47. The project proponent should support all activities of the forest department in creating awareness to local communities on forest conservation.
48. The project activities should not alter the geodiversity and geological heritage of the area.
49. The activities should not result in temperature rise due to increased fossil fuels usage disrupting the behaviour of wildlife and flora.
50. The activities should support and recognise the rights and roles of indigenous people and local communities and also support sustainable development.
51. The project activities should support the use of renewables for carbon capture and carbon storage in the project site and forest surrounds.
52. The project activities should not result in changes in forest structure, habitats and genetic diversity within forests.

k) <u>Green Belt Development</u>

53. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) are planted.

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54. The proponent shall ensure the area is restored and rehabilitated with native trees as recommended in SEAC Minutes (in Appendix).

l) **Workers and their protection**

55. 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.

56. 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.

57. The workers shall be employed for working in the mines and the working hours and the wages shall be implemented/enforced as per the Mines Act, 1952.

m) **Transportation**

58. 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.

59. 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

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avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

n) Storage of wastes

60. 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

61. The CER should be fully Implemented and fact reflected in the Half-yearly compliance report.
62. The EMP shall also be implemented in consultation with local self-government institutions & Govt. departments.
63. The follow-up action on the implementation of CER Shall be included in the compliance report.

p) Directions for Reclamation of mine sites

64. 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.
65. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
66. 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.
67. For mining area reclamation plot culture experiments to be done to identify/ determine suitable species for the site.

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68. 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.

69. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site.

70. 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.

71. 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.

72. 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.

73. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoils should have necessary physical, chemicals, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread.

74. 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. The land disturbed should be reshaped for long term use. Mining should be as far as possible be eco-friendly. Integration of rehabilitation strategies with mining plan will enable speedy restoration.

75. Efforts should to taken to aesthetically improve the mine site. Generally, there are two approaches to restoration i.e Ecological approach which allows tolerant species to establish

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following the succession process allowing pioneer species to establish. The other approach i.e plantation approach is with selected native species are planted. A blend of both methods may be used to restore the site by adding soil humus and mycorrhiza.

76. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

CONDITIONS IMPOSED BY SEAC:

1) The prior Environmental Clearance granted for this mining project shall be valid for the project life including production value as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to **a maximum of thirty years, whichever is earlier, vide MoEF&CC Notification S.O, 1807(E) dated 12.04.2022.**
2) The PP shall not employ any external agency for carrying out the blasting operation and he shall also install the temporary magazines approved by the concerned licensing authority before the execution of the lease, for storing the authorized explosives & detonators separately in accordance with the Explosive Rules, 2008.
3) **Since the structures are situated within a radial distance of 500 m,** the PP shall carry out the scientific studies **within a period of six months** from the commencement of quarrying operations, to design the controlled blast parameters for reducing the blast-induced ground/air-vibrations and eliminating the fly rock from the blasting operations carried out in the proposed quarry, by involving anyone of these reputed Research and Academic Institution such as CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. 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.
4) The PP shall furnish a Standard Operating Procedures (SoP) for carrying out the blasting operations in securing the safety of the persons living within a radial distance of 500 m (danger zone) to the concerned AD (Mines) at the time of lease execution.
5) The PP shall not employ any external agency for carrying out the blasting operation and he shall also install the temporary magazines approved by the concerned licensing authority before the execution of the lease, for storing the authorized explosives & detonators separately in accordance with the Explosive Rules, 2008.
6) 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 walls within a period

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of one year from the commencement of mining operations for evaluating the slope stabilization & protective measures at the ultimate pit limits, 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. 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.

7) As accepted by the Project Proponent the CER cost of Rs. 5 Lakhs and the amount shall be spent for the activities as committed towards Government Primary School, Nakkeervayal Village before obtaining CTO from TNPCB.

8) The PP shall inform send the 'Notice of Opening' of the quarry to the Director of Mines Safety, Chennai Region before obtaining the CTO from the TNPCB.

9) The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.

10) The proponent shall appoint the statutory competent persons relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961, as amended from time to time.

11) Within a period one month from the execution of lease deed, the PP shall ensure that the persons deployed in the quarry including all the contractual employees/truck drivers shall undergo initial/periodical training in the DGMS approved GVTC situated in Trichy / Salem / Hosur.

12) The PP shall construct a garland drain of size, gradient and length around the proposed quarry incorporating garland canal, silt traps, siltation pond and outflow channel connecting to a natural drain should be provided 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.

13) Monitoring of drainage water should be carried out at different seasons by an NABL accredited lab and clear water should only be discharged into the natural stream. Geo-tagged photographs of the drainage and sampling site should be submitted along with HYCR.

14) The proponent shall install the 'S3 (or) G2' type of fencing all around the boundary of the proposed working quarry with gates for entry/exit before the commencement of the operation

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as recommended in the DGMS Circular, 11/1959 and shall furnish the photographs showing the same before obtaining the CTO from TNPCB.

15) The Proponent shall submit a conceptual 'Slope Stability Action Plan' incorporating the benches & accessible haul road approved by the concerned AD (Mines) for the proposed quarry to the DEE/TNPCB at the time of obtaining the CTO.

16) The PP shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are undergoing the initial/periodical medical examination in the DGMS approved OHS Clinics/Hospitals as per the DGMS Circular No. 01 of 2011 before they are engaged in mining activities.

17) The PP shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are provided with adequate PPEs before engaged in mining operations.

18) The PP shall meticulously carry out the mitigation measures as spelt out in the approved EMP.

19) Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology should be adopted by considering the wind direction.

20) The Project Proponent shall ensure that the funds earmarked for environmental protection measures are kept in a separate bank account and should not be diverted for other purposes. Year-wise expenditure should be included in the HYCR.

21) The Project Proponent shall send a copy of the EC to the concerned Panchayat/local body.

22) Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required, in coordination with the concerned Govt. Authority.

23) Perennial 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.

24) The Proponent shall ensure that the noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures are undertaken accordingly. The report on the periodic monitoring shall be included in the HYCR.

25) Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.

26) 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

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wide range of indigenous plant species should be planted as given in the appendix. 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.

27) 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/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.

28) **Noise and Vibration Related:** (i) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (ii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.

29) The PP shall carry out maximum of only one round of controlled blast per day, restricted to the maximum of 30 to 40 number of holes per round with maintaining maximum charge per delay in such a manner that the blast-induced ground vibration level (Peak Particle Velocity) measured in the houses/structures located at a distance of 500 m shall not exceed 2.0 mm/s and no fly rock shall travel beyond 20 m from the site of blasting.

30) The PP shall also ensure that the blasting operations are not carried out on a 'day after day' basis and a minimum 24 hours break should be observed between blasting days to reduce the environmental impacts effectively.

31) If 'Deep-hole large diameter drilling and blasting' is required, then the PP shall obtain special permission from DGMS.

32) The PP shall ensure that the blasting operations shall be carried out during a prescribed time interval with a prior notice to the habitations situated around the proposed quarry after having posted the sentries/guards adequately to confirm the non-exposure of public within the danger zone of 500 m from the boundary of the quarry. The PP 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.

33) The PP shall ensure that the blasting operations are carried out by the blaster/Mine Mate/Mine Foreman employed by him in accordance with the provisions of MMR 1961 and it shall not be carried out by the persons other than the above statutory personnel.

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34) The proponent 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.

35) Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.

36) The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.

37) The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.

38) The proponent shall ensure that the transportation of the quarried granite stones shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried granite stones; and transport of granite stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.

39) To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.

40) The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.

41) The project proponent shall ensure that the provisions of the MMDR Act, 1957&the MCDR 2017 and Tamil Nadu Minor Mineral Concession Rules 1959 are compiled by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.

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42) The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.

43) The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.

44) All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.

45) That the grant of this E.C. is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.

46) As per the directions contained in the OM F.No.22-34/2018-IA.III dated 16th January 2020 issued by MoEFCC, the Project Proponent 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 which will be monitored by SEAC at regular intervals.

47) 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.

48) 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.

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Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	*Aegle marmelos*	Vilvam	வில்வம்
2	*Adenaanthera pavonina*	Manjadi	மஞ்சாடி, ஆனைக்குன்றுமணி
3	*Albizia lebbeck*	Vaagai	வாகை
4	*Albizia amara*	Usil	உசில்
5	*Bauhinia purpurea*	Manthara	மந்தாரை
6	*Bauhinia racemosa*	Aathi	ஆத்தி
7	*Bauhinia tomentos*	Iruvathi	இருவாத்தி
8	*Buchanania axillaris*	Kattuma	காட்டுமா
9	*Borassus flabellifer*	Panai	பனை
10	*Butea monosperma*	Murukkamaram	முருக்கமரம்
11	*Bobax ceiba*	Ilavu, Sevvilavu	இலவு
12	*Calophyllum inophyllum*	Punnai	புன்னை
13	*Cassia fistula*	Sarakondrai	சரகொன்றை
14	*Cassia roxburghii*	Sengondrai	செங்கொன்றை
15	*Chloroxylon swietenia*	Purasamaram	புரசமரம்
16	*Cochlospermum religiosum*	Kongu, Manjalllavu	கோங்கு, மஞ்சள் இலவு
17	*Cordia dichotoma*	Naruvili	நருவிலி
18	*Cretevn adansoni*	Mavalingum	மாவிலிங்கம்
19	*Dillenia indica*	Uva, Uzha	உசா
20	*Dillenia pentagyna*	SiruUva, Sitruzha	சிறு உசா
21	*Diospyro sebenum*	Karungali	கருங்காலி
22	*Diospyro schloroxylon*	Vagarai	வாகரை
23	*Ficus amplissima*	Kalltchi	கல் இச்சி
24	*Hibiscus tiliaceou*	Aatrupoovarasu	ஆற்றுபூவரசு
25	*Hardwickia binata*	Aacha	ஆச்சா
26	*Holoptelia integrifolia*	Aavil	ஆவி மரம் ஆயில்
27	*Lannea coromandelica*	Odluam	ஓட்டிடம்
28	*Lagerstroemia speciosa*	Poo Marudhu	பூ மருது
29	*Lepisanthus tetraphylla*	Neikottaimaram	நெய் கொட்டைமரம்
30	*Limonia acidissima*	Vila maram	விளா மரம்
31	*Litsea glutinos*	Pisinpattai	அரம்பா பிசினபட்டை
32	*Madhuca longifolia*	Illuppai	இலுப்பை
33	*Manilkara hexandra*	UlakkaiPaalai	உலக்கை பாலை
34	*Mimusops elengi*	Magizhamaram	மகிழமரம்
35	*Mitragyna parvifolia*	Kadambu	கடம்பு
36	*Morinda pubescens*	Nuna	நுனா
37	*Morinda citrifolia*	Vellai Nuna	வெள்ளை நுனா
38	*Phoenix sylvestre*	Eacha	ஈச்சமரம்
39	*Pongamia pinnat*	Pungam	புங்கம்

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40	*Premna mollissima*	Murunu	முனை
41	*Premna serratifolia*	Narumurunu	நறு முனை
42	*Premna tomentosa*	Malaipoovarasu	மலை பூவரசு
43	*Prosopis cineraria*	Vanni maram	வன்னி மரம்
44	*Pterocarpus marsupium*	Vengai	வேங்கை
45	*Pterospermum canescens*	Vennaingu Tada	வெண்ணாங்கு
46	*Pterospermum xylocarpum*	Polavu	புலவு
47	*Putranjiva roxburghii*	Karupala	கறுப்பாலா
48	*Salvadora persica*	Uga Maram	உகா மரம்
49	*Sapindus emarginatus*	Manipungan, Soapukai	மணிப்புங்கன் சோப்புக்காய்
50	*Saraca asoca*	Asoca	அசோகா
51	*Streblus asper*	Purai maram	பூரை மரம்
52	*Strychnos nux-vomica*	Yetti	எட்டி
53	*Strychnos potatorum*	Therthang Kottai	தேத்தான் கொட்டை
54	*Syzygium cumini*	Naval	நாவல்
55	*Terminalia bellerica*	Thandri	தான்றி
56	*Terminalia arjuna*	Ven maruthu	வெண் மருது
57	*Toona ciliata*	Sandhana vembu	சந்தன வேம்பு
58	*Thespesia populnea*	Puvarasu	பூவரசு
59	*Walsuratrifoliata*	valsura	வால்சுரா
60	*Wrightia tinctoria*	Veppalai	வெப்பாலை
61	*Ziziphus jujuba*	Kodukkapuli	கொடுக்காப்புளி

Appendix-II

Display Board

(Size 6' x5' with Blue Background and White Letters)

கரங்கு

பகுதி மற்றும் வார்டு மேம்பாட்டுக்கான காலத் திட்டம்	குழாயின் எல்லையை கற்றி வேலி அமைக்க வேண்டும்
	காலப்பாலத்தின் ஆழம் தரைமட்டத்திலிருந்து மீட்டருக்கு மிகாமல் இருக்க வேண்டும்
	காற்றில் மாசு ஏற்படாதவாறு காலை பணிகளை மேற்கொள்ள வேண்டும்
நடவடிக்கை பராமரிக்கப்பட வேண்டிய மாசுக்கட்டுப்பாட்டு	வாகனங்கள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு தண்ணீரை முறையாக தண்ணீர் லாரிகளின் மூலமாக அவ்வப்போது தெளிக்க வேண்டும்
	இரசாயன தாவரவகை தூசி மாசுபாட்டையும் குறைப்பதற்காக குழாயின் எல்லையை சுற்றி அடர்த்தியான பசுமை பகுதியை ஏற்படுத்த வேண்டும்
காலத்தில் பெய்த மழைக்காலத்தை நீர்த்தேக்கம் ஏற்படாதவாறும் மற்றும் காலை பாதுகாத்தல் பாதுகாப்பு நடவடிக்கைகள் மேற்கொள்ள வேண்டும்	
காலத்தில் இருந்து ஏற்படும் இரைச்சல் அளவு 85 டெசிபல் (dB) அளவிற்கு மேல் ஏற்படாதவாறு தகுந்த கட்டுப்பாடுகளை மேற்கொள்ள வேண்டும்	
காலை சுற்றி வசிக்கும் மக்கள் மீது காலத்தில் உள்ள பணியாளர்களுக்கு தகுந்த பாதுகாப்பு கருவிகள் வழங்குவதோடு கட்டாயமாக கடைபிடிக்க பயிற்சி அளிக்க வேண்டும்	
சிறப்பு அல்லது பள்ளிகள் மற்றும் மருத்துவ மனைகளை தொடர்ந்து நன்கு பராமரிக்க வேண்டும்	
காலப்பணிகளால் தூசியை உண்டாக்கும் பணிகள் மற்றும் நீர்நிலைகள் பாதிக்கப்படக் கூடாது	
நீர்நிலைகள் பாதிக்கப்படாமல் நீர்வளம் உறுதி செய்யும் வகையில் நிலத்தடி நீரில் நாற்றமின்மை தொடர்ந்து கண்காணிக்க வேண்டும்	
காலத்திலிருந்து வரும் கொட்டகளை சரிந்து செல்லும் போது மக்களுக்கு எந்த இடையூறும் ஏற்படுத்தாதவாறு பாதுகாப்பாகவும் மற்றும் சுற்றுப்புற பாதுகாப்பு பணிகளை மேற்கொள்ள வேண்டும்	
காலப்பணிகளால் ஏற்படும் கழிவுகளை முறையாக நிர்வாகம் செய்து காலத்தினை முடிக்க வேண்டும்	
காலப் பகுதியில் ஏற்படும் ஒலி மற்றும் காலை நடவடிக்கைகளால் தூசுபடிதல் ஏற்படுவதை தடுக்கும் பொருட்டு தண்ணீர் தெளித்தல் மற்றும் தார்பாலின் மறைப்புகளை ஏற்படுத்த வேண்டும்	
உடனடியாக மேற்கொள்ளப்பட வேண்டிய நடவடிக்கைகள் மற்றும் மாசுக்கட்டுப்பாட்டு கருவிகள் பழுதடைந்தால் அதனை சரிசெய்ய மாற்று ஏற்பாடாக மாற்று மின் அமைப்புகளை ஏற்படுத்தி வைத்திருக்க வேண்டும்	

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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.

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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.

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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

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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

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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. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, O.A.No.404/ 2016 (M.A.No. 758/2016, M.A. No. 920 /2016, M.A.No.1122/2016, M.A.No. 12/2017 & M.A.No.843/2017), O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).

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58. All required sanitary and hygienic measures should be in place before starting construction activities and they have to be maintained throughout the construction phase.
59. The company shall stress upon the preventive aspects of occupational health.
60. 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.
61. A scientific site/ ecological rehabilitation and restoration plan on long term basis should be drawn to carryout restoration with native species and Bio diversity.
62. 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.
63. The existing water bodies should not be disturbed to ensure sustainable environment for aquatic life forms.
64. The proponent should completely implement all environmental pollution control measures as detailed in the EIA report and in the additional report.
65. Avenue plantation wherever needed has to be carried out along the route for dust suppression.
66. 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.
67. 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.
68. 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.
69. 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.
70. Hydro geological study including infiltration test shall be conducted by any reputed agency to estimate leachate quantity.
71. Regular medical check-up for mine workers and nearby residents around the project site involving community medical centre/NIMH shall be conducted.

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72. As per norms, the health study should be conducted through competent/approved health organization and report submitted for one year.
73. 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.
74. NOC from the State GWA for drawing ground water shall be obtained, if ground water table is intersected.
75. Green belt shall be provided as per norms of MoEF & CC, GOI, in consultation with local DFO.
76. All the recommendations made in the EIA report of the project shall be effectively implemented.
77. 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.
78. All the environmental protection measures and safeguards as recommended in the EIA report shall be complied with.
79. 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.
80. 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.
81. 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, NOx 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: <u>General Conditions:</u>

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.

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3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

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14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining tphe 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.

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23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board,76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Pudukkottai District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. Assistant Director, Department of Geology & Mining, Pudukkottai District.
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Signature Not Verified
Digitally signed by: Thiru.Deepak S.Bilgi
Designation: Member Secretary
Date and Time: 12/12/2023 3:41:28 PM

ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), Tamil Nadu)

To,

The Owner

THIRU. R. MUTHUSAMY ROUGH STONE QUARRY

No.663, Mela Muthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District-622501 -622501

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/77262/2021 dated 17 Aug 2022. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC23B001TN110349**
2.	**File No.**	8285
3.	**Project Type**	New
4.	**Category**	B1
5.	**Project/Activity including Schedule No.**	1(a) Mining of minerals
6.	**Name of Project**	Thiru.R.Muthusamy Rough Stone Quarry
7.	**Name of Company/Organization**	THIRU. R. MUTHUSAMY ROUGH STONE QUARRY
8.	**Location of Project**	Tamil Nadu
9.	**TOR Date**	27 Apr 2021

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 17/03/2023

(e-signed)
Thiru.Deepak S.Bilgi
Member Secretary
SEIAA - (Tamil Nadu)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

This is a computer generated cover page.

THIRU.DEEPAK S. BILGI, I.F.S.
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY-TAMILNADU
3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.8285/EC.No: 5552/2023, dated: 18.02.2023

Sir/Madam,

Sub: SEIAA-TN – Proposed Rough Stone Quarry lease over an extent of 0.82.0Ha in S.F.Nos.80/20, 80/21, 80/22 of Melur Village, Kulathur Taluk, Pudukottai District, Tamil Nadu by R.Muthusamy –under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, - issue of Environmental Clearance Regarding.

Ref:
1. TOR Issued vide letter No.SEIAA.TN/F.No. 8285/SEAC/ToR- 940/2021 Dated: 27.04.2021.
2. Public Hearing conducted on 07.04.2022
3. Online Proposal No. SIA/TN/MIN/77262/2021, dated: 25.05.2022
4. Project proponent submitted EIA Report to SEIAA-TN on 27.05.2022
5. Minutes of the 303rd SEAC Meeting held on 18.08.2022.
6. Proponent Reply Dated: 21.10.2022
7. Minutes of the 349th SEAC meeting held on 20.01.2023.
8. Minutes of the 594th SEIAA meeting held on 18.02.2023.

- - - - -

Details of Minor Mineral Activity:-

This has reference to your application 3rd & 4th cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor minerals based on the particulars furnished in your application as shown below.

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Sl. No	Details of the proposal	Data furnished
1	Name of the Owner/Firm	R.Muthusamy S/o.Rengasamy, No.663,Vellanur Post Kulathur Taluk Pudukottai District-622501
2	Type of quarrying	Rough Stone Quarry
3	S.F No. Of the quarry site	80/20, 80/21, 80/22
4	Village in which situated	Melur
5	Taluk in which situated	Kulathur
6	District in which situated	Pudukottai
7	Extent of quarry (in ha.)	0.82.0Ha
8	Period of quarrying proposed	5 years
9	Type of mining	Opencast Semi-Mechanized Mining
10	Production (Quantity in m^3)	64,578m^3 of Rough Stone
11	Latitude & Longitude of all corners of the quarry site	10°26'55.93"N to10°26'59.62"N 78°46'26.18"E to78°46'26.28"E
12	Top Sheet No.	58-J/15
13	Man Power requirement per day:	15Nos.
14	Precise area communication approved by the Deputy Director with date	Rc.No.207/2020(G&M), dated: 30.11.2020
15	Mining Plan approved by the Deputy Director of Geology and Mining with date	Rc.No.207/2020(G&M), dated: 07.10.2022
16	Water requirement: 1. Drinking & domestic purposes 2. Dust suppression 3. Green Belt	1.5 KLD 0.5 KLD 0.5KLD 0.5 KLD
17	Power requirement: **a.** Domestic Purpose **b.** Industrial Purpose	 TNEB 56,316 Liters of HSD for the entitre

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		period of life
18	Depth of quarrying	27m bgl
19	Depth of water table	55m bgl
20	Project Cost (excluding EMP cost)	Rs. 42,30,000
21	EMP cost	Capital Cost – Rs. 14,95,000 Recurring Cost – Rs. 11,16,000
22	CER cost	Rs. 5,00,000
23	500m cluster letter issued by Deputy Director, Department of Geology and Mining	Rc.No.207/2020(G&M), dated: 29.12.2020
24	VAO certificate regarding 300m radius cluster	Letter Dated: 10.12.2020
25	ToR Issued Details	Letter. No. SEIAA-TN/F.No.8285/SEAC/ToR-940/2020 Dated: 27.04.2021
26	Public Hearing Conducted on	07.04.2022
27	EIA Report submitted on	27.05.2022
	Validity: **This Environmental Clearance is granted for the production quantity of 64,578m^3 of Rough Stone upto depth of 27m BGL as per the approved mining plan and is valid for the approved mining plan period.**	

The Proponent has furnished affidavit in One Hundred Rupees stamp paper attested by the Notary stating that

I, **THIRU. R. MUTHUSAMY, S/o. Rengasamy,** residing at No.663, Mela Muthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District has applied a mining lease for Quarrying Rough stone quarry in the S.F.Nos.80/20, 80/21 & 80/22 over an extent of 0.82.0 ha. Melur Village, Kulathur Taluk, Pudukkottai District.

1. I swear to state and confirm that within 10km area of the quarry site, i have applied for environmental clearance, none of the following is situated.
   a. Protected areas notified under the wildlife (Protection) Act, 1972.
   b. Critically polluted areas as identified by CPCB constituted under water (prevention and control of pollution) Act, 1974.

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c. Eco sensitive areas as notified.

d. Interstate boundaries and international boundaries within the radius of 5km.

2. The following Corporate Environment Responsibility (CER) activities will be completed before commencement of the quarrying activities.

CER Activity	CER cost (Rs)
Providing Tables, Wall painting materials, Provision of gadgets for Smart Classroom, Environmental awareness books for library, Greenbelt development, Toilet rooms for students in Panchayat Union Primary School, Nakkeerar Vayal Village.	**5,00,000/-**
Total Cost Allocation	**5,00,000/-**

2(A).The total area of few quarries located within 500meter radius from the periphery of my quarry site details as shown below

(i)Existing Other Quarries:

S. No.	Name of the lessee	Village & Taluk	S. F. No.	Extent	Lease period
1.	Thiru. A. Periyasamy, S/o.Adaikkalam, T.S. No.6985, Thirukokarnam, Pudukkottai	Melur & Kulathur	216/15B	0.75.0	19.02.16 to 18.02.2021
2.	Thiru. R. Muthusamy, S/o.Rengasamy, Melur, Sathiyamangalam Post, Kulathur Taluk, Pudukkottai District.	Melur & Kulathur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
3.	S.M. Sait, S/o. Mookaiah Solahar, No.51, 52, Charlas Nagar, Pudukkottai.	Melur & Kulathur	207/8	0.50.0	20.01.2017 to 19.01.2022
4.	Thiru. M. Velu, S/o.Muthaiah, Echanari	Melur & Kulathur	207/14B, 207/15A	065.5	28.06.2017 to 27.06.2022

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	Thottiavayal, Melur, Sathiyamangalam Post, Kulathur Taluk, Pudukkottai District.				
5.	Thiru. R. Natesan, S/o. Rengasamy, No.715A, Narkkeerar Vayal, Melur, Sathiyamangalam Post, Pudukkottai District.	Melur & Kulathur	216/1	1.47.5	12.09.2017 to 11.09.2022
6.	M/s. Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai District.	Melur & Kulathur	207/21B, 207/22B2, 207/23	1.30.5	31.07.2019 to 30.07.2024
7.	Thiru.Jayaraj, S/o.S.K.Rengarajan, No.3/659 of Melamuthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District.	Melur & Kulathur	40/5B, 40/6B, 40/7A, 40/8A, 40/9A, 40/10B2 & 40/11A	0.81.0	29.06.2018 to 28.06.2023

(ii)Proposed Area:

S. No.	Name of the Applicant	Village & Taluk	S. F. No.	Extent
1.	Thiru. R. Muthusamy, S/o.Rengasamy, No.663, Mela Muthudaiyanpatti Village, Vellanur Post, Kulathur Taluk, Pudukkottai District.	Melur & Kulathur	80/20, 80/21 & 80/22	0.82.0
2.	Tvl.Sai Hridham Infraa (P) Ltd, Office at 208/6,	Melur & Kulathur	80/3, 80/4, 80/5, 80/6,	1.68.0

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	Muthudaiyanpatti, Melur Village, Sathiyamangalam Post, Kulathur Taluk, Pudukkottai District – 622 501.		80/17 & 80/19	

(iii)Lease Expired:

S. No.	Name of the lessee/	Village & Taluk	S. F. No.	Extent	Lease period
1.	N. Rengasamy, S/o.Nadasakandiyar, Melur Village, Kulathur Taluk, Pudukkottai district.	Melur & Kulathur	216/6, 216/10, 216/17 & 216/18	0.56.0	30.05.2009 to 29.05.2014
2.	Thiru. S.M. Sait, 59, Charles Nagar, Pudukkottai	Melur & Kulathur	216/22A	0.40.5	27.11.2013 to 26.11.2018

3. There will not be any hindrance or disturbance to the people living on enroute / nearby my quarry site while transporting the mined out material and due to mining /quarrying activities.
4. No habitations are located within 500m radius from the periphery of my applied quarry.
5. I swear that Afforestation will be carried out during the course of quarrying operation and maintained.
6. The required insurance will be taken in the name of the labourers working in my quarry site.
7. Approach road belongs to local panchayat only and no other private patta roads encountered.
8. I will not engage any child labour in my quarry site and i am aware that engaging child labour is punishable under the law.

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9. All type of safety / Protective equipments will be provided to all the labourers working in my quarry
10. No permanent Structures, temples etc are located within 500m radius from the periphery of my quarry.

I ensure to do all the social and environmental commitment as mentioned in the mining plan to the best of my knowledge.

Details of Quarries located within 500M radius from the proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from the Deputy Director, Geology & Mining, Pudukottai District. In his letter Rc.No.207/2020 (G&M), dated: 29.12.2020 has stated the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

1) **Existing Other Quarries:**

S. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No.	Extent	Lease Period
1.	Thiru.A.Periyasamy, S/o.Adaikkalam, T.S.No.6985, Thirukokarnam, Pudukkottai	Melur Kulathur	216/15B	0.75.0	19.02.16 to 18.02.2021
2.	Thiru.R. Muthusamy, S/o.Rengasamy, Melur, Sathiyamangalam post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/5 & etc.,	0.93.5	23.09.2016 to 22.09.2021
3.	S.M.Sait, S/o.Mookaiah Solahar, No.51,52, Charlas Nagar, Pudukkottai	Melur Kulathur	207/8	0.50.0	20.01.2017 to 19.01.2022
4.	Thiru.M.Velu, S/o.Muthiah, Echanari Thottiavayal, Melur, Sathyamangalam	Melur Kulathur	207/14B 207/15A	0.65.5	28.06.2017 to 27.06.2022

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	post, Kulathur Taluk, Pudukkottai District				
5.	Thiru.R.Natesan, S/o.Rengasamy, No.715A, Narkkeerar ayal, Melur, Sathiyamangalam post, Pudukkottai District	Melur Kulathur	216/1	1.47.5	12.09.2017 to 11.09.2022
6.	M/s.Sai Hridham Infraa Private Limited, 14/28, Sowrastra Street, Illuppur Taluk, Pudukkottai District	Melur Kulathur	207/21B 207/22B2 207/23	1.30.5	31.07.2019 to 30.07.2024
7.	Thiru.Jayaraj, S/o.S.K.Rengarajan, No.3/659 of Melamuthudaiyanpatti village, Vellanur post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	40/5B, 40/6B, 40/7A, 40/8A, 40/9A, 40/10B2 & 40/11A	0.81.0	29.06.2018 to 28.06.2023

2) **Proposed Area:**

S. No.	Name of the applicant	Village & Taluk	S.F. No.	Extent (hect)
1.	Thiru.R.Muthusamy, S/o. Rengasamy, No.663, Mela Muthudaiyanpatti village, Vellanur post, Kulathur Taluk, Pudukkottai District	Melur Kulathur	80/20, 80/21 & 80/22	0.82.0
2.	Tv1.Sai Hridham Infraa (P) Ltd., Office at 208/6, Muthudaiyanpatti, Melur Village Sathiyamangalam Post, Kulathur Taluk,	Melur Kulathur	80/3, 80/4, 80/5, 80/6, 80/17 & 80/19	1.68.0

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3) **Lease Expired**

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No.	Extent	Lease Period
1.	N.Rengasamy, S/o.Nadasakandiyar, Melur village, Kulathur Taluk, Pudukkottai District	Melur Kulathur	216/6, 216/10 216/17 218/18	0.56.0	30.05.2009 to 29.05.2014
2.	Thiru.S.M.Sait, 59, Charles Nagar, Pudukkottai	Melur Kulathur	216/22A	0.40.5	27.11.2013 to 26.11.2018

Appraisal by SEAC:-

Proposed Rough Stone Quarry lease over an extent of 0.82.0Ha in S.F.Nos.80/20, 80/21, 80/22 of Melur Village, Kulathur Taluk, Pudukottai District, Tamil Nadu by R.Muthusamy -Environmental Clearance- Regarding.

(SIA/TN/MIN/77262/2021, Dated: 25.05.2022)

The proposal was placed for appraisal in the 349th meeting of SEAC held on 20.01.2023. The details of the project furnished by the proponent are available in the website (www.parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Thiru.R.Muthusamy has applied for Environmental Clearance for the proposed Rough Stone quarry lease over an extent of 0.82.0 Ha at S.F.Nos. 80/20, 80/21 & 80/22 at Melur Village, KulathurTaluk, Pudukottai District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. As per the mining plan, the lease period is for 5 years. The mining plan is for the period of 5 years. The total production for 5 years not to exceed 64,576m^3 of Rough Stone for an annual peak production of 17,988 m^3(3rd Year) with ultimate

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depth of 27m BGL (2m – Top Soil & 25m – Rough Stone).

4. TOR was issued vide Lr No.SEIAA-TN/F.No.8285/SEAC/ToR- 940/2021 Dated: 27.04.2021.
5. Public Hearing was conducted on: 07.04.2022.
6. EIA Report was submitted on: 27.05.2022.
7. Earlier the proposal was placed in 303rd SEAC meeting held on 18.08.2022. Based on the presentation made by the proponent, SEAC noted and decided to call for details as follows

    1. SVS International College of Architecture is at a distance of 375m from the proposed lease area. Hence, the PP is requested to furnish 'Not Functioning' letter from the Tahsildar, as PP claims that the college is not functioning in recent years.
    2. The PP shall furnish the Revised Mining Plan approved by the competent authority.
    3. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the following

        - Soil health & bio-diversity.
        - Climate change leading to Droughts, Floods etc.
        - Pollution leading to release of Greenhouse gases (GHG), rise in Temperature & Livelihood of the local people.
        - Possibilities of water contamination and impact on aquatic ecosystem health.
        - Agriculture, Forestry & Traditional practices.
        - Hydrothermal/Geothermal effect due to destruction of the Environment.
        - Bio-geochemical processes and its foot prints including environmental stress.
        - Sediment geochemistry in the surface streams.

        a. 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

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shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the project life (or) subject to a maximum of thirty years whichever is earlier.

b. 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.

c. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

d. Detailed Mine Closure Plan covering the project life (or) subject to a maximum of thirty years, whichever is earlier.

e. Detailed Environment Management Plan includes adaptation, mitigation & remedial strategies covering the project life (or) subject to a maximum of thirty years, whichever is earlier.

On receipt of the above details, SEAC would further deliberate on this project and decide the further course of action. Subsequently, the proposal was placed in 548th Authority meeting held on 01.09.2022. Further, the Authority after detailed deliberation decided to call for additional details.

1. The impact of mining on the agricultural fields nearby.
2. The impact on the vegetation due to mining.
3. The impact on Ground Water quality and Table within 1km radius from the proposed mine lease area shall be furnished.
4. Is the proponent part of cluster management committee.

Now the proposal was placed for reappraisal in this 349th meeting of SEAC held on 20.01.2023, since the PP has submitted the details. Based on the presentation and documents furnished by the project proponent, SEAC decided to **recommend the proposal for the grant of Environmental Clearance for quantity of 64,578 m^3 of Rough Stone for an annual peak 45,131 m^3 Rough stone (3rd year) with ultimate depth of 27 m (2m – Top Soil & 25m – Rough Stone) BGL,** subject to the standard conditions as per the Annexure

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of this minutes & normal conditions stipulated by MOEF&CC, in addition to the following specific conditions:

1. The prior Environmental Clearance granted for this mining project shall be valid for the project life including production value as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to a maximum of thirty years, whichever is earlier, vide MoEF&CC notification No. S.O. 1807(E) Dt12.4.2022.
2. The mine manager and other statutory competent persons such as blaster (or) mine mate shall be appointed before the commencement of mining operation as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961.
3. The PP shall communicate the 'Notice of Opening' of the quarry to the Director of Mines Safety, Chennai Region before obtaining the CTO from the TNPCB.
4. The proponent shall maintain the 'S3 (or) G2' type of fencing 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 the same before obtaining the CTO from TNPCB.
5. Further, the PP shall maintain the garland drain with proper size, gradient and length along the boundary of the pit leaving behind the mandatory safety zone of 7.5 m as it is designed to take care of run-off water (size, gradient and length) before obtaining the CTO from TNPCB.
6. The PP shall carry out the comprehensive hydrogeological studies once in two years to assess the quality & quantity of the ground water due to impacts of quarrying operation by involving any of the reputed Research and Academic Institution such as CSIR-Central Institute of Mining and Fuel Research / Dhanbad, NIRM, IIT-Madras, NIT-Dept of Mining Engg. Surathkal, Anna University Chennai-Dept of Geology, CEG Campus, and University of Madras -Dept of Applied Geology, Chennai etc shall be carried out before the commencement of mining operations. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, and DMS, Chennai as a part of Environmental Compliance.
7. The PP shall carry out the shallow depth Jack hammer drilling (of 32-34 mm dia & 1.5 m depth) & NONEL initiation based 'controlled' blasting operation involving muffle blasting in the proposed quarry such that the blast-induced ground vibrations are

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controlled within the permissible limits as stipulated by the DGMS as well as no fly rock travel beyond 20 m from the blast site.

8. The PP shall ensure that the blasting operations are carried out by the blaster/Mine Mate/Mine Foreman employed by him as per the provisions of MMR 1961.
9. The PP 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.
10. The PP shall carry out the scientific studies on design of controlled blasting for reducing the impact of blast-induced ground/air vibrations and fly rock in the proposed quarry, by involving a reputed Research and Academic Institution such as NIRM, IIT (ISM)/Dhanbad, Anna University Chennai-Dept of Mining Engg, NIT Surathkal-Dept of Mining Engg, and any CSIR Laboratories etc shall be carried out before the commencement of mining operations. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, and DMS, Chennai as a part of Environmental Compliance.
11. The Project Proponent (PP) shall submit a 'Slope stability action plan' incorporating the haul road ramp keeping the benches intact for the proposed quarry lease as the depth of the proposed quarry is exceeding 40 m after having approved by the concerned AD (Geology & Mines) to the DEE/TNPCB before obtaining CTO.
12. The PP shall carry out the scientific studies to assess the slope stability of the The PP shall carry out the scientific studies to assess the slope stability of the benches and quarry wall when the depth of the quarry touches 30 m (or) after the completion of 4 years of operation whichever is earlier, by involving any of the reputed Research and Academic Institution such as CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus, etc. 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 PP shall carry out the tree plantation to act as a barrier to reduce noise level and dust pollution along the boundary of the quarrying site considering the wind direction before obtaining the CTO from the TNPCB.
14. The Project Proponent shall ensure that the funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for

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other purpose. Year-wise expenditure should be reported to the MoEF & CC Ministry and its Integrated Regional Office (IRO) located in Chennai.

15. The Project Proponent shall send a copy of the clearance letter marked to concerned Panchayat from whom any suggestion/representation has been received while processing the proposal.
16. 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.
17. As accepted by the Project Proponent the CER cost is Rs. 5 lakhs and the amount shall be spent to the committed activities for Panchayat Union Primary School, Nakkeerar Vayal Village before obtaining CTO from TNPCB.

ANNEXURE - I

1. The proponent shall mandatorily appoint the required number of statutory officials and the competent persons in relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferrous Mines Regulations, 1961.
2. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit before the commencement of the operation and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
3. Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required in connection with the concerned Govt. Authority.
4. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
5. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width

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and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

6. The proponent shall ensure that the slope of dumps is suitably vegetated in scientific manner with the native species to maintain the slope stability, prevent erosion and surface run off. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps.
7. Perennial sprinkling arrangement shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
8. The Project Proponent shall carry out slope stability study by a reputed academic/research institution such as NIRM, IIT, Anna University for evaluating the safe slope angle if the proposed dump height is more than 30 meters. The slope stability report shall be submitted to concerned Regional office of MoEF&CC, Govt. of India, Chennai as well as SEIAA, Tamilnadu.
9. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures undertaken accordingly. The report on the periodic monitoring shall be submitted to TNPCB once in 6 months.
10. Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
11. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
12. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper escapements as per the advice of local forest

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authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.

13. **Noise and Vibration Related:** (i) The Proponent shall carry out only the Controlled Blasting operation using NONEL shock tube initiation system during daytime. Usage of other initiation systems such as detonating cord/fuse, safety fuse, ordinary detonators, cord relays, should be avoided in the blasting operation. The mitigation measures for control of ground vibrations and to arrest fly rocks should be implemented meticulously under the supervision of statutory competent persons possessing the I / II Class Mines Manager / Foreman / Blaster certificate issued by the DGMS under MMR 1961, appointed in the quarry. No secondary blasting of boulders shall be carried out in any occasions and only the Rock Breakers (or) other suitable non-explosive techniques shall be adopted if such secondary breakage is required. The Project Proponent shall provide required number of the security sentries for guarding the danger zone of 500 m radius from the site of blasting to ensure that no human/animal is present within this danger zone and also no person is allowed to enter into (or) stay in the danger zone during the blasting. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.
14. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
15. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
16. The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.
17. The proponent shall ensure that the transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools /

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hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried rough stones; and transport of rough stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.

18. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
19. After mining operations are completed, the mine closure activities as indicated in the mine closure plan shall be strictly carried out by the Proponent fulfilling the necessary actions as assured in the Environmental Management Plan.
20. The Project proponent shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.
21. The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.
22. The project proponent shall ensure that the provisions of the MMRD, 1956, the MCDR 2017 and Tamilnadu Minor Mineral Concession Rules 1959 are compiled by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.
23. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.
24. The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.
25. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying

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operation, if the project site attracts the NBWL clearance, as per the existing law from time to time.

26. All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.
27. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
28. The Project proponent shall install a Display Board at the entrance of the mining lease area/abutting the public Road, about the project information as shown in the **Appendix – II** of this minute.

Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	*Aegle marmelos*	Vilvam	வில்வம்
2	*Adenaanthera pavonina*	Manjadi	மஞ்சாடி, ஆனைக்குன்றிமணி
3	*Albizia lebbeck*	Vaagai	வாகை
4	*Albizia amara*	Usil	உசில்
5	*Bauhinia purpurea*	Mantharai	மந்தாரை
6	*Bauhinia racemosa*	Aathi	ஆத்தி
7	*Bauhinia tomentos*	Iruvathi	இருவாத்தி
8	*Buchanania axillaris*	Kattuma	காட்டுமா
9	*Borassus flabellifer*	Panai	பனை
10	*Butea monosperma*	Murukkamaram	முருக்கமரம்
11	*Bobax ceiba*	Ilavu, Sevvilavu	இலவு
12	*Calophyllum inophyllum*	Punnai	புன்னை
13	*Cassia fistula*	Sarakondrai	சரக்கொன்றை
14	*Cassia roxburghii*	Sengondrai	செங்கொன்றை
15	*Chloroxylon sweitenia*	Purasamaram	புரசு மரம்
16	*Cochlospermum religiosum*	Kongu, Manjalllavu	கோங்கு, மஞ்சள் இலவு
17	*Cordia dichotoma*	Naruvuli	நருவுலி
18	*Creteva adansoni*	Mavalingum	மாவிலங்கம்
19	*Dillenia indica*	Uva, Uzha	உசா
20	*Dillenia pentagyna*	SiruUva, Sitruzha	சிறு உசா
21	*Diospyro sebenum*	Karungali	கருங்காலி
22	*Diospyro schloroxylon*	Vaganai	வாகனை
23	*Ficus amplissima*	Kalltchi	கல் இச்சி
24	*Hibiscus tiliaceou*	Aatrupoovarasu	ஆற்றுப்பூவரசு
25	*Hardwickia binata*	Aacha	ஆச்சா
26	*Holoptelia integrifolia*	Aayili	ஆயா மரம், ஆயிலி
27	*Lannea coromandelica*	Odhiam	ஓதியம்
28	*Lagerstroemia speciosa*	Poo Marudhu	பூ மருது
29	*Lepisanthus tetraphylla*	Neikottaimaram	நெய் கொட்டை மரம்
30	*Limonia acidissima*	Vila maram	விளா மரம்
31	*Litsea glutinos*	Pisinpattai	அரம்பா, பிசின்பட்டை
32	*Madhuca longifolia*	Illuppai	இலுப்பை
33	*Manilkara hexandra*	UlakkaiPaalai	உலக்கை பாலை
34	*Mimusops elengi*	Magizhamaram	மகிழமரம்
35	*Mitragyna parvifolia*	Kadambu	கடம்பு
36	*Morinda pubescens*	Nuna	நுனா
37	*Morinda citrifolia*	Vellai Nuna	வெள்ளை நுனா
38	*Phoenix sylvestre*	Eachai	ஈச்சமரம்
39	*Pongamia pinnat*	Pungam	புங்கம்

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40	*Premna mollissima*	Munnai	முன்னை
41	*Premna serratifolia*	Narumunnai	நறு முன்னை
42	*Premna tomentosa*	Malaipoovarasu	மலை பூவரசு
43	*Prosopis cinerea*	Vanni maram	வன்னி மரம்
44	*Pterocarpus marsupium*	Vengai	வேங்கை
45	*Pterospermum canescens*	Vennangu, Tada	வெண்ணாங்கு
46	*Pterospermum xylocarpum*	Polavu	புலவு
47	*Putranjiva roxburghi*	Karipala	கரிபாலா
48	*Salvadora persica*	Ugaa Maram	உகா மரம்
49	*Sapindus emarginatus*	Manipungan, Soapukai	மணிப்புங்கன் சோப்புக்காய்
50	*Saraca asoca*	Asoca	அசோகா
51	*Streblus asper*	Piray maram	பிராய் மரம்
52	*Strychnos nuxvomic*	Yetti	எட்டி
53	*Strychnos potatorum*	Therthang Kottai	தேத்தான் கொட்டை
54	*Syzygium cumini*	Naval	நாவல்
55	*Terminalia belleric*	Thandri	தான்றி
56	*Terminalia arjuna*	Ven marudhu	வெண் மருது
57	*Toona ciliate*	Sandhana vembu	சந்தன வேம்பு
58	*Thespesia populnea*	Puvarasu	பூவரசு
59	*Walsuratrifoliata*	valsura	வால்சுரா
60	*Wrightia tinctoria*	Veppalai	வெப்பாலை
61	*Pithecellobium dulce*	Kodukkapuli	கொடுக்காப்புளி

Appendix –II

Display Board

(Size 6' x5' with Blue Background and White Letters)

.....சுரங்கம்

சுரங்கங்களில் குவாரி செயல்பாடுகளுக்கான சுற்றுச்சூழல் அனுமதி கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது SEIAA/——, தேதியிடப்பட்டு, சுற்றுச்சூழல் அனுமதி ____தேதி வரை செல்லத்தக்கதாக உள்ளது.

பசுமை பகுதி வளர்ச்சி மேம்பாட்டுக்கான சுரங்கத் திட்டம்	குவாரியின் எல்லையைச் சுற்றி வேலி அமைக்க வேண்டும்
	சுரங்கப்பாதையின் ஆழம் நலமட்டத்திலிருந்து ___மீட்டர்க்கு மிகாமல் இருக்க வேண்டும்
	சுற்றில் மாசு ஏற்படாதவாறு சுரங்க பணிகளை மேற்கொள்ள வேண்டும்.
நடப்பட்டு பராமரிக்கப்பட வேண்டிய மரங்கள் எண்ணிக்கை:	வாகனங்கள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு தண்ணீரை முறையாக தண்ணீர் வாரிகளின் மூலமாக அவ்வப்போது தெளிக்க வேண்டும்.
	இரைச்சல் அளவையும் தூசி மாசுபாட்டையும் குறைப்பதற்காக குவாரியின் எல்லையை சுற்றி அடர்த்தியான பசுமை பகுதியை ஏற்படுத்த வேண்டும்.
சுரங்கத்தில் வெடி வைக்கும்பொழுது நிலஅதிர்வுகள் ஏற்படாதவாறும் மற்றும் கற்கள் பறக்காதவாறும் பாதுகாப்பு நடவடிக்கைகளை உள்ளிட்டாக செயல்படுத்தப்பட வேண்டும்.	
சுரங்கத்தில் இருந்து ஏற்படும் இரைச்சல் அளவு 85 டெசிபல்ஸ் (dBA) அளவிற்கு மேல் ஏற்படாதவாறு தகுந்த கட்டுப்பாடுகளை மேற் கொள்ள வேண்டும்.	
சுரங்க சட்ட விதிகள் 1955ன் கீழ் சுரங்கத்தில் உள்ள பணியாளர்களுக்கு தகுந்த பாதுகாப்பு கருவிகள் வழங்கவதோடு கதாதாரமுள்ள வழிப்பறை வசதிகளை செய்து தர வேண்டும்.	
கிராமம் அல்லது பஞ்சாயத்து வழியாக வாகனங்கள் செல்லும் சாலையை தொடர்ந்து நன்கு பராமரிக்க வேண்டும்.	
சுரங்கப்பணிகளால் அருகில் உள்ள விவசாயப் பணிகள் மற்றும் நீர்நிலைகள் பாதிக்கப்படக் கூடாது.	
நீர்நிலைகள் பாதிக்கப்படாமல் இருப்பதை உறுதி செய்யும் வகையில் நிலத்தடி நீரின் தரத்தினை தொடர்ந்து கண்காணிக்க வேண்டும்.	
சுரங்கத்திலிருந்து கனிம பொருட்களை எடுத்துச் செல்வது கிராம மக்களுக்கு எந்தத் சிரமத்தினையும் ஏற்படுத்தாதவாறு பாதுகாப்போடும் மற்றும் சுற்றுசூழல் பாதிக்காத வண்ணம் வாகனங்களை இயக்க வேண்டும்.	
சுரங்கப்பணிகள் முடிக்கப்பட்டவுடன் சுரங்க மூடல் திட்டத்தில் உள்ளவாறு சுரங்கத்தினை மூட வேண்டும்.	
சுரங்க நடவடிக்கைகளை முடித்தபின்னர் சுரங்கப் பகுதி மற்றும் சுரங்க நடவடிக்கைகளால் இடையூறு ஏற்படக்கூடிய வேறு எந்தப் பகுதியையும் மறுசுழற்சிமானம் செய்து தாவரங்கள் விலங்குகள் ஆகியவற்றின் வாழ்ச்சிக்கு ஏற்ற வகையில் பசுமைப்பகுதியை உருவாக்க வேண்டும்.	
முழுமையான நிபந்தனைகளை அறிய பார்வேப் (http://parivesh.nic.in) என்ற இணையதளத்தைப் பார்வையிடவும் மேலும் எந்தவித சுற்றுச்சூழல் சார்ந்த புகார்களுக்கு சென்னையில் உள்ள சுற்றுச்சூழல் மற்றும் வன அமைச்சகத்தின் ஒருங்கிணைந்த வட்டார அலுவலகம்: 044 – 28222325 (அல்லது) தமிழ்நாடு மாசு கட்டுப்பாடு வாரியத்தின் மாவட்ட சுற்றுச்சூழல் பொறியாளரை அணுகவும்.	

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Discussion by SEIAA and the Remarks:-

The proposal was placed in the 594th Authority meeting held on 18.02.2023. The authority noted that the subject was appraised in 349th SEAC meeting held on 20.01.2023. SEAC has furnished its recommendations for granting Environmental Clearance subject to the conditions stated therein.

After detailed discussions, the Authority taking into account the safety aspects and to ensure sustainable, scientific and systematic mining, decided to grant Environmental Clearance for the quantity of **64,578 m^3 of Rough Stone and depth up to 27m BGL as per** the mine plan approved by the Department of Geology & Mining. This is also subject to the standard conditions as per Annexure - (I) of SEAC minutes, other normal conditions stipulated by MOEF&CC & all other specific conditions as recommended by SEAC in addition to the following conditions and the conditions in Annexure 'A' of this minutes.

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 subject to review by District Collector, Mines Dept. and TNPCB on completion of every 5 years till the project life. They should also review the EC conditions to ensure that they have all been adhered to and implemented.
3. The project proponent shall furnish a Certified Compliance Report obtained from MoEF& CC while seeking a renewal of the mining plan to cover the project life.
4. The progressive and final mine closure plan including the green belt implementation and environmental norms should be strictly followed as per the EMP.

Annexure '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.

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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.

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 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

Safe mining Practices

6. The AD/DD, Dept. of Geology &Mining shall ensure operation of the proposed quarry after the submission slope stability study conducted through the reputed research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc.
7. The AD/DD, Dept. of Geology & Mining & Director General of Mine safety shall ensure strict compliance and implementation of bench wise recommendations/ action plans as recommended in the scientific slope stability study of the reputed research & Academic Institutions as a safety precautionary measure to avoid untoward accidents during mining operation.

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8. 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.

Water Environment – Protection and mitigation measures

9. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area.
10. The proponent shall ensure that the activities do not impact the water bodies/wells in the neighboring open wells and bore wells. The proponent shall ensure that the activities do not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity or impact the water table and levels. The proponent shall ensure that the activities do not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
11. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report.
12. 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.
13. 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.
14. 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.
15. Regular monitoring of ground water level and water quality shall be carried out around the mine area during mining operation. 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.

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16. 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.

Air Environment – Protection and mitigation measures

17. The activity should not result in CO_2 release and temperature rise and add to micro climate alternations.
18. The proponent shall ensure that the activities undertaken do not result in carbon emission, and temperature rise, in the area.
19. 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.

Soil Environment – Protection and mitigation measures

20. The proponent shall ensure that the operations do not result in loss of soil biological properties and nutrients.
21. The proponent shall ensure that activity does not deplete the indigenous soil seed bank and disturb the mycorrizal fungi, soil organism, soil community nor result in eutrophication of soil and water.
22. 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.
23. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
24. The proponent shall ensure that the mine restoration is done using mycorrizal VAM, vermin-composting, Biofertilizers to ensure soil health and biodiversity conservation.
25. The proponent shall ensure that the topsoil is protected and used in planting activities in the area.
26. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.
27. 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

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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 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.

Noise Environment – Protection and mitigation measures

28. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
29. The sound 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. Hence, the PP shall ensure that the biological clock of the villages are not disturbed because of the mining activity.

Biodiversity - Protection and mitigation measures

30. 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.
31. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activity does not result in invasion by invasive alien species. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around.

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32. The proponent shall ensure that the activities do not disturb the agro biodiversity and agro farms. Actions to be taken to promote agro forestry, mixed plants to support biodiversity conservation in the mine restoration effort.
33. 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.
34. The proponent shall ensure that the activities do not impact green lands/grazing fields of all types surrounding the mine lease area which are food source for the grazing cattle.

Climate Change

35. The project activity should not in any way impact the climate and lead to a rise in temperature.
36. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change.
37. Intensive mining activity should not add to temperature rise and global warming.
38. Operations should not result in GHG releases and extra power consumption leading to Climate Change.
39. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations.
40. Mining Operation should not result in droughts, floods and water stress, and shortages, affecting water security both on site and in the vicinity.
41. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water.
42. 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.

Green Belt Development

43. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) are planted.
44. The proponent shall ensure the area is restored and rehabilitated with native trees as recommended in SEAC Minutes (in Appendix).

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Workers and their protection

45. 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.
46. 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.
47. The workers shall be employed for working in the mines and the working hours and the wages shall be implemented/enforced as per the Mines Act, 1952.

Transportation

48. 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.
49. 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-

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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.

Storage of wastes

50. 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.

CER/EMP

51. The CER Should be fully Implemented and fact reflected in the Half-yearly compliance report.
52. The EMP Shall also be implemented in consultation with local self-government institutions.
53. The follow-up action on the implementation of CER Shall be included in the compliance report.

Directions for Reclamation of mine sites

54. 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.
55. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
56. 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.

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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.

57. For mining area reclamation plot culture experiments to be done to identify/ determine suitable species for the site.
58. 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.
59. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site.
60. 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.
61. 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.
62. 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.
63. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoils should have necessary physical, chemicals, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread.
64. 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.

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Mine waste to be used for backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. The land disturbed should be reshaped for long term use. Mining should be as far as possible be ecofriendly. Integration of rehabilitation strategies with mining plan will enable speedy restoration.

65. Efforts should to taken to aesthetically improve the mine site. Generally, there are two approaches to restoration i.e Ecological approach which allows tolerant species to establish following the succession process allowing pioneer species to establish. The other approach i.e plantation approach is with selected native species are planted. A blend of both methods may be resorted to restore the site by adding soil humas and mycorrhiza.
66. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

Part-A: Conditions to be Complied before commencing mining operations:-

1. **The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that**
   - **I. The project has been accorded Environmental Clearance.**
   - **II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.**
   - **III. Environmental Clearance may also be seen on the website of the SEIAA.**
   - **IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.**
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

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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

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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.

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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.

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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.

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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.

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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.

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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, NOx 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: <u>General Conditions:</u>

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
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.

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4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

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14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining tphe 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

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and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

22. Any other conditions stipulated by other Statutory/Government authorities shall be complied
23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Pudukottai District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. File Copy

Signature Not Verified
Digitally signed by Thiru.Deepak S.Bilgi
Member Secretary
Date: 3/17/2023 7:14:53 PM

CHENNAI METTEX LAB PRIVATE LIMITED®

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022270 Test Certificate Date : 07.06.2025

Location of Sampling : AAQ-1 Core Zone - 10°26'52.58"N 78°46'23.60"E

Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)

Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/40 & 24.11.2025

Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/38 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	61.5	30.6	18.7	4.1	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	60.3	31.1	19.1	4.7	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	62.2	32.2	19.4	5.2	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	63.0	30.9	18.2	5.5	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	62.5	33.3	18.8	6.0	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	61.9	32.5	20.0	4.6	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	61.1	34.1	19.2	5.1	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	62.4	35.0	19.7	4.4	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	61.5	31.6	18.1	4.9	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	62.5	33.4	18.5	6.0	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	62.9	31.1	19.5	5.7	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	60.3	32.0	18.4	5.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	61.1	34.6	18.1	5.3	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	60.9	33.7	19.9	5.8	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	61.8	30.5	19.2	4.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	62.0	31.1	20.0	4.7	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	62.5	32.9	18.3	4.0	19.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	60.1	30.9	19.6	5.0	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	60.4	33.3	18.5	5.1	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	61.3	30.0	19.0	5.4	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	62.8	31.1	20.0	4.9	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	63.0	30.7	19.4	4.7	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	62.7	30.2	18.6	4.4	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	61.5	35.0	19.9	4.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	60.9	33.6	18.2	6.0	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	60.7	31.2	19.4	5.2	19.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ,**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

NOTE: Any unauthorized alteration, forgery or falsification of the content or appearance of this document is liable for legal action. Unless otherwise stated the submitted results in this test report refer only to the sample(s) tested and such sample(s) are retained for 15 days only from the completion date of testing , except in case of regulatory samples, which will be retained for a specific period as per statutory requirement; while perishable & environmental testing related remnant samples will be discarded consequent upon completion of testing. Samples are not drawn by us unless otherwise stated. This document cannot be reproduced except in full, without prior written approval of the laboratory. This report is for the exclusive use of Chennai Mettex Lab's customer, and is provided in accordance with the agreement between Chennai Mettex Lab and its Customer.

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022271 Test Certificate Date : 07.06.2025

Location of Sampling : AAQ-2 Near Crusher - 10°26'43.88"N 78°46'34.67"E

Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)

Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/42 & 24.11.2025

Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/39 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	62.2	31.2	19.5	4.5	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	60.7	30.6	18.7	4.9	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	61.1	30.9	18.3	5.2	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	63.0	34.7	19.2	5.5	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	62.0	33.6	19.4	6.0	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	61.9	32.8	20.0	4.4	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	62.7	30.1	18.2	4.1	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	61.4	31.5	18.9	4.6	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	63.0	30.9	19.7	5.3	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	61.9	30.7	19.5	5.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	60.2	32.9	19.1	5.8	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	60.7	34.1	20.0	4.5	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	62.1	33.9	18.4	4.9	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	61.5	33.3	19.2	5.0	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	60.0	30.5	19.5	5.2	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	60.4	31.2	19.7	6.0	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	62.5	32.9	19.0	4.2	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	63.0	34.7	18.2	4.6	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	61.9	34.1	18.5	5.1	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	60.7	35.0	19.1	5.0	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	60.9	32.8	18.8	4.3	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	61.1	30.6	19.4	4.4	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	62.2	31.2	18.5	5.9	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	63.0	33.4	20.0	6.0	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	60.2	34.7	19.7	5.5	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	61.9	33.9	19.1	4.7	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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CHENNAI METTEX LAB PRIVATE LIMITED®

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022272 Test Certificate Date : 07.06.2025

Location of Sampling : AAQ-3 Near Quarry - 10°27'5.34"N 78°46'11.16"E
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/43 & 24.11.2025
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/40 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	61.5	31.5	19.2	4.2	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	60.7	30.8	18.5	5.3	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	62.2	33.2	19.3	5.5	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	63.0	32.3	20.0	6.0	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	61.8	34.1	19.5	4.7	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	62.6	31.6	19.8	4.9	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	60.9	30.5	18.8	5.7	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	60.0	32.2	18.2	5.9	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	61.4	33.6	20.0	4.8	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	62.9	34.3	18.3	5.6	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	63.0	35.0	18.4	5.5	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	60.8	31.8	19.6	6.3	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	61.0	30.0	19.9	5.4	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	62.6	30.6	21.0	4.9	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	60.4	32.2	20.1	6.5	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	61.5	33.3	20.5	6.2	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	62.0	34.1	19.2	5.5	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	61.9	35.0	20.9	4.8	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	60.3	34.8	18.3	4.6	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	60.9	33.9	18.8	5.8	19.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	62.0	32.1	19.3	4.9	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	60.2	31.7	19.5	5.7	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	61.8	31.6	19.9	5.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	61.7	33.4	20.0	4.8	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	63.3	35.0	18.9	5.2	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	62.5	34.2	18.5	6.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3** BDL (DL:20); **O_3** BDL (DL:20); **CO** BDL (DL:1.0); **Pb** BDL (DL:0.1); **Ni** BDL (DL:1.0); **As** BDL (DL:1.0); **C_6H_6** BDL (DL:1.0); **BaP** BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022273 Test Certificate Date : 07.06.2025

Location of Sampling : AAQ-4 Muthudaiyanpatti (Residential) - 10°26'58.15"N 78°44'39.91"E

Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)

Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/44 & 24.11.2025

Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/41 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	63.5	35.5	22.3	5.4	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	62.3	35.9	20.4	4.7	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	64.4	36.7	20.9	5.1	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	65.0	37.4	21.6	5.8	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	62.1	38.1	21.9	6.0	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	63.3	36.9	23.5	6.2	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	64.1	36.5	23.6	5.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	62.8	37.7	20.9	4.9	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	63.5	36.2	24.0	5.1	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	64.4	35.5	23.6	5.5	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	65.0	35.9	23.3	6.1	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	63.4	38.2	20.1	6.5	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	62.2	36.4	20.4	5.3	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	62.9	35.2	21.1	4.5	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	64.1	35.8	22.6	4.7	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	64.4	36.9	20.1	5.8	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	65.0	36.8	20.6	4.9	24.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	63.9	39.7	23.3	5.5	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	62.2	39.4	24.0	4.6	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	63.1	38.1	21.1	5.2	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	62.5	38.2	20.8	5.0	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	63.3	35.7	20.5	6.2	23.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	63.6	35.9	21.6	6.4	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	64.5	36.6	22.2	6.5	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	62.4	37.9	22.9	5.5	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	62.9	38.5	23.3	4.7	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022274 Test Certificate Date : 07.06.2025
Location of Sampling : AAQ-5 Maruthanthalai (School) - 10°26'25.26"N 78°45'32.93"E
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/45 & 24.11.2025
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/42 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	63.8	36.2	24.0	5.6	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	64.1	35.5	21.5	6.1	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	62.2	36.8	21.9	5.7	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	64.9	35.9	23.3	4.8	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	65.0	36.4	22.7	5.0	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	64.3	37.4	20.8	4.9	24.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	63.3	38.1	21.6	5.5	24.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	62.8	35.7	21.9	4.6	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	62.4	36.1	22.2	5.2	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	63.5	39.4	23.8	6.0	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	62.1	40.0	24.0	5.9	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	64.5	39.5	20.7	6.2	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	63.9	35.7	20.9	6.4	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	62.5	36.4	21.1	5.5	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	64.1	38.2	21.3	4.5	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	63.2	35.5	23.0	6.3	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	65.0	36.9	23.8	6.1	24.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	62.5	35.5	22.1	5.8	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	63.3	35.7	23.9	4.6	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	64.1	37.7	24.0	5.4	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	64.5	38.2	21.0	5.0	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	62.2	39.1	20.5	4.9	23.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	62.8	40.0	20.9	4.8	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	63.9	39.5	21.1	5.6	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	64.4	38.4	21.8	5.3	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	65.0	38.9	22.5	5.1	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 I CIN : U74999TN2008PTC069459
Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022275 Test Certificate Date : 07.06.2025

Location of Sampling : AAQ-6 Sathyamangalam (College) - 10°28'46.44"N 78°46'30.61"E

Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)

Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/46 & 24.11.2025

Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/44 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	63.1	36.1	21.3	4.8	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	62.9	35.5	20.5	4.6	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	64.7	36.8	23.3	5.3	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	65.0	37.0	22.9	6.1	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	62.8	38.4	22.2	5.7	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	63.9	38.7	24.0	4.9	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	64.2	39.1	23.5	6.3	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	62.4	35.9	20.9	6.4	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	65.0	36.2	21.1	5.2	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	63.3	36.8	20.5	5.5	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	64.3	39.5	21.9	4.5	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	63.9	35.4	22.3	6.3	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	64.1	40.0	23.9	5.3	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	62.5	37.4	24.0	5.5	24.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	64.7	35.9	20.1	5.2	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	62.8	36.6	20.9	4.9	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	63.3	38.2	23.5	4.8	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	63.9	38.8	23.2	6.1	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	64.6	39.3	22.4	6.4	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	62.2	36.8	20.1	5.6	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	63.5	35.7	20.9	6.0	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	65.0	35.4	21.6	5.8	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	64.1	38.1	22.8	4.5	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	63.8	37.6	23.6	6.2	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	62.2	39.2	20.2	4.9	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	62.7	38.8	21.1	5.5	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022276 Test Certificate Date : 07.06.2025

Location of Sampling : AAQ-7 Kurujalayapatti (Residential) - 10°24'20.44"N 78°46'12.24"E

Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)

Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/49 & 24.11.2025

Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/45 & 25.11.2025

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
05.03.2025	7:00-7:00	64.4	37.6	20.5	5.2	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.03.2025	7:30-7.30	62.1	36.5	22.9	4.8	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.03.2025	7:00-7:00	65.0	35.9	23.4	5.3	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.03.2025	7:30-7.30	63.8	36.2	21.1	5.9	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.03.2025	7:00-7:00	62.9	38.7	20.8	6.2	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.03.2025	7:30-7.30	63.3	40.0	24.2	6.5	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.03.2025	7:00-7:00	64.1	39.6	23.6	5.4	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.03.2025	7:30-7.30	63.2	38.3	23.5	5.3	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.04.2025	7:00-7:00	62.5	37.4	22.8	6.0	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03.04.2025	7:30-7.30	64.9	37.7	22.3	5.9	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.04.2025	7:00-7:00	65.0	36.2	24.1	4.5	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.04.2025	7:30-7.30	62.8	35.8	20.3	4.7	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.04.2025	7:00-7:00	63.8	36.9	21.2	5.2	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.04.2025	7:30-7.30	64.1	37.4	20.8	5.6	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.04.2025	7:00-7:00	64.5	39.9	22.9	6.1	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.04.2025	7:30-7.30	63.6	38.1	23.5	6.2	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30.04.2025	7:00-7:00	62.5	38.5	24.0	4.8	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.05.2025	7:30-7.30	62.3	37.2	23.7	5.5	25.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.05.2025	7:00-7:00	62.7	36.5	22.2	4.6	24.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.05.2025	7:30-7.30	64.8	35.4	20.1	5.6	23.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.05.2025	7:00-7:00	64.5	39.0	22.8	5.8	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.05.2025	7:30-7.30	65.0	36.3	21.6	6.0	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.05.2025	7:00-7:00	62.3	40.0	23.7	4.9	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.05.2025	7:30-7.30	62.9	38.5	23.3	6.4	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.05.2025	7:00-7:00	64.5	39.1	22.2	5.6	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.05.2025	7:30-7.30	63.9	37.3	21.4	5.8	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit **DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T02 Test Certificate Date : 07.06.2025

Sample Description : Ambient Noise Monitoring
Location of Sampling : N1 – Core Zone - 10°26'53.52"N 78°46'22.02"E
Location of Sampling : N2 – Near Crusher - 10°26'42.62"N 78°46'29.36"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : CML/ENV/SLM/001 & CML/ENV/SLM/009

Sampling Date : 28.03.2025						
Location	N1 – Core zone			N2 - Near Crusher		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	35.5	44.1	41.65	42.5	50.8	48.39
07:00-08:00	36.1	44.5	42.08	42.6	51.1	48.66
08:00-09:00	36.3	45.1	42.63	43.2	51.2	48.83
09:00-10:00	36.8	45.3	42.86	43.8	52.3	49.86
10:00-11:00	37.9	45.9	43.53	44.1	53.9	51.32
11:00-12:00	39.6	46.1	43.97	43.5	55.6	52.85
12:00-13:00	41.7	46.8	44.96	44.6	58.2	55.38
13:00-14:00	39.7	47.3	44.99	45.2	58.8	55.98
14:00-15:00	41.5	47.8	45.70	45.9	59.1	56.29
15:00-16:00	41.9	48.3	46.19	46.3	58.2	55.46
16:00-17:00	39.9	47.2	44.93	46.7	57.3	54.65
17:00-18:00	42.6	43.4	43.02	47.2	56.2	53.70
18:00-19:00	41.5	43.5	42.61	49.3	55.5	53.42
19:00-20:00	39.3	43.9	42.18	47.3	53.9	51.75
20:00-21:00	39.2	42.1	40.89	46.8	52.2	50.29
21:00-22:00	38.8	41.5	40.36	45.7	50.5	48.73
22:00-23:00	37.4	40.7	39.36	44.4	49.1	47.36
23:00-00:00	36.8	38.5	37.73	42.6	48.8	46.72
00:00-01:00	35.1	36.2	35.68	35.2	39.2	37.65
01:00-02:00	35.9	37.1	36.54	41.1	39.9	40.54
02:00-03:00	36.2	37.9	37.13	41.9	40.6	41.30
03:00-04:00	36.8	38.2	37.56	42.2	41.6	41.91
04:00-05:00	36.9	38.7	37.89	42.6	42.2	42.40
05:00-06:00	37.1	40.5	39.12	43.1	43.3	43.20
Result	Day Means		**43.1**	Day Means		**51.9**
	Night Means		**37.6**	Night Means		**42.6**

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022277 Test Certificate Date : 07.06.2025

Sample Description : Ambient Noise Monitoring
Location of Sampling : N3 – Near Quarry - 10°27'6.39"N 78°46'12.63"E
Location of Sampling : N4 – Muthudaiyanpatti (Residential) - 10°27'1.45"N 78°47'4.03"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : CML/ENV/SLM/003 & CML/ENV/SLM/001

Sampling Date : 25.04.2025						
Location	N3 – Near Quarry			N4 - Muthudaiyanpatti (Residential)		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	40.5	49.1	46.65	35.8	42.5	40.33
07:00-08:00	41.6	49.4	47.06	35.9	43.7	41.36
08:00-09:00	41.8	50.2	47.78	36.4	44.6	42.20
09:00-10:00	42.5	51.5	49.00	37.8	45.6	43.26
10:00-11:00	43.3	53.6	50.98	38.4	46.2	43.86
11:00-12:00	44.3	55.3	52.62	39.1	46.7	44.39
12:00-13:00	45.2	56.4	53.71	40.2	47.2	44.98
13:00-14:00	44.4	58.2	55.37	39.2	47.9	45.44
14:00-15:00	42.6	57.8	54.92	41.3	48.8	46.50
15:00-16:00	43.8	56.3	53.53	42.5	49.2	47.03
16:00-17:00	44.2	54.2	51.60	41.2	50.1	47.62
17:00-18:00	44.6	53.9	51.37	41.9	49.3	47.02
18:00-19:00	45.1	52.6	50.30	40.2	47.1	44.90
19:00-20:00	45.6	51.4	49.40	39.1	46.6	44.30
20:00-21:00	44.3	50.8	48.67	39.5	46.1	43.95
21:00-22:00	43.2	49.2	47.16	38.6	44.2	42.25
22:00-23:00	41.5	48.2	46.03	36.1	42.1	40.06
23:00-00:00	39.7	46.4	44.23	37.6	41.3	39.83
00:00-01:00	35.9	37.7	36.89	35.9	39.1	37.79
01:00-02:00	36.8	38.3	37.61	36	39.1	37.82
02:00-03:00	37.2	38.9	38.13	36.2	40.9	39.16
03:00-04:00	37.9	39.2	38.60	36.6	41.7	39.86
04:00-05:00	38.3	40.2	39.35	36.7	42.9	40.82
05:00-06:00	38.9	42.5	41.06	37.4	43.2	41.20
Result	**Day Means**		**50.4**	**Day Means**		**44.1**
	Night Means		**40.2**	**Night Means**		**39.6**

Note: CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022278 Test Certificate Date : 07.06.2025

Sample Description : Ambient Noise Monitoring
Location of Sampling : N5 – Maruthanthalai (School) - 10°26'24.91"N 78°45'32.90"E
Location of Sampling : N6 – Sathyamangalam (College) - 10°28'46.47"N 78°46'30.25"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : CML/ENV/SLM/009 & CML/ENV/SLM/001

Sampling Date : 16.05.2025						
Location	N5 - Maruthanthalai (School)			N6 – Sathyamangalam (College)		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	36.5	41.2	39.46	39.8	43.5	42.03
07:00-08:00	37.8	40.6	39.42	38.7	44.6	42.58
08:00-09:00	38.9	42.7	41.20	41.5	45.7	44.09
09:00-10:00	39.7	43.5	42.00	42.5	47.8	45.91
10:00-11:00	40.6	44.6	43.05	43.3	49.8	47.67
11:00-12:00	41.8	45.7	44.17	44.3	48.7	47.03
12:00-13:00	42.7	46.8	45.22	45.2	49.8	48.08
13:00-14:00	43.8	48.9	47.06	44.4	50.7	48.60
14:00-15:00	45.7	49.8	48.22	42.6	49.7	47.46
15:00-16:00	47.8	50.4	49.29	43.8	48.7	46.91
16:00-17:00	48.9	51.6	50.46	44.2	47.6	46.22
17:00-18:00	46.7	49.8	48.52	44.6	46.7	45.78
18:00-19:00	44.3	48.7	47.03	45.1	49.8	48.06
19:00-20:00	42.1	46.7	44.98	45.6	48.7	47.42
20:00-21:00	40.9	43.7	42.52	44.3	47.6	46.26
21:00-22:00	39.8	42.6	41.42	43.2	46.7	45.29
22:00-23:00	38.7	41.6	40.39	41.5	44.5	43.25
23:00-00:00	37.6	40.3	39.16	39.7	45.6	43.58
00:00-01:00	37.6	39.8	38.84	35.9	43.4	41.10
01:00-02:00	38.9	40.5	39.77	36.8	41.8	39.98
02:00-03:00	39.7	41.5	40.69	37.2	40.5	39.16
03:00-04:00	36.8	38.6	37.79	37.9	40.3	39.26
04:00-05:00	37.2	39.8	38.69	38.3	41.6	40.26
05:00-06:00	35.6	38.1	37.03	38.9	40.7	39.89
Result	Day Means		44.4	Day Means		46.0
	Night Means		39.0	Night Means		40.8

Note: CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
M. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough Stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Test Certificate No : CML/25-26/T022279 Test Certificate Date : 07.06.2025

Sample Description : Ambient Noise Monitoring
Location of Sampling : N7 – Kurujalayapatti (Residential) - 10°24'20.22"N 78°46'11.82"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : CML/ENV/SLM/001

Location	N7 - Kurujalayapatti (Residential)		
Parameter	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)
06:00-07:00	41.5	49.8	47.39
07:00-08:00	41.8	49.9	47.52
08:00-09:00	42.2	50.4	48.00
09:00-10:00	43.7	50.2	48.07
10:00-11:00	43.9	51.4	49.10
11:00-12:00	43.5	51.5	49.13
12:00-13:00	44.3	52.9	50.45
13:00-14:00	41.4	51.1	48.53
14:00-15:00	42.9	50.1	47.85
15:00-16:00	41.1	49.7	47.25
16:00-17:00	42.5	48.4	46.38
17:00-18:00	43.7	47.5	46.00
18:00-19:00	44.9	48.6	47.13
19:00-20:00	45.3	49.2	47.67
20:00-21:00	46.1	50.2	48.62
21:00-22:00	45.7	49.9	48.29
22:00-23:00	42.1	49.3	47.05
23:00-00:00	40.4	48.8	46.38
00:00-01:00	36.1	40.5	38.83
01:00-02:00	36.9	41.3	39.63
02:00-03:00	37.8	41.6	40.10
03:00-04:00	38.4	42.8	41.13
04:00-05:00	38.9	43.4	41.71
05:00-06:00	39.5	44.7	42.84
Result	Day Means		**47.9**
	Night Means		**42.2**

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Cust. Ref : SRF Dated : 28.05.2025.

Lab No : 2608088/001

Sample Description (as stated by customer) : **Surface Water (SW-1) – Tank Near Nakera Vayal**

T.C Date : 07.06.2025

T.C No : CML/25-26/T022280

Date Of Receipt : 29.05.2025

Analysis Commenced On: 29.05.2025

Analysis Completed On : 07.06.2025

TEST	PROTOCOL	RESULTS
Discipline: Chemical		**Group:** Water
Colour	IS 3025 Part 4:2021	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	8.02
Conductivity @ 25°C	IS 3025 Part 14:2013	1549.0 µmhos/cm
Turbidity	IS 3025 Part 10:2023	4 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	914.0mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	260.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	69.3 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	22.3 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	228.5 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	276.8 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	65.8 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.51 mg/l
*Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.42 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	12.5 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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Email : test@mettexlab.com I Web : www.mettexlab.com

Lab No: 2608088/001 T.C No: CML/25-26/T022280 Dated : 07.06.2025

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:2023	14.6 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2023	45.9 mg/l
Dissolved Oxygen	IS 3025 Part 38:1989 (Azide Modification)	6.5 mg/l
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	28.9 mg/l
Discipline: Biological		**Group:** Water
Total Coliform	APHA 24th Edn. 2023-9221 B	1600 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	210 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, *To be applicable only when water is chlorinated.		

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
B. ARUNAN
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Cust. Ref : SRF Dated : 28.05.2025.

Lab No : 2608088/002

Sample Description : **Surface Water (SW-2) – Tank Near Siruvayal**
(as stated by customer)

T.C Date : 07.06.2025

T.C No : CML/25-26/T022281

Date Of Receipt : 29.05.2025

Analysis Commenced On: 29.05.2025

Analysis Completed On : 07.06.2025

TEST	PROTOCOL	RESULTS
Discipline: Chemical		**Group:** Water
Colour	IS 3025 Part 4:2021	7 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	8.12
Conductivity @ 25°C	IS 3025 Part 14:2013	1738.0 µmhos/cm
Turbidity	IS 3025 Part 10:2023	6 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	1025 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	270.6 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	68.0 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	24.5 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	256.8 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	298.6 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	75.9 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.62 mg/l
*Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.59 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	16.8 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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Email : test@mettexlab.com I Web : www.mettexlab.com

Lab No: 2608088/002 T.C No: CML/25-26/T022281 Dated : 07.06.2025

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:2023	18.1 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2023	40.0 mg/l
Dissolved Oxygen	IS 3025 Part 38:1989 (Azide Modification)	6.2 mg/l
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	23.2 mg/l
Discipline: Biological		**Group:** Water
Total Coliform	APHA 24th Edn. 2023-9221 B	1600 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	230 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, *To be applicable only when water is chlorinated.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
B. ARUNAN
Technical Manager
Authorised Signatory

Reviewed & Authorised by
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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Cust. Ref : SRF Dated : 28.05.2025.
Lab No : 2608088/003
Sample Description (as stated by customer) : **Ground Water (OW-1) – Near Project Area**

T.C Date : 07.06.2025
T.C No : CML/25-26/T022282
Date Of Receipt : 29.05.2025
Analysis Commenced On: 29.05.2025
Analysis Completed On : 07.06.2025

TEST	PROTOCOL	RESULTS
Discipline: Chemical		**Group:** Water
Colour	IS 3025 Part 4:2021	1 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.42
Conductivity @ 25°C	IS 3025 Part 14:2013	1332.0µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	786.0mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	228.0mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	52.9 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	23.3 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	201.0mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	256.4 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	52.3 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.40 mg/l
*Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.38 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	9.1 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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Email : test@mettexlab.com I Web : www.mettexlab.com

Lab No: 2608088/003 T.C No: CML/25-26/T022282 Dated : 07.06.2025

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological		**Group:** Water
Total Coliform	APHA 24th Edn. 2023-9221 B	170 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, <1.8 MPN/100ml can be taken as "No microbial growth", *To be applicable only when water is chlorinated.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
B. ARUNAN
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

Cust. Ref : SRF Dated : 28.05.2025.

Lab No : 2608088/004

Sample Description : **Ground Water (OW-2) – Sathyamangalam**
(as stated by customer)

T.C Date : 07.06.2025

T.C No : CML/25-26/T022283

Date Of Receipt : 29.05.2025

Analysis Commenced On: 29.05.2025

Analysis Completed On : 07.06.2025

TEST	PROTOCOL	RESULTS
Discipline: Chemical		**Group:** Water
Colour	IS 3025 Part 4:2021	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.15
Conductivity @ 25°C	IS 3025 Part 14:2013	1227.0 µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	724.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	208.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	48.0 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	21.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	188.5 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	225.4 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	41.2 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.36 mg/l
*Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.32 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	8.3 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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Email : test@mettexlab.com I Web : www.mettexlab.com

Lab No: 2608088/004 T.C No: CML/25-26/T022283 Dated : 07.06.2025

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological		**Group:** Water
Total Coliform	APHA 24th Edn. 2023-9221 B	120 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, <1.8 MPN/100ml can be taken as "No microbial growth", *To be applicable only when water is chlorinated.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
B. ARUNAN
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha
S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025
Cust. Ref : SRF Dated : 28.05.2025.
T.C No : CML/25-26/T022284
Lab No : 2608088/005
Date Of Receipt : 29.05.2025
Sample Description : **Ground Water (BW-1) – Near Crusher** (as stated by customer)
Analysis Commenced On: 29.05.2025
Analysis Completed On : 07.06.2025

TEST	PROTOCOL	RESULTS
Discipline: Chemical		**Group:** Water
Colour	IS 3025 Part 4:2021	1 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.24
Conductivity @ 25°C	IS 3025 Part 14:2013	1130 µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	668.0mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	196.4 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	44.2 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	20.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	175.8 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	226.5 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	42.5 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.33 mg/l
*Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.31 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	7.3 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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Email : test@mettexlab.com I Web : www.mettexlab.com

Lab No: 2608088/005 **T.C No: CML/25-26/T022284** **Dated : 07.06.2025**

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological		**Group:** Water
Total Coliform	APHA 24th Edn. 2023-9221 B	130 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, <1.8 MPN/100ml can be taken as "No microbial growth", *To be applicable only when water is chlorinated.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
B. ARUNAN
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha
S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025
T.C No : CML/25-26/T022285

Cust. Ref : SRF Dated : 28.05.2025.
Lab No : 2608088/006
Sample Description (as stated by customer) : **Ground Water (BW-2) – Kurujalayapatti.**

Date Of Receipt : 29.05.2025
Analysis Commenced On: 29.05.2025
Analysis Completed On : 07.06.2025

TEST	PROTOCOL	RESULTS
Discipline: Chemical		**Group:** Water
Colour	IS 3025 Part 4:2021	1 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.32
Conductivity @ 25°C	IS 3025 Part 14:2013	1074.0µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	634.0mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	176.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	40.0 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	38.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	156.0 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	199.8 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	38.5 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.32 mg/l
*Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.29 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	7.6 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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Email : test@mettexlab.com I Web : www.mettexlab.com

Lab No: 2608088/006 T.C No: CML/25-26/T022285 Dated : 07.06.2025

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological		**Group:** Water
Total Coliform	APHA 24th Edn. 2023-9221 B	110 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, <1.8 MPN/100ml can be taken as "No microbial growth", *To be applicable only when water is chlorinated.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
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Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025

T.C No : CML/25-26/T022286

Cust. Ref : SRF Dated : 28.05.2025.

Lab No : 2608088/007

Date Of Receipt : 29.05.2025

Sample Description : **Soil -1 : Near Project Area (Barren Land)**
(as stated by customer)

Analysis Commenced On: 29.05.2025

Analysis Completed On : 07.06.2025

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (electrometric method)	7.02
02	Conductivity @ 25°C	IS 14767 - 2000	356.8 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	30.9 %
	Sand		36.6 %
	Silt		32.5 %
04	Water Holding Capacity	By Gravimetric Method	41.3 %
05	Bulk Density	By Cylindrical Method	1.02 g/cm^3
06	Porosity	By Gravimetric Method	37.1 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	98.7 mg/kg
08	Magnesium as Mg		40.2 mg/kg
09	Manganese as Mn		37.2 mg/kg
10	Zinc as Zn		1.07 mg/kg
11	Boron as B		1.19mg/kg
12	Chloride as Cl	APHA 24th Edn. 2023-4500 Cl -B	168.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.023 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	32.1 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	5.21mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	329.5 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.99 mg/kg
21	Iron as Fe		6.63 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.27 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.32 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	39.7 meq/100g of soil

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032, Tamil Nadu, INDIA
Phone : +91 44 22323163, 22311034, 42179490, 42179491 I CIN : U74999TN2008PTC069459
Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025
T.C No : CML/25-26/T022287

Cust. Ref : SRF Dated : 28.05.2025.
Lab No : 2608088/008
Sample Description : **Soil -2 : Muthudaiyanpatti (Agriculture Land)**
(as stated by customer)

Date Of Receipt : 29.05.2025
Analysis Commenced On: 29.05.2025
Analysis Completed On : 07.06.2025

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (electrometric method)	7.13
02	Conductivity @ 25°C	IS 14767 - 2000	325.6 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	31.9 %
	Sand		35.9 %
	Silt		32.2 %
04	Water Holding Capacity	By Gravimetric Method	40.6%
05	Bulk Density	By Cylindrical Method	1.06 g/cm^3
06	Porosity	By Gravimetric Method	43.1 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	98.6 mg/kg
08	Magnesium as Mg		41.9 mg/kg
09	Manganese as Mn		31.3 mg/kg
10	Zinc as Zn		2.03 mg/kg
11	Boron as B		1.26 mg/kg
12	Chloride as Cl	APHA 24th Edn. 2023-4500 Cl -B	198.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.019 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	32.8 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	3.62 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	362.5 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.20 mg/kg
21	Iron as Fe		4.18 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.34 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.36 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	32.0 meq/100g of soil

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025

T.C No : CML/25-26/T022288

Cust. Ref : SRF Dated : 28.05.2025.

Lab No : 2608088/009

Date Of Receipt : 29.05.2025

Analysis Commenced On: 29.05.2025

Sample Description : **Soil -3 : Near Crusher (Barren Land)**
(as stated by customer)

Analysis Completed On : 07.06.2025

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (electrometric method)	7.02
02	Conductivity @ 25°C	IS 14767 - 2000	335.6 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	31.0 %
	Sand		35.9 %
	Silt		33.1 %
04	Water Holding Capacity	By Gravimetric Method	47.4 %
05	Bulk Density	By Cylindrical Method	1.17 g/cm^3
06	Porosity	By Gravimetric Method	45.3 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	146.9 mg/kg
08	Magnesium as Mg		85.8 mg/kg
09	Manganese as Mn		29.8 mg/kg
10	Zinc as Zn		1.89 mg/kg
11	Boron as B		2.63 mg/kg
12	Chloride as Cl	APHA 24th Edn. 2023-4500 Cl -B	198.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.023 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	39.2 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	6.63 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	356.6 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.89 mg/kg
21	Iron as Fe		6.98 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.89 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.68 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	40.1 meq/100g of soil

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha

S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025

T.C No : CML/25-26/T022289

Cust. Ref : SRF Dated : 28.05.2025.

Lab No : 2608088/010

Date Of Receipt : 29.05.2025

Analysis Commenced On: 29.05.2025

Sample Description : **Soil -4 : Maruthanthalai (Agriculture Land)**
(as stated by customer)

Analysis Completed On : 07.06.2025

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (electrometric method)	6.86
02	Conductivity @ 25°C	IS 14767 - 2000	253.4 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	27.3 %
	Sand		37.6%
	Silt		35.1 %
04	Water Holding Capacity	By Gravimetric Method	46.6 %
05	Bulk Density	By Cylindrical Method	1.03 g/cm^3
06	Porosity	By Gravimetric Method	40.6 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	136.5 mg/kg
08	Magnesium as Mg		80.5 mg/kg
09	Manganese as Mn		36.7 mg/kg
10	Zinc as Zn		1.18 mg/kg
11	Boron as B		1.42 mg/kg
12	Chloride as Cl	APHA 24th Edn. 2023-4500 Cl -B	187.8 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.017 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	31.8 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	5.24 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	306.5 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.93 mg/kg
21	Iron as Fe		4.64 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	3.29 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.91 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	33.9 meq/100g of soil

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha
S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025
T.C No : CML/25-26/T022290

Cust. Ref : SRF Dated : 28.05.2025.
Lab No : 2608088/011
Sample Description : **Soil -5 : Sathyamangalam (Agriculture Land)**
(as stated by customer)

Date Of Receipt : 29.05.2025
Analysis Commenced On: 29.05.2025
Analysis Completed On : 07.06.2025

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (electrometric method)	7.03
02	Conductivity @ 25°C	IS 14767 - 2000	298.5 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	31.5 %
	Sand		34.6 %
	Silt		33.9%
04	Water Holding Capacity	By Gravimetric Method	42.5 %
05	Bulk Density	By Cylindrical Method	1.04 g/cm^3
06	Porosity	By Gravimetric Method	43.2 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	102 mg/kg
08	Magnesium as Mg		52.6 mg/kg
09	Manganese as Mn		29.6 mg/kg
10	Zinc as Zn		1.66 mg/kg
11	Boron as B		1.25 mg/kg
12	Chloride as Cl	APHA 24th Edn. 2023-4500 Cl -B	195.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.019 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	39.7 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	6.41 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	316.0 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.89 mg/kg
21	Iron as Fe		3.03 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	3.32 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.93 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	37.8 meq/100g of soil

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com I Web : www.mettexlab.com

TEST REPORT

ISSUED TO: M/s. Jaffer Ali - Rough stone, Extent: 1.47.5ha
S.F.Nos. 216/1, Village – Melur, Taluk – Kulathur, District – Pudhukottai.

T.C Date : 07.06.2025
T.C No : CML/25-26/T022291
Cust. Ref : SRF Dated : 28.05.2025.
Lab No : 2608088/012
Date Of Receipt : 29.05.2025
Sample Description : **Soil -6 : Pappampatti**
(as stated by customer)
Analysis Commenced On: 29.05.2025
Analysis Completed On : 07.06.2025

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (electrometric method)	6.96
02	Conductivity @ 25°C	IS 14767 - 2000	325.8 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	30.7 %
	Sand		37.2 %
	Silt		32.1 %
04	Water Holding Capacity	By Gravimetric Method	49.5 %
05	Bulk Density	By Cylindrical Method	1.25 g/cm^3
06	Porosity	By Gravimetric Method	41.6 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	129.8 mg/kg
08	Magnesium as Mg		60.8 mg/kg
09	Manganese as Mn		22.8 mg/kg
10	Zinc as Zn		1.92mg/kg
11	Boron as B		2.24 mg/kg
12	Chloride as Cl	APHA 24th Edn. 2023-4500 Cl -B	191.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.016 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	29.7 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	4.12 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	302.5 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.97 mg/kg
21	Iron as Fe		2.98 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.68 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.56 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	36.7 meq/100g of soil

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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QUALITY COUNCIL OF INDIA
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NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

Geo Exploration and Mining Solutions, Salem

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

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

Note: Names of approved experts and sectors are mentioned in RAAC minutes dated August 21, 2025, posted on QCI-NABET website.

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Valid up to
August 06, 2028

Issue Date
August 25, 2025

Varinder Kanwar

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

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

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