DRAFT EIA & EMP FOR
PROPOSED ROUGH STONE AND GRAVEL QUARRY
CATEGORY – B1 (CLUSTER)

(Public Hearing Upgraded after Terms of Reference (ToR) as per the provisions of EIA Notification 2006 & amendments thereof)

TOR IDENTIFICATION NO. TO25B0108TN5277761N, DATED: 26/04/2025

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 AND 19/11
VILLAGE	MELAKALANGAL
TALUK	V.K.PUDHUR
DISTRICT	TENKASI
EXTENT	4.41.0 Ha
PROPOSED PRODUCTION QUANTITY FOR FIVE YEARS	ROUGH STONE : 9,01,561m^3 GRAVEL : 53,474m^3 PEAK PRODUCTION : 1,82,780m^3
LAND	PATTA LAND

(Sector No. 1(a) Sector No.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 8.67.5 Ha
Baseline Monitoring Period – December 2024 to February 2025

APPLICANT

THIRU.S.SUBRAMANIAN,
S/o. Thiru. Shanmugavel
No. 196/4, North Street, `
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District – 627 855.

ENVIRONMENTAL CONSULTANT	LABORATORY
M/s. GLOBAL MINING SOLUTIONS *(NABET Accredited & ISO 9001 Certified Consultant)* Plot No. 6, S.F.No. 13/2, A2, VS City, RC Chettypatty, Kottamettupatty, Omalur, Salem, Tamil Nadu – 636 455. NABET Accreditation No: NABET/EIA/23-26/SA 0241 *Valid up to: 04.01.2026* Contact: 97502 23535 & 94446 54520 Email: infoglobalmining@gmail.com, globalminingsolutionssalem@gmail.com	**M/s. SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED** *(NABL Accredited Testing Laboratory)* *Valid up to: 29.09.2025* #416/15, Dhargas Road, Perungalathur, West Tambaram, Chennai, Tamil Nadu, India.

JULY - 2025

AMENDMENT PAGE

S.No.	Page No.	Section / Clause / Para / Line (as Applicable)	Date of Amendment	Amendment Made	Reasons of amendment	Signature of Person Authorizing Amendment
1						
2						
3						
4						
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ACKNOWLEDGEMENT

M/s. Global Mining Solutions, Salem is very much thankful, Thiru.S.Subramanian, for the confidence and trust placed on the organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone and Gravel quarry over a lease extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State and formulating the Environmental Management Plan (EMP). We also gratefully acknowledge the cooperation and assistance provided by concerned government authorities for collection of secondary information for the preparation of Draft EIA/EMP report. Our sincere thanks to the local people of Melakalangal Village and the nearby villages for their whole hearted cooperation and constant involvement during the entire field study without which the study would not have been possible.

For: M/s. Global Mining Solutions

(M. Prabu)

Managing Director

UNDERTAKING

In line with MoEF OM No. J – 11013/41/2006-IA.II (I) dated 5th October 2011, we hereby give our undertaking for owning the content and information in the EIA/EMP report submitted for EC of the proposed Rough Stone and Gravel quarry over a lease extent of 4.41.0 Ha & Cluster extent of 8.67.5 Ha located at Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State.

For: M/s. Global Mining Solutions

Name: M.Manikandan

EIA Coordinator – Mining

UNDERTAKING

In Line with OM no. J-11013/41/2006-IA.II (1) dated 4th Aug 2009 and its Amendments, we hereby confirm that all Terms of Reference issued by Ministry of Environment, Forest and Climate Change vide ToR Lr.No.SEIAA- TOR IDENTIFICATION NO. TO25B0108TN5277761N, DATED: 26/04/2025, have been incorporated in the draft EIA/EMP report of the proposed Rough Stone and Gravel Quarry over a lease extent of 4.41.0 Ha, & Cluster extent of 8.67.5 Ha, located at Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State for the production of 9,01,561 m^3 of Rough Stone from the proposed lease area and the details has been complied in the Draft EIA/EMP report is factually correct.

The EIA/EMP report has been prepared by M/s. Global Mining Solutions (GMS), Salem. GMS is a NABET accredited consultant for preparation of EIA/EMP report of Mining of Minerals (Opencast only) vide certificate no. NABET/EIA/23-26/SA 0241, valid till 04.01.2026.

For: M/s. Global Mining Solutions

Name: M.Manikandan
EIA Coordinator – Mining

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

NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

Global Mining Solutions

Plot No - 6 SF No 13/2 A2, VS City, RC Chettypatty, Kottamettupatty,Omalur,
Salem, Tamil Nadu-636455

*The organization is accredited as **Category-A** under the QCI-NABET **Scheme for Accreditation of EIA Consultant Organization, Version 3**: for preparing EIA/EMP reports in the following Sectors-*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including opencast/ underground mining	1	1 (a) (i)	A
3	Thermal power plants	4	1 (d)	B
5	Metallurgical industries (ferrous)	8	3 (a)	A
6	Cement Plants	9	3 (b)	A
26	Building and construction projects	38	8 (a)	B
27	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated May 20, 2025, posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/25/3638 dated May 30, 2025. The accreditation needs to be renewed before the expiry date Eco Chem Sales and Services, Surat following due process of assessment.

Valid up to
January 4, 2026

Issue Date
May 30, 2025

Certificate No.
NABET/EIA/23-26/SA 0241

Varinder Kanwar

Prof (Dr) Varinder S Kanwar
CEO - NABET

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

DECLARATION BY EXPERT

Declaration by Experts contributing to the proposed Rough Stone and Gravel Quarry over a lease extent of 4.41.0 Ha & Cluster extent of 8.67.5 Ha, located at Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State.

I, hereby, certify that I was a part of the EIA team that developed the above EIA.

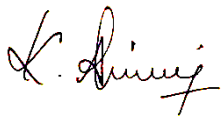
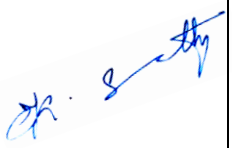
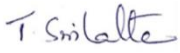
EIA Coordinator Name: M. Manikandan

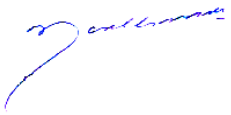
Signature & Date

Period of involvement: December 2024 to February 2025.

Contact information:

M/s Global Mining Solutions
Plot No.6, SF No. 13/2, A2, VS City, RC Chettypatty,
Kottamettupatty, Omalur,
Salem, Tamil Nadu – 636 455

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and Date
1	*AP*	*Dhanalakshmi Ramanathan*	*Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation measures for air pollution.* *Period: December 2024 to February 2025.*	
2	*WP*	*Abirami Kaliaperumal*	*Assessment of existing water quality, impact of the project on surface and ground water quality, suggested mitigation measures for minimizing the impact.* *Period: December 2024 to February 2025*	
3	*SHW*	*Ramadoss N*	*Assessment of waste generated from the project, suggested waste management practices.* *Period: December 2024 to February 2025*	
4	*SE*	*Sarasvathy K*	*Baseline SE studies. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan.* *Period: December 2024 to February 2025*	
5	*EB*	*Saravanan S*	*Baseline data collection of related to ecology of the area.* *Period: December 2024 to February 2025*	
6	*HG*	*Ravinthiran N*	*Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area.* *Period: December 2024 to February 2025*	
7	*AQ*	*Srilatha Thiruveedhula*	*Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.* *Period: December 2024 to February 2025*	

8	*NV*	*Dhanalakshmi Ramanathan*	*Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.* *<u>Period: December 2024 to February 2025</u>*	
9	*LU*	*Srilatha Thiruveedhula*	*Preparation of land use map based on satellite imagery. Land use classification and analysis. Impact prediction of the project on the surrounding land environment.* *<u>Period: December 2024 to February 2025</u>*	
10	*RH*	*S.V. Prashant*	*Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the worker.* *<u>Period: December 2024 to February 2025</u>*	
11	*SC*	*Shisupal Sing*	*Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil.* *<u>Period: December 2024 to February 2025</u>*	
12	*GEO*	*Valliappan Meyyappan*	*Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area.* *<u>Period: December 2024 to February 2025</u>*	

COMPLIANCE TO

TERMS OF REFERENCE

Table 1 ToR and its Compliance

S. No.	ToR Points	Compliance	Page No.
1.	SEIAA Standard Conditions		
1.1.	**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.	Noted. Agree to comply.	
	2. The members must co-ordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Noted. Agree to comply.	
	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. Agree to comply.	
	4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Noted. Agree to comply.	
	5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Noted. Agree to comply.	
	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.	Noted. Agree to comply.	

	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. Agree to comply.	
	Agriculture & Agro-Biodiversity 9. Impact on surrounding agricultural fields around the proposed ming area	Agreed	
	10. Impact on soil flora & vegetation around the project site.	Complied. The details are given in Chapter 4.	
	11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP.	There is no standing trees or vegetation within the mine lease area	
	12. The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	The ecological details have been provided in Chapter 3 and measures have been provided in Chapter 4.	
	13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	The detailed action plan has been described in the EMP (Chapter 10) for the sustainable management for the project area and its surroundings.	
	14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The impact of project on the land environment has been discussed in Table 413 under Chapter 4.	
	Forests		
	15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife.	Uthumalai R.F - 8.17 km (SE) are located within 10 km radius and no other reserved forest located in the buffer zone. The fauna commonly found in the core and buffer zone is given in Chapter 3.	
	16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	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. The anticipated impact and its mitigation measures for biological environment are detailed in Chapter 4.	

	17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Not Applicable. This is a dry barren land.	
	18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Uthumalai R.F - 8.17 km (SE) are located within 10 km radius and no other reserved forest located in the buffer zone. The fauna commonly found in the core and buffer zone is given in Chapter 3.	
	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.	The hydrogeological study report for the study area of 1 km radius is incorporated in Chapter 3 of the EIA report	
	20. Erosion Control measures.	There is no waste generation (OB) in this quarry has been envisaged. However, there may be erosion due to rainy season and that is limited within quarry area. The control measures are explained in 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.	Complied. The study details are incorporated in Chapter 3. Anticipated impacts and its mitigation measures are detailed in Chapter 4.	
	22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	There is no wastewater generation / discharge of wastewater from this Quarry, so this is not applicable.	
	23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities.	Fragmentation impact on environment may be due to drilling and blasting. The anticipated impacts and mitigation measures are discussed in Chapter 4.	
	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.	An ecological and biodiversity study has been conducted and the same is incorporated in the Chapter 3 of the EIA/EMP report. However, there is no any features mentioned in this condition	

		within the M.L area. However, the impacts anticipated with respect to the environment of the project area is very negligible and it will be minimized within the project area.	
	25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	Agreed.	
	26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Complied. The details are described in Chapter 4.	
	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.	The details will be incorporated in the final EIA report	
	Energy		
	28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Complied. The details are described in Chapter 4.	
	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.	Only the best equipment will be used, and it will be properly and regularly maintained. Regular vehicular emission tests will be conducted on the transport vehicles to ensure minimal carbon emissions.	
	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.	To further reduce carbon emissions, a good greenbelt plan has been planned. The carbon emission and the measures to mitigate carbon emission have been discussed in Chapter 4.	
	31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	The details are furnished in Chapter 4	
	32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Complied. Mine Closure Plan has been incorporated in the approved Mining Plan.	
	EMP		

	33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Complied. The details are described in Chapter 10.	
	34. The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.	Total EMP Cost for 5 years is 25.04 lakhs i.e. Capital Cost Rs. 8.80 Lakhs + Recurring Cost Rs. 16.25 for five years, which is including greenbelt cost and cost for mine closure plan. The breakup of the EMP cost is mentioned in table 10-2.	
	Risk Assessment		
	35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Complied. The details are described in Chapter 7.	
	Disaster Management Plan		
	36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Complied. The details are described in Chapter 7.	
	Others		
	37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	There are no historical places, schools, cemeteries, temples, bird sanctuaries, and wildlife sanctuaries within 500 metres of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer. The letter copy enclosed as Annexure – 5.	
	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.	Complied. The action plan of the public hearing will be furnished in the final EIA report	

	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.	The same will be complied in the final EIA report	
STANDARD TOR			
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	This is a fresh quarry	
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.	It is a Patta Land in the name of Thiru. Senthilkumar vide Patta no. 1622, the applicant, Thiru. S. Subramanian has obtained consent from the pattadar. The copy of the Patta, Adangal, A-Register and Consent Agreement are enclosed are enclosed as Annexure - 6.	
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. All documents including approved mine plan, EIA and Public Hearing are compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and is in the name of the lessee.	
1.4.	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).	Project area is superimposed on Satellite imagery is enclosed in Figure No. 3-6. Project area boundary coordinates superimposed on Toposheet & Surface Features around the project area covering 10km radius – Figure No. 2-3. Geology map of the project area covering 10km radius - Figure No. 3-12. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 3-11	
1.5.	Information should be provided in Survey of India Topo sheet in l:50,000 scare 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.	The following map in 1:50,000 Scale: Geology map of the project area covering 10km radius – Figure No. 3-12. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 3-11.	

		Important water bodies, streams and rivers are highlighted in Figure 3-2 and Soil Characteristics are shown in Figure 3-23	
1.6.	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.	**a. Precise Area Communication:** The Project Proponent has obtained Precise area communication letter received from the district collector, Tenkasi, vide Rc.No.M1/177/2024, dated 18.12.2024. The letter copy is enclosed as Annexure – 2. **b. Mining Plan Approval:** The project proponent has prepared Mining Plan under rule 8, 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the Joint Director / Director (i/c), Dept. of Geology & Mining, Tenkasi vide Rc.No.M1/177/2024, dated 26.12.2024. The approval letter along with Mining Plan is enclosed as Annexure - 3	
1.7.	It should be clearly stated whether the proponent company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	The proponent will frame a well-planned environmental policy. Its details are provided under Chapter 10.	
1.8.	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	The proposed quarrying operation is not underground mining and hence subsidence study is not applicable. Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-7.	

		The impact due to ground vibrations due to blasting is given in para 2.8.6 of Chapter 2.	
1.9.	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.	
1.10.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary. national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.6.2 of Chapter-3. The land use pattern at present and at the end of the quarrying period has been provided in Table 3-4, Chapter-3. The Conceptual plan of mine lease area is shown in Figure No- 2-14.	
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.	There is no overburden anticipated during the entire rough stone quarrying operation.	
1.12.	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. ln 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.	There is no Forest Land involved in the proposed project area.	
1.13.	Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not Applicable. The proposed project area does not involve any Forest Land.	
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.	Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006.	
1.15.	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	The list of RF in the study area are: a. Uthumalai R.F - 8.17 km (SE)	

		The figure showing the same is illustrated in Figure 2-6.	
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.	Nil within 10km radius	
1.17.	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.	Nil within 10km radius	
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 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.	The detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] is carried out and the details are incorporated in section 3.8.5 of Chapter 3	
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 Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable	
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 with respect to CRZ, Coastal features such as mangroves, if any, should be furnished. (Note: The Mining projects	Not Applicable	

	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.	Not Applicable	
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 of2009, water quality, noise revel, 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.	Baseline Data is collected in post monsoon season (Dec 24 – Feb 25) for AAQ, WQ, NL and EB. Site-specific meteorological study data is collected. 2 Locations are chosen for upwind, 2 Locations for downwind and 2 Locations for crosswind apart from project location.	
1.23.	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. lt 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	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view and Detailed in Chapter 4. Air Quality Modelling for Cluster are detailed in Chapter 4.	

	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.	The total water requirement for the project is 5.5 KLD. The required water will be procured from outside agencies initially and later rainwater harvested in the mine pit shall be used other than drinking purpose. Water Balance diagram is presented in section 2.9.1 of chapter 2	
1.25.	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water will be sourced from local vendors and ground water will not be extracted. Hence, not applicable.	
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.	Details of water conservation measures in detailed in Chapter 4. Rain water harvesting details are included in Chapter 3.	
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.	Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Table 4-2	
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-ali4 shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The quarrying activity will not intersect ground water table as quarrying is proposed up to a depth of 57m BGL and water table is found at a depth of 78 m BGL.	
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.	Not applicable	
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.	Site Elevation: ≃ 128 m from above MSL Working depth: 128 m from above MSL GW Table: 78m BGL	

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.	Greenbelt Development are detailed in Chapter 4 and Chapter 8 0.67.5 hectares of land are allotted for greenbelt development. 675 Nos. of tree species will be planted	
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.	This is a small quarry and the production is very less. 6 Nos. of 5T/10T tippers will be used for transport. The trips will be minimum. Hence no major impact on transport is expected	
1.33.	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Temporary Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease.	
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.	At the conceptual stage the quarried-out land will be fenced and lower benches will be allowed to collect rain water to act as a temporary reservoir and Greenbelt development will be carried out on the top bench, unutilized areas and haul roads.	
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.	Details of occupational health and safety aspects are given in Table 4-10 of Chapter 4	

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.	No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter No. 8 under section 8.5.1	
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.	This project provides employment to 34 people directly. Local people will be hired for unskilled labour. Through CSR, nearby schools, hospitals will be benefitted. For CSR, INR 10.0 Lakh is allocated. Based on the demand of the people during public hearing, further funds will be allocated, if necessary.	
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.	Environmental Management plan details are given in Chapter 10.	
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.	The details of the public hearing will be included in Chapter 7 along with detailed action plan.	
1.40.	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	There is no litigation pending against the project.	
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.	Project Cost: 142 Lakhs CER Cost: Rs. 10 Lakhs EMP Cost: Rs. 25.04 Lakhs	
1.42.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Included in Chapter 7	
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.	Outlined in Chapter 8	
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.	All the documents are 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.	Yes, Complied	
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,	Baseline monitoring results are detailed in Chapter 3. Original Baseline monitoring reports will be made available during appraisal of the project.	
d.	Where the documents provided are in a language other than English, an English translation should be provided.	Yes, complied	
e.	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Yes, complied	
f.	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J- l 1013/41/2006-IA.11 0) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted & agreed	
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.	Noted & agreed	
h.	As per the circular no. J-l l0l I161812010-1A.ll (l) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance 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.	Yes, Complied	
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.	Surface Plan and Geological Plan – Figure No. 2-8 and Figure No. 2-9	
SEAC SPECIFIC CONDITIONS			

1.	The project proponent, **Thiru. S. Subramanian** has applied for Terms of Reference for the Proposed Rough stone and Gravel Quarry over an extent of 4.41.00 He (Patta land) in S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11, Melakalangal Village, V.K. Pudhur Taluk, Tenkasi District, Tamil Nadu.		
2.	The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.		
3.	As per mining plan, the lease period is for 5 years, the mining plan is valid for 5 years and annual peak production shall not exceed 1,82,780 m3 of rough stone & 39,538 m of Gravel for an ultimate depth of mining of 57 m BGL.		
SEAC ADDITIONAL CONDITIONS			
1.	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal	Noted. Agree to comply	
	i. Copy of the agreement forming CMC		
	ii. The Organisation chart of the Committee with defining the role of the members		
	iii. The 'Standard Operating Procedures' (SoP) executing the planned activities.		
2.	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.	The copy of the same will be furnished in the Final Appraisal	
3.	Since waterbodies are situated nearby, the PP shall carry out the hydrological and hydrogeological studies including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies.	The details are provided in Chapter 3	
4.	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	The details are provided in Chapter 3	

5.	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.	The details are provided in Chapter 3	
6.	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The photos of green belt and fencing is provided in chapter 2	
7.	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	The Bio diversity study is highlighted in Chapter under section 3.8.5	
8.	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The affidavit for EMP will be furnished during the final EIA report	
9.	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding villages and structures.	The comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding villages and structures is incorporated in Chapter 4	
10.	The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	Noted.	
11.	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.	The same will be furnished in the final EIA report	
SEAC SPECIFIC CONDITIONS			
1.	In the case of existing/operation 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	Not applicable. This is a fresh quarry.	

	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 lining lease area viii. Condition of Safety zone/benches Revised/Modified Mining Plan showing the benches of not exceeding 6m 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.	The letter detailing habitations around the proposed mining is obtained from VAO is enclosed as Annexure – 5.	
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	The enumeration of structures is detailed in 3.5.1 of Chapter 3	
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.	The detailed hydrogeology report is furnished in the Chapter 3	
5.	The Project Proponent shall carry out Bio-diversity study through reputed institution and the same shall be included in the EIA report.	The biodiversity study is detailed in section 3.8.5 of Chapter 3.	
6.	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries. Tiger reserve etc. upto a radius of 25 km from the proposed site.	The DFO letter stating that the proximity distance of RF & PF will be incorporated in the final EIA report	
7.	In 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	Not applicable. This is a fresh quarry.	

	Academic institutions-CSIR Central Institute of Mining & Fuel Research/Dhanbad, NIRM/ Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Suratkal 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 project 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 30m below ground level.	Detailed slope stability study will be carried out after commencement of the mining operation while reach mine depth after 25 m. The details of slope stability is elaborated in section 7.6 of Chapter 7	
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	The same will be furnished during the final EIA report.	
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.	The PP will use controlled blasting techniques with Nonel to ensure that dust generation, noise, and vibration levels remain within the prescribed limits.	
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.	The PP has not carried out any quarrying operation before this project.	
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	Not applicable. This is a fresh quarry project.	
13.	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Not applicable. This is a fresh quarry project.	
14.	1. Quantity of minerals mined out. • Highest production achieved in any one year. • Detail of approved depth of mining.	Not applicable. This is a fresh quarry project.	

	• Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • lf 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 comer 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 coordinates superimposed in satellite imagery and given as Figure No – 2-2 in Chapter – 2. The geology and geomorphology map are provided in Figure No.3.11 and 3.12 Chapter 3. The Soil map is provided under Figure No. 3-23, Chapter-3. The 10km Radius Index plan showing buffer zone is given in Figure No.3-6 in Chapter – 3.	
16.	The PP shall carry out Drone video survey covering the cluster, green belt, fencing etc.,	This is fresh quarry. The condition will be complied after commencement of the mining operation.	
17.	The proponent shall furnish photographs of adequate fencing, greenbelt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan	There are no trees within ML area. Fencing and plantations are under process (80 % of the work completed). Greenbelt / Plantation is being carried out in the safety zone to enhance the vegetative growth and aesthetic in the safety zone area. In the post mining stage, an area of 0.67.5 Ha will be under greenbelt and plantation.	
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.	The geological reserves - 23,67,302 m^3 of Rough Stone & 77,014 m^3 of Gravel. The mineable reserves: 9,01,561 m3 of Rough Stone & 53,474 m3 of Gravel. The proposed production is 9,01,561 m3 of Rough Stone & 53,474 m3 of Gravel (Five year) by Opencast Mechanized mining method. The anticipated impact and its mitigation measures are detailed in Chapter 4.	
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	Complied. Please refer section 2.9.3 of Chapter 2	

	of 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 ground water 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 monitoring data, it may clearly be shown whether working all intersect ground water. Necessary data and documentation in this regard may be provided.	The hydrogeological study report is furnished in Chapter 3	
21.	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality& flora/fauna including traffic/vehicular movement study.	The baseline data for all environments is collected for the Post Monsoon Season (Dec'24 – Feb'25).	
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 air pollution, water pollution, & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Cumulative impact study has been carried covering existing and this proposed quarries in the cluster and the same is incorporated in the Chapter 4. Accordingly, a detailed Environment Management Plan is prepared considering air, water, noise and soil environment and the details are given in Chapter 10.	
23.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	The runoff water during rainy season will be collected in the bottom quarry through proper drainage pattern and the collected water will be used for plantation and dust suppression during dry season. The Rain water harvesting plan is given chapter 4.	
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	The land use of the study area is described in Section 3.6.2 of Chapter 3. The anticipated impacts on the land environment and the mitigation measures are detailed in Chapter 4.	

	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.	Not applicable. There is no generation of the OB & waste.	
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.	No proximity to Critically polluted areas.	
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.	The impact of the mining operations due to this quarry on water environment is studied and mitigation measures are proposed. Rain water harvesting plan is given Chapter 4.	
28.	Impact on local transport infrastructure due to the Project should be indicated	Since the production is very less, only few trucks of 5/10T will be used for transport. The effect of transport on local transport will be negligible. 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 section 2.9.6 of Chapter 2.	
29.	A tree survey shall be carried out (Nos. name of species, age, diameter, etc) both within the mining lease applied area & 300m buffer zone and its management during mining activity	There are no much trees within 300m buffer zone of the project area. The predominant flora noticed small tress of *Acacia nilotica* trees of very few numbers.	
30.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Detailed mine closure plan is given in Chapter 7.5	

31.	As 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, where ever possible	Accepted. It will be done.	
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 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.	Green belt is proposed in an area of 0.67.5 ha. Green belt development plan is provided in section 2.9.4 of chapter 2.	
33.	Taller/one year old saplings raised in appropriate size of bags; preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/horticulturist with regard to site-specific choices. The proponent shall earmark the green belt area with GPS coordinates all along the boundary of the project site with at least 3 m wide and in between blocks in an organized manner	The same will be furnished in the final EIA report	
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.	A disaster management plan is prepared and the details are given in Chapter 7.	
35.	A risk assessment and Management plan shall be prepared and included in the EIA/EMP report for the complete life of the proposed quarry or till the end of the lease period	Risk assessment and its management is given in Chapter 7.	
36.	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.	
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.	No major impact on public health will be there since the villages are located more than 1km from the lease area. Details of CER and CSR are discussed under Chapter No. 8	

38.	The Socio-economic studies should be carried out within a 5km 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.	Socio economic study is conducted both by visits and secondary data collection. Details are given in Chapter 3	
39.	Details of litigation pending against the project, if any, with direction /order passed by any Court of law against the Project should be given.	No litigation is pending	
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.	Benefits of the project is given in Chapter 8	
41.	If any quarrying operations were carried out in the proposed quarrying site for which now EC is sought, the project proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF & CC, Regional Office, Chennai or the concerned DEE/TNPCB.	Not applicable. This is a fresh quarry project.	
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.	The affidavit for EMP will be furnished during the final EIA report	
43.	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the condition mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986	Agreed	
SEIAA SPECIFIC CONDITIONS			
	The Authority noted that the subject was placed in the 540th meeting of SEAC-2 held on 20.03.2025. After detailed discussions, the Authority accepts the recommendation of SEAC-2 and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity of 9,01,561 m3 of Rough Stone & 53,474 m3 of Gravel up to the depth of 57m BGL** as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-2 & normal conditions & the conditions mentioned in Annexure of this minutes.	Noted. Agree to comply	

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1 INTRODUCTION

1.1 Preamble

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It seeks to anticipate environmental effects early in the planning and design process, identify strategies to mitigate negative effects, adapt projects to the local environment, and provide the proponent with the predicted choices. Economic and environmental benefits can be obtained through the use of EIA. The project's overall time and cost can be reduced by taking into account environmental effects, including prediction and mitigation, early benefits in project design, environmental protection, and optimal resource utilization.

1.2 General Information on Mining of Minerals

Crystalline Limestone, Multi colour dimension stone, rough stone/gravel, garnet and ilmenite sand are notable economic importance minerals of found in Tirunelveli District. Minor occurrences of graphite, mica and gemstone are also reported in the district. Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Alangulam, Radhapuram, Nanguneri, Manur and Sankarankovil Taluks in the district under operation for production of construction materials and earth fill as gravel. The multi color dimension stones occurring at Kaladaikurichi (Ambai White), Poongudiyarkulam, Mannarkovil, Adachani in Ambasamudram Taluk, Kasthurirangapuram, Kannanallur in Radhapuram Taluk and Singikulam, Melacheval in Cheranmahadevi Taluk are recorded in the district which once actively mined by M/s TAMIN Ltd (Govt of Taminadu) and other private miners. Crystalline Limestone occurring as bands in Talayuttu and Ramaayyanpatti extends over strike length of 2.5 km with average width of 120 m were extensively mined by M/s India Cements Ltd, M/s South India Mines and Minerals Industries Ltd, M/s Krishna Mines etc in recent years. Crystalline limestone intercalated with calc granulite occurring in Padmaneri, Pottasutti, Singikulam, Pandapulli, Terku Seliyanur and Marandai areas were also mined in 1980's by M/s TAMIN Ltd (Govt of Taminadu) and other private agencies. Rich deposits of garnet and ilmenite sand occurs along the coast part of Radhapuram Taluk, in Tirunelveli district. Red garnet sand occurs along Nambiar River. Vijayapatti, Kuttankuzhi and Idindakarai areas show notable garnet and ilmenite sands occuurrences which were exploited economically in recent times.

(Source: District Survey Report - Tirunelveli)

1.3 Purpose of the report

Thiru S. Subramanian proposes to establish a Rough Stone & Gravel Quarry at S. F. Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State. Though the area of the proposed mine is 4.41.0 Ha, the cluster area within 500 m radius calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016 is 8.67.5 Ha> 5.00 Ha. In this regard, Form-I and Pre-Feasibility Report has been submitted on 07.02.2025 and the ToR was granted by the SEIAA vide ToR Identification No. TO25B0108TN5277761N. The copy of the ToR is enclosed as Annexure - 1. The Geological Resources of Rough stone is 2367302 m^3 and Gravel is 77014 m^3. As per approved Mining Plan, the

proposed production is 9,01,561 m3 of Rough Stone & 53,474 m3 of Gravel for the period of five years. The proposal for ToR was considered by the State Expert Appraisal Committee in its 540th meeting held on 20.03.2025 for prescribing Terms of Reference (ToR) for preparation of the Environmental Impact Assessment (EIA) report.

The purpose of the EIA study is to assess the baseline environmental conditions and to anticipate the possible environmental impacts during operation of the project, thereby suggesting appropriate mitigation measures to control the same.

1.4 Identification of the project and project proponent

1.4.1 About the Project:

The applicant Thiru. S. Subramanian, proposed to quarry for the period of five years in patta land over an area of 4.41.0 Ha located in S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 of Melakalangal Village, V. K. Pudhur Taluk, Tenkasi District, Tamil Nadu State. It is a patta land in the name Thiru. Senthilkumar vide Patta no. 1622, the applicant, Thiru. S. Subramanian has obtained consent from the pattadar. The copy of the Patta, Adangal, A-Register and Consent Agreement are enclosed are enclosed as Annexure - 6. The copy of the Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc.No.M1/177/2024, dated 18.12.2024. The letter copy enclosed as Annexure – 2. There is an existing pit within ML area, which was operated by another lessee before 2012. In this regard, AD mines have given pit dimensions details through 500m radius letter vide Rc.No.M1/177/ 2024, dated 26.12.2024 and are provided in Chapter 2. Since, there is no DSR and other secondary data such as mineral resources, natural resources etc available for Tenkasi District, secondary data is resorted to Tirunelveli District as Tenkasi falls under Tirunelveli District before bifurcation.

1.4.2 About the Project Proponent:

Table 1-1 Details of Project Proponent

Name of the Project Proponent	Thiru. S. Subramanian
Communication Address	S/o. Thiru. Shanmugavel No. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District
Mobile No.	88707 02608
Email - ID	

1.5 Brief description of nature, size and location of the project

Table 1-2 Salient Features of the project

S. No.	Particulars	Description
1.	Nature	Mining of Rough Stone & Gravel Quarry
2.	Location	S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V. K. Pudhur Taluk, Tenkasi District, Tamil Nadu
3.	Size (Extent)	4.41.0 Ha with cluster area of 8.67.5 Ha
4.	Project Cost	Rs. 142 lakhs

1.6 Details of Quarries within cluster area of 500m radius

The details of the quarries within 500 m radius are given below:

Table 1-3 Details of Quarry within 500m radius

S. No	Name and address of the lessee	Village & S. F. Nos	Extent in Hectare	Lease Period
i. Abandoned Quarries				
-NIL-				
ii. Existing Quarries				
1.	Thiru.Senthurpandian, S/o. Muthusamy Pandian, No.7-2-4, Aranmanai Street, Surandai, V.K.Pudhur, Tenkasi District.	S.F.Nos.14/2B (P), 17/2, 17/3 & 17/4 Melakalangal Village	4.26.5 Ha	EC grated by SEIAA; TN dated 20.01.2023 Proceedings Rc.No.M1/36644/2015, dated 02.02.2023, 02.02.2023 to 01.02.2028
iii. Proposed Quarries				
1	Thiru.S.Subramanian S/o. Thiru.Shanmugavel, No. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District. Pin Code – 627 855.	S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 Melakalangal Village	4.41.0 Ha	Proposed Quarry for the period of five years from the execution of lease deed
Total Cluster Area			**8.67.5 Ha**	

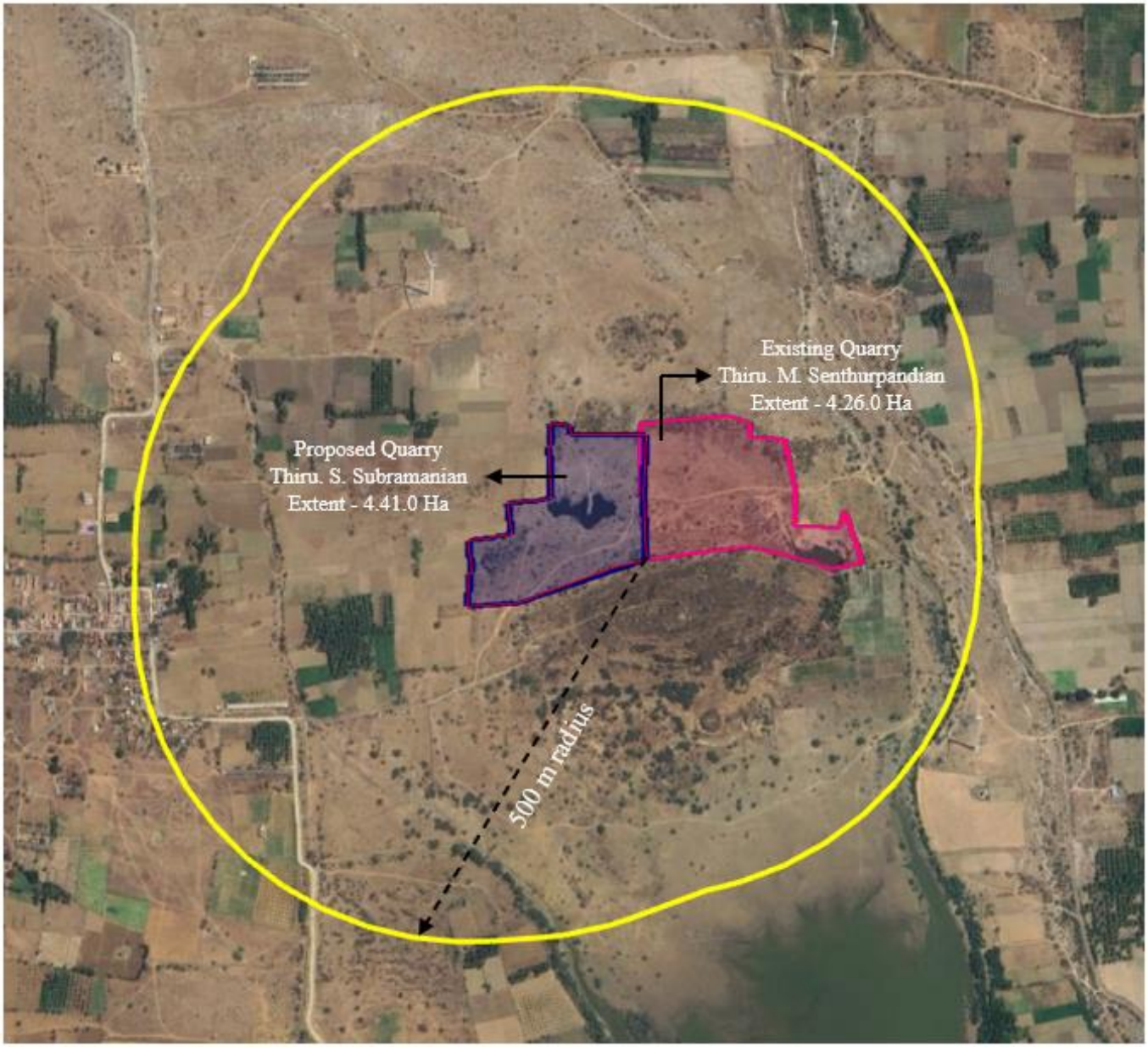


Figure 1-1 Details of Quarries within 500 m radius

1.7 Details of Statutory approvals

- Precise Area Communication:

  The Project Proponent has obtained Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc.No.M1/177/2024, dated 18.12.2024. The copy of the letter is enclosed as Annexure - 2

- Mining Plan Approval Letter

  The project proponent has prepared a Mining Plan under rule 19 (1), 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the Assistant Director, Department of Geology and

Mining, Tenkasi, vide Rc.No.M1/177/2024, dated 26.12.2024. The copy of the letter along with approved mining plan is enclosed as Annexure - 3

- 500 m radius quarry features

  The project proponent has obtained an official letter from the Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc.No.M1/177/ 2024, dated 26.12.2024. The copy of the letter is enclosed as Annexure - 4

- Land document of the proposed lease area

  It is a Patta land in the name Thiru. Senthilkumar vide Patta no. 1622, the applicant, Thiru. S. Subramanian has obtained consent from the pattadar. The copy of the Patta, Adangal, A-Register and Consent Agreement are enclosed as Annexure - 6.

- VAO certification regarding 300m features of the project area

  There are no historical places, schools, cemeteries, temples, bird sanctuaries, and wildlife sanctuaries within 300 metres of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer, Melakalangal Village, dated 22.01.2025. The copy of the letter is enclosed as Annexure – 5

- Blasting agreement

  The Project Proponent have an agreement with M/s. Sri Alagu Ambigai Explosives to provide the required explosives and to carry out the blasting operation for the proposed quarry, the PP has an agreement with Thiru.Arumugasamy.K. The Blasting Agreement is enclosed as Annexure – 7.

- CER Letter

  The project proponent has obtained an official letter from Panchayat Union Primary School, Uchipothai Village, dated 22.01.2025. The letter copy enclosed as Annexure – 8.

1.8 EIA process

Screening: Screening is the first stage of the EIA process. In this stage, the State level Expert Appraisal Committee (SEAC) examined the application of EC made by the proponent in Form 1 through online (**Proposal No. SIA/TN/MIN/522675/2025, dated 07.02.2025**) and decided that the project requires detailed environmental studies for the preparation of EIA report.

Therefore, the proponent submitted application for Terms of Reference (ToR) on 07.02.2025

Scoping: The proposal was placed in the 540th meeting of SEAC on 20.03.2025. Based on the presentation and documents furnished by the project proponent, SEAC decided to recommend the proposal for the grant of Terms of Reference (ToR) to SEIAA and SEIAA recommended ToR in its meeting held on 22.04.2025.

Public Consultation: In this stage, an application along with the draft of EIA and EMP report will be made to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing ensuring public participation at the project site or in its close proximity in the district. During public hearing, an opportunity will be given to the

people living nearby the project site to express their opinions about the impact of the proposed project on the environment. The outcome of the public hearing meeting will be updated in the final EIA report for appraisal.

Appraisal: In this stage, an application along with final EIA report including the outcome of the public consultations will be made to the SEIAA. The application thus made will be scrutinized by the SEAC. Then, the SEAC will make recommendations to grant EC or reject the application to the SEIAA.

1.9 Terms of Reference (ToR)

SEAC framed a comprehensive ToR based on the project information provided in Form I, PFR and issued ToR vide ToR Identification No. TO25B0108TN5277761N. The copy of the ToR is enclosed as Annexure - 1.

1.10 Scope of the EIA Study:

The main scope of the EIA study is to quantify the cumulative impact of the quarries in the cluster on the study area and formulate the effective mitigation measures for each individual lease. 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 sewage, and dust generation has been provided in this report. The baseline monitoring study has been carried out during the period of December 2024 – February 2025 for various environmental components such as land, soil, air, water, noise, ecology, etc. 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. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of sample analysis, etc., are given in Chapter 3.

1.11 Post Environmental Clearance Monitoring

1.11.1 Methodology adopted

Post project monitoring will be carried out as per conditions stipulated in environmental clearance letter issued by SEIAA, consent issued by SPCB as well as according to CPCB guidelines. The lease area is considered as core zone and the area lying within 10 km radius from the lease boundary is considered as buffer zone, where some impacts may be observed on physical and biological environment. In the buffer zone slight impact may be observed and that too is occasional.

Table 1-4 Post Environmental Clearance Monitoring

S. No.	Description	Frequency of monitoring
1.	Ambient Air Quality Monitoring	Quarterly /Half-yearly
2.	Water Level & Water Quality Monitoring (Both Surface and Ground Water)	Quarterly /Half-yearly

3.	Noise Level Monitoring	Quarterly /Half-yearly
4.	Soil Quality Monitoring	Quarterly /Half-yearly
5.	Medical check-up	Quarterly /Half-yearly

1.12 Structure of the EIA Report

The generic structure of the EIA Report is prepared as per the Technical EIA Guidance Manual for Mining of Minerals.

2 PROJECT DESCRIPTION

2.1 Type of the project

Thiru S. Subramanian proposes to set up a Rough Stone & Gravel Quarry at S. F. Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K..Pudhur Taluk, Tenkasi District, Tamil Nadu State. As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L- 11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1 as the 500 m radius area is >5 Ha. As per approved Mining Plan, the proposed production is 9,01,561m3 of Rough Stone and 53,474m3 of Gravel up to a depth of 57m below ground level for the period of five years by opencast mechanized mining. The project will be appraised at state level by State Environment Impact Assessment Authority, Tamil Nadu. Environment Clearance study will involve preparation of draft EIA report on the basis of baseline & impact assessment study is carried out. Also, before appraisal, under 7(III) of EIA notification 2006, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Tenkasi District.

2.2 Need for the project

To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials. The rough stone and gravel form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads. Tirunelveli District is home to several minerals of significant economic importance, including crystalline limestone, multi-coloured dimension stone, rough stone or gravel, garnet, and ilmenite sand. Furthermore, the lease area has a wealth of geological reserves of gravel and rough stone, as demonstrated by the mining operations conducted nearby.

2.3 Project Location

2.3.1 Location of the project site

The proposed quarry is located at S. F. Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K..Pudhur Taluk, Tenkasi District. The mining area is located in 09°02'11.42"N to 09°02'20.32"N & 77°29'32.60"E to 77°29'41.40"E. The location of the project is given below in Figure 2-1.

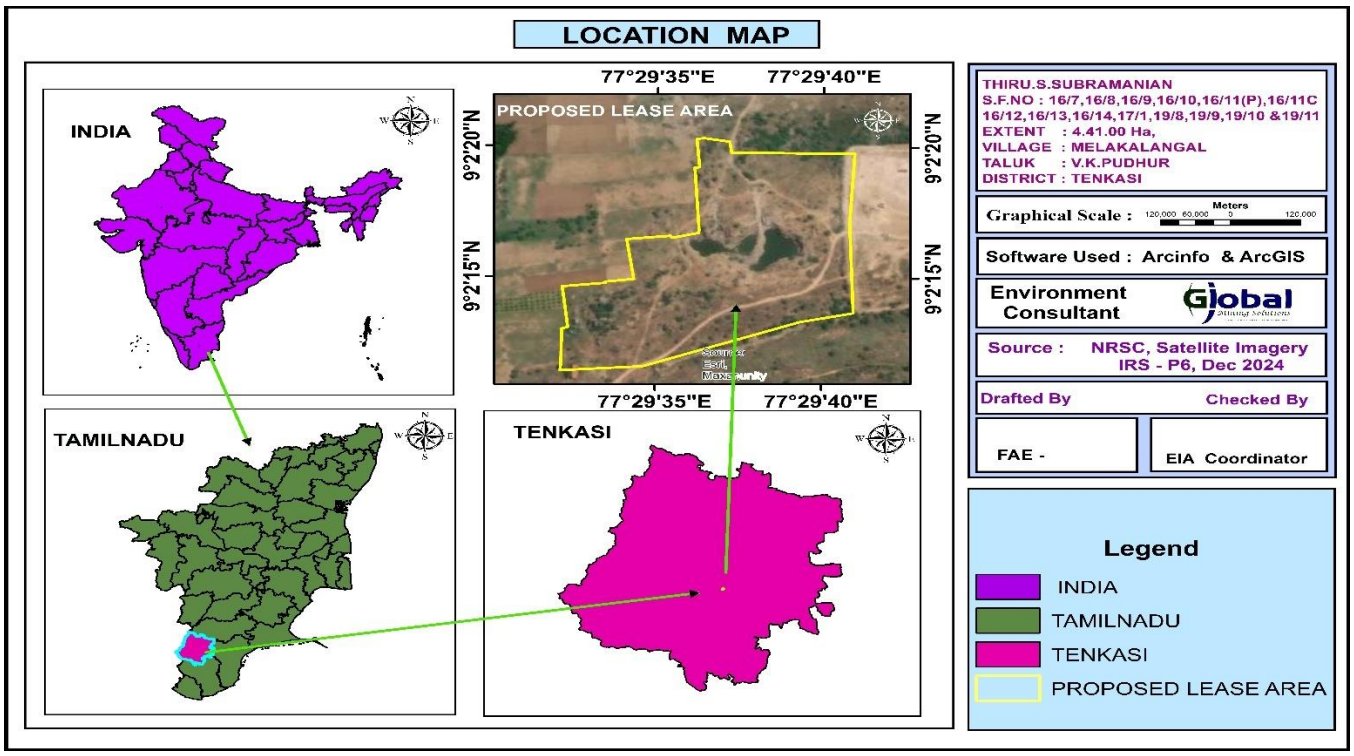


Figure 2-1 Project Location

The project boundary co-ordinates are shown below:

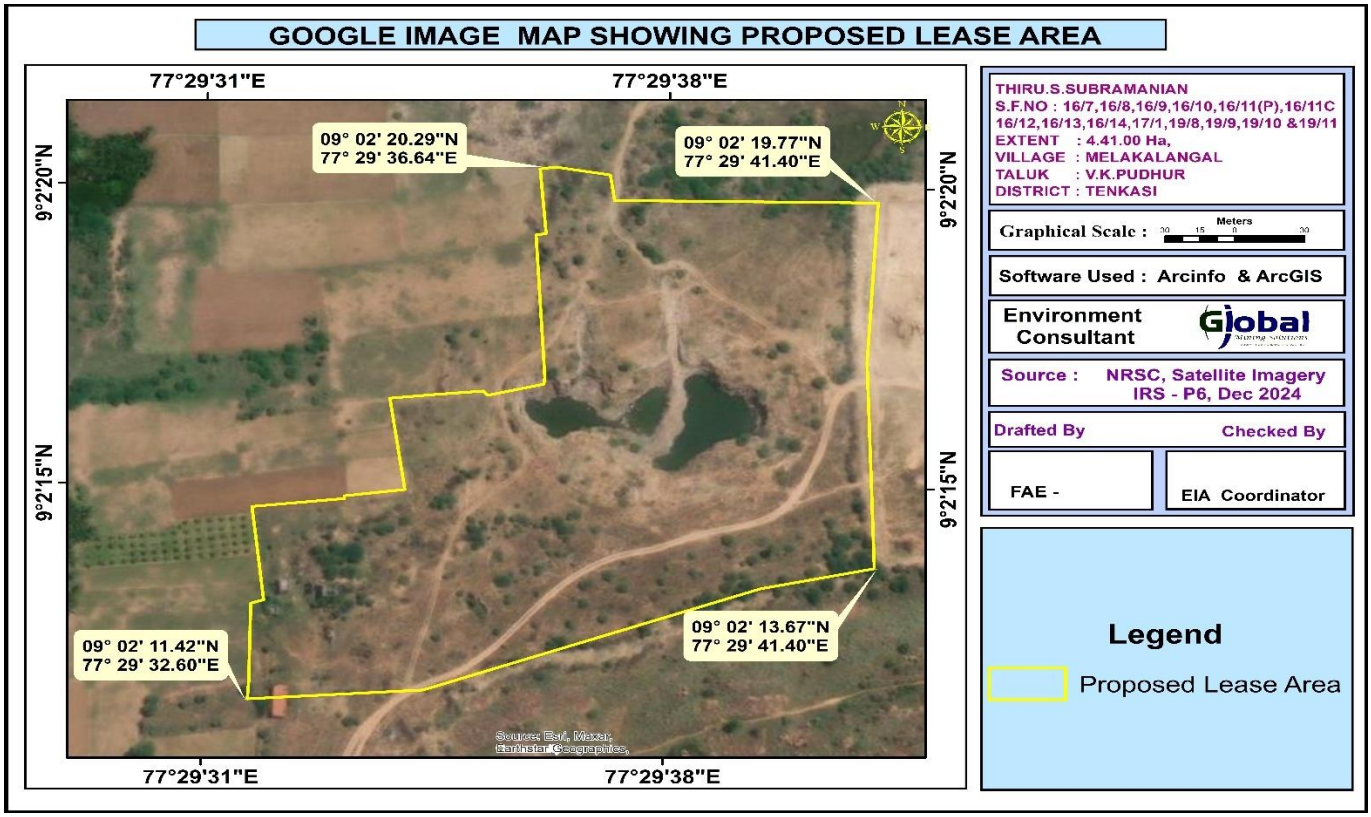


Figure 2-2 Boundary Co-ordinates of the Project

The site photographs of the project site are shown below

Figure 2-3 Site Photographs

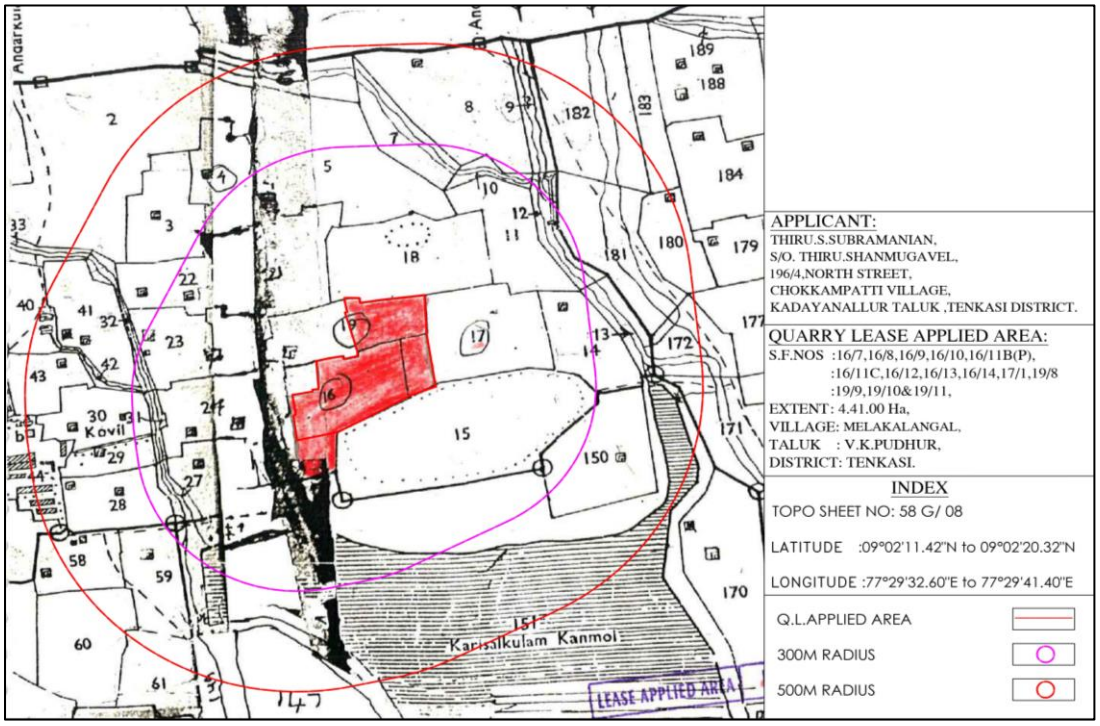


Figure 2-4 Village Map

2.3.2 Site Connectivity

The proposed site is located near Uchipothai Village (438m, SW) and is accessible from Mariathaipuram Road through approach road. The site is located near Pambakovil Shandy Station.

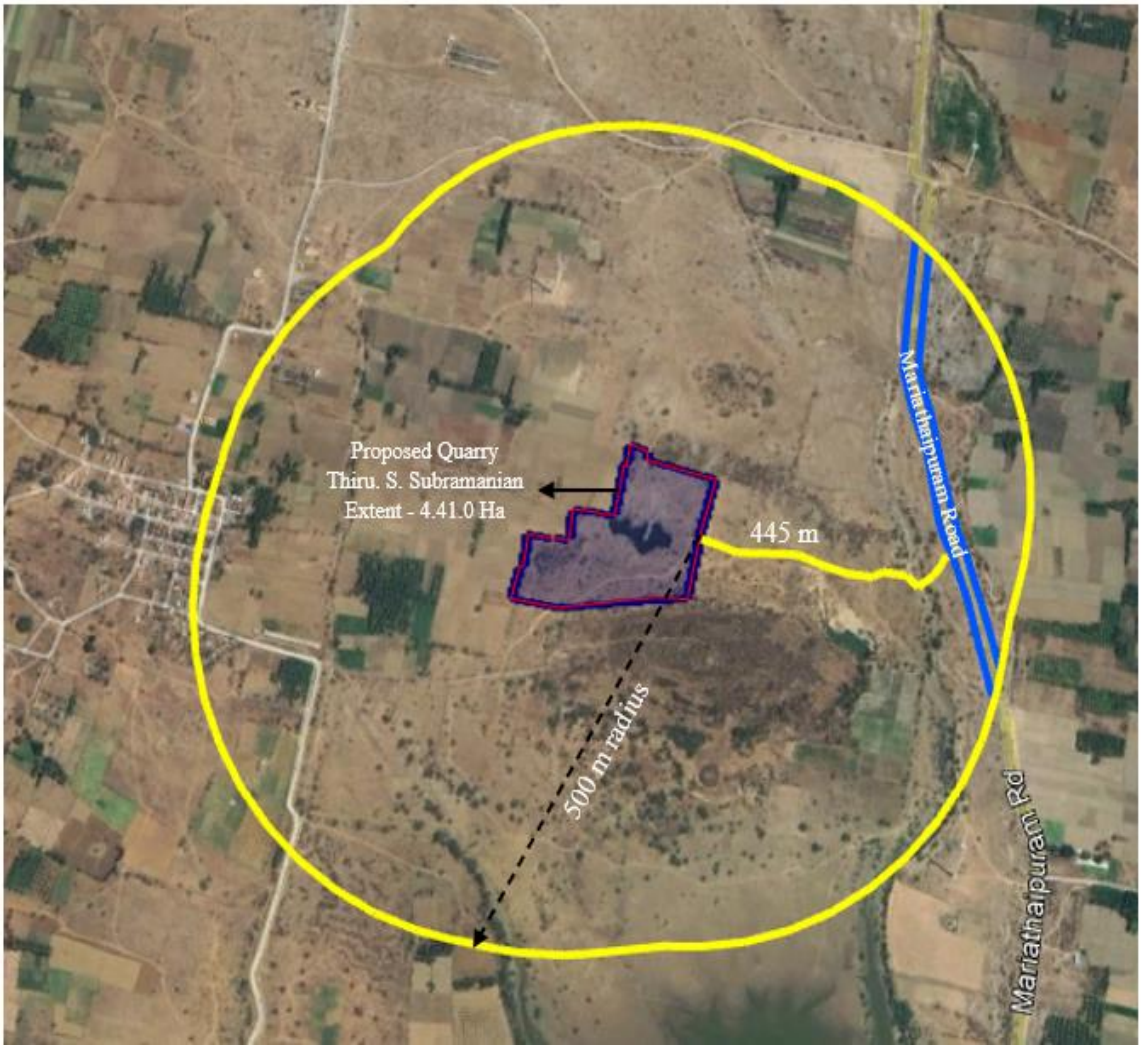


Figure 2-5 Site Connectivity

Table 2-1 Site Connectivity

S. No.	Particulars	Details
1.	Nearest Highway	(NH-744) Tenkasi – Tirumangalam – 16 km (NW) (SH-41) Tirunelveli - Sankarankovil Road – 11.5 km (NE)
2.	Nearest Railway Station	Pambakovil Shandy – 12.2km, W
3.	Nearest Airport	Tuticorin – 67.8 km, SE
4.	Nearest Port	Tuticorin – 72 km, SE
5.	Nearest Village	Melakalangal – 2.11m, NE

The salient features of the project site are given below:

Table 2-2 Salient features of the project site

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1.</td><td>Proponent Name</td><td>Thiru. S. Subramanian</td></tr>
<tr><td>2.</td><td>Proposed project</td><td>Rough Stone & Gravel Quarry of Thiru. S. Subramanian</td></tr>
<tr><td>3.</td><td>Extent</td><td>4.41.0 Ha and the cluster area within 500 m radius including the proposed mine is 8.67.5 Ha > 5 Ha</td></tr>
<tr><td>4.</td><td>Location</td><td>S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu</td></tr>
<tr><td>5.</td><td>Co-ordinates of the project site</td><td><table><tr><th>S. No.</th><th>Latitude</th><th>Longitude</th></tr><tr><td>1.</td><td>09° 02' 11.42"N</td><td>77° 29' 32.60"E</td></tr><tr><td>2.</td><td>09° 02' 20.29"N</td><td>77° 29' 36.64"E</td></tr><tr><td>3.</td><td>09° 02' 19.77"N</td><td>77° 29' 41.40"E</td></tr><tr><td>4.</td><td>09° 02' 13.67"N</td><td>77° 29' 41.40"E</td></tr></table></td></tr>
<tr><td>6.</td><td>Topography</td><td>Plain Terrain</td></tr>
<tr><td>7.</td><td>Site Elevation above MSL</td><td>≃ 128 m from above MSL</td></tr>
<tr><td>8.</td><td>Topo Sheet No.</td><td>58 G/08</td></tr>
<tr><td>9.</td><td>Minerals of Mine</td><td>Rough Stone & Gravel</td></tr>
<tr><td>10.</td><td>Proposed production in m^3</td><td>9,01,561 m^3 of Rough Stone and 53,474 m^3 of Gravel</td></tr>
<tr><td>11.</td><td>Ultimate Depth of mining</td><td>57m (BGL)</td></tr>
<tr><td>12.</td><td>Method of Mining</td><td>Opencast, Semi-Mechanized Mining with a bench height of 5m and bench width of 5m is proposed</td></tr>
<tr><td>13.</td><td>Drilling/Blasting</td><td>Drilling and controlled Blasting is proposed</td></tr>
<tr><td>14.</td><td>No. of Working days</td><td>300 Days</td></tr>
<tr><td>15.</td><td>Water requirement & Source</td><td>5.5 kLD and will be sourced from local vendors</td></tr>
<tr><td>16.</td><td>Manpower</td><td>34 Nos.</td></tr>
<tr><td>17.</td><td>Project Cost</td><td>Rs. 142 Lakhs</td></tr>
<tr><td>18.</td><td>Mining Plan Approval</td><td>Mining Plan approved by Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc.No.M1/177/2024, dated 26.12.2024</td></tr>
<tr><td>19.</td><td>Safety Zone</td><td>Out of 4.41.0 Ha, 0.67.5 Ha will be maintained as a Safety Zone during mining operations.</td></tr>
<tr><td>20.</td><td>Ground water level</td><td>78 m BGL</td></tr>
</table>

The detailed Environmental Settings of the project is detailed below in Table 2-2

Table 2-3 Environmental Settings of the project

S. No.	Particulars	Details
1.	Nearest Highway	(NH-744) Tenkasi – Tirumangalam – 16 km (NW) (SH-41) Tirunelveli - Sankarankovil Road – 11.5 km (NE)
2.	Nearest Railway Station	Pambakovil Shandy – 12.2 km (NW)
3.	Nearest Airport	Tuticorin – 67.8 km, SE
4.	Nearest Port	Tuticorin - 72 km, SE
5.	Nearest Village	Melakalangal – 2.11m, NE
6.	Water bodies	Odai - 256m (NE) Odai - 280m (W) Karisalkulam Kanmoi - 354m (SE)
7.	Reserved Forest	Uthumalai R.F - 8.17 km (SE)
8.	Eco Sensitive Zone and Wildlife Sanctuary (Notified)	Nellai Wildlife Sanctuary – 17.11 km (NW)
9.	Archaeological important places	Nil within 10 km radius
10.	Defense Installations	Nil within 10 km radius
11.	Nearest Port	Nil within 10 km radius
12.	Seismic Zone	Nil within 10 km radius

The figure showing the environmental settings of the proposed mine is shown below:

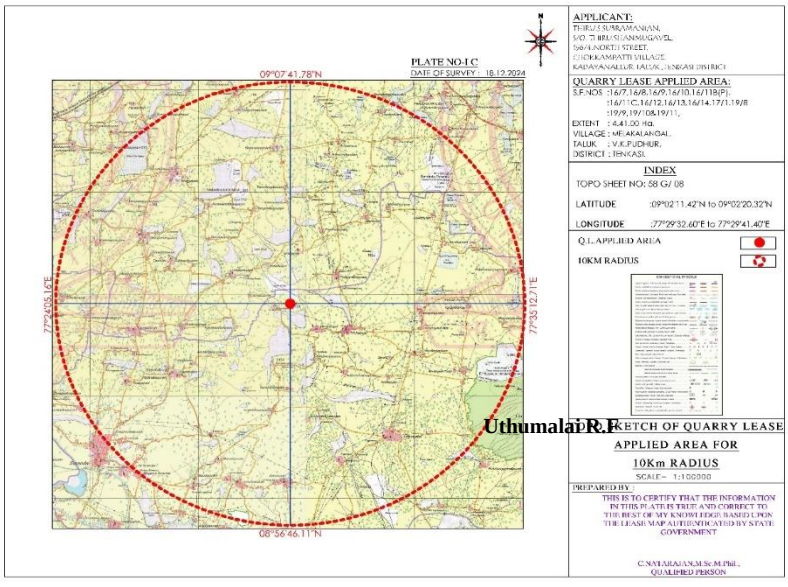


Figure 2-6 Environmental Settings of the Project

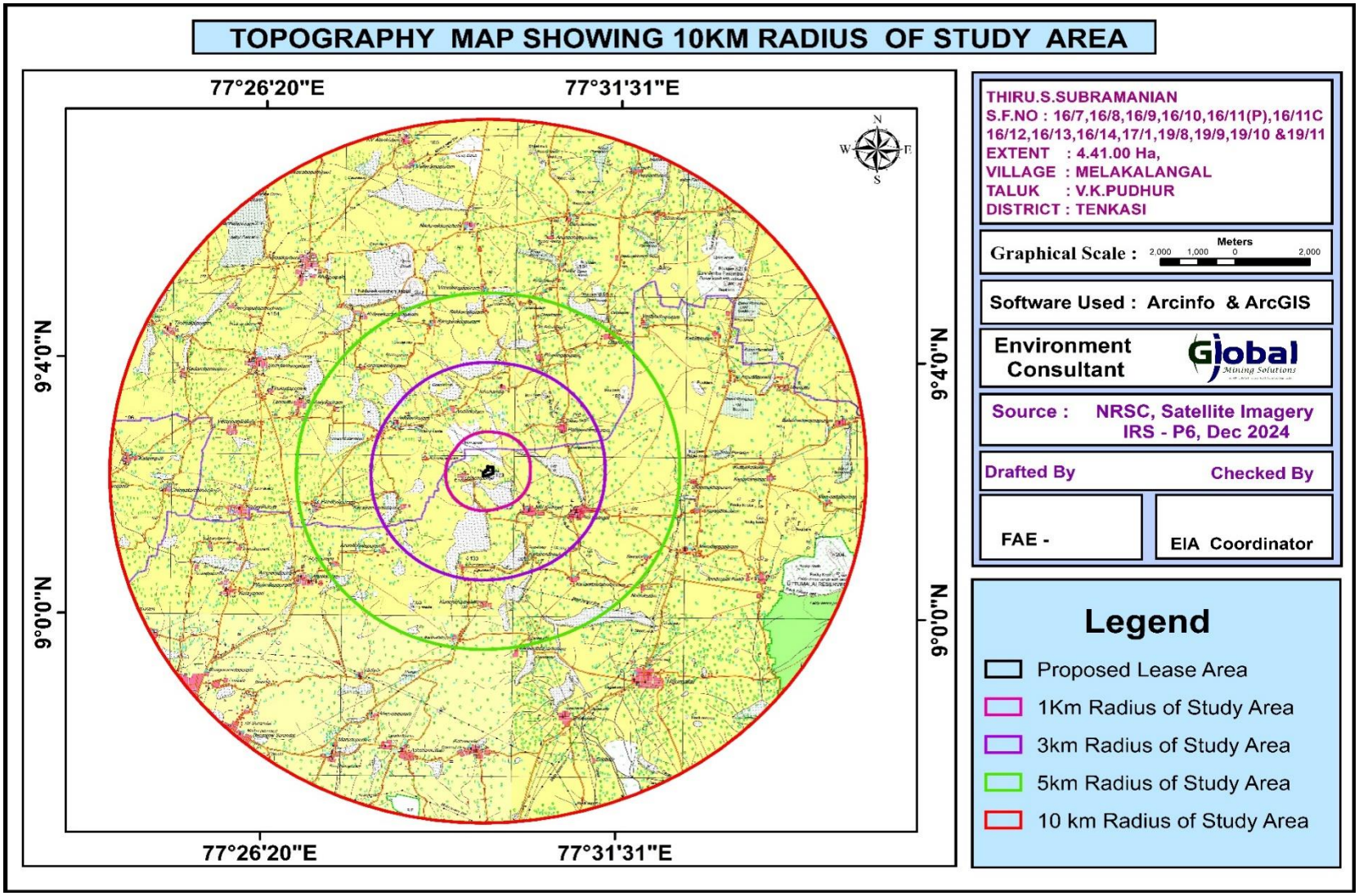


Figure 2-7 10 km Radius TOPO Map

2.4 Leasehold Area

The proposed project area is patta land in the name Thiru.Senthilkumar vide patta no. 1622, the applicant, Thiru.S.Subramanian has obtained consent from the pattadar. The copy of the Patta, Adangal, A-Register and Consent Agreement are enclosed as Annexure - 6. There is no human settlement within 500m radius. The surface plan of the project is shown below:

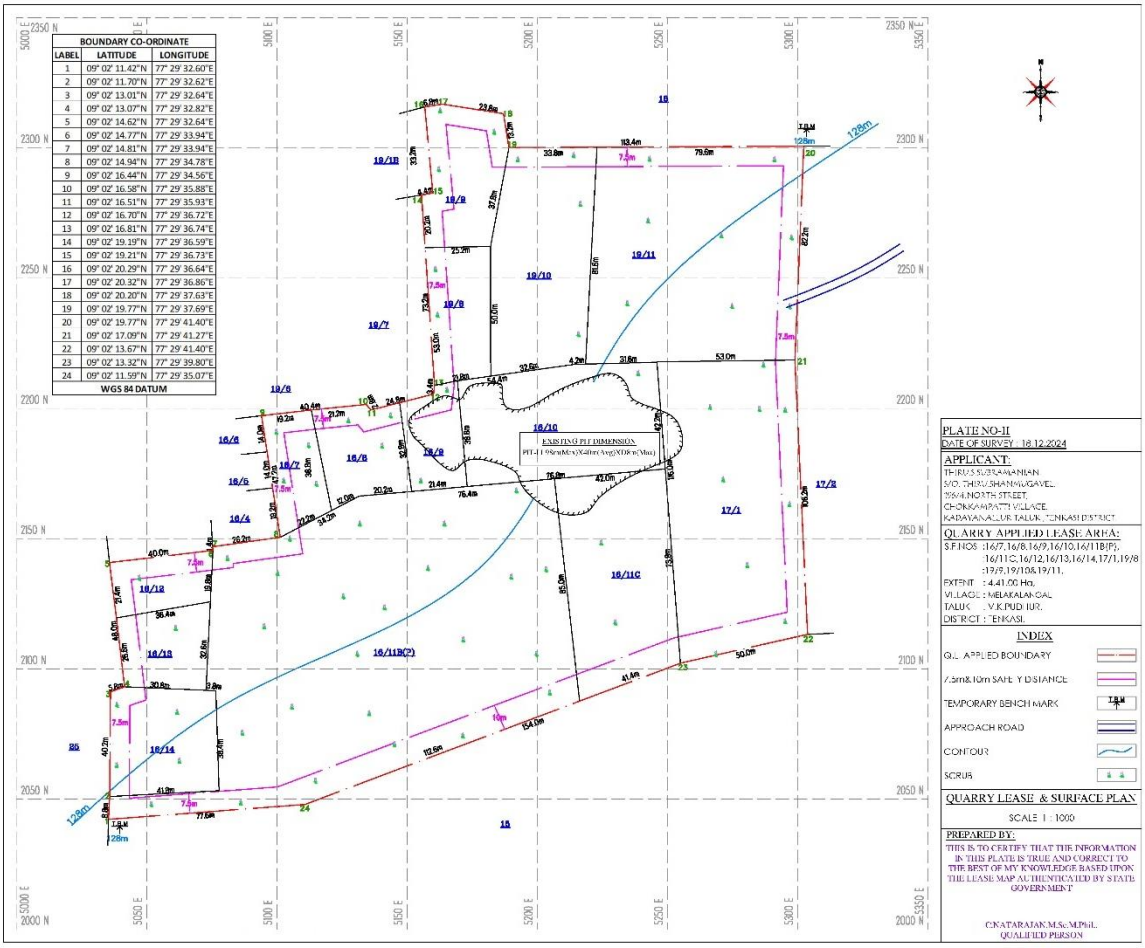


Figure 2-8 Surface plan of the project area

2.5 Land Use Pattern

The land use pattern of the project site is given below

Table 2-4 Land use pattern of the mine area

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	0.37.5
2.	Infrastructure	Nil	0.01.0
3.	Roads	Nil	0.02.0

4.	Green Belt	Nil	0.67.5
5.	Unutilized	4.41.0	Nil
	Total =	**4.41.0**	**4.41.0**

2.6 Geology

2.6.1 Regional Geology

Southern Granulite Terrain (SGT) of Tamil Nadu lying south of Palaghat-Cauvery shear zone has been divided into two major tectonic blocks by the Madurai block and Nagercoil-Trivandrum Block in the south. It is separated by WNW-ESE trending Achankovil-Tambaraparani Lineament. Tirunelveli and Thothukudi are significantly the only districts in the state to witness the geology and structure of both the blocks. Tirunelveli district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnetbiotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills

	Recent-Sub recent	**Soil and alluvium, calcrete**
		Quartz and pegmatite vein
		Incipient charnockite
700-550 Ma	Younger intrusive	Acidic intrusive – Granite
		Basic intrusive (Pyroxenite, Ultramafic/mafic rocks)
2200-2550 Ma	Migmatite Group	Hornblende-biotite gneiss
2600 Ma	Charnockite Group	Meta gabbro (older Intrusive) Charnockite Pyroxene granulite
	Khondalite Group	Garnet-biotite-quartzofeldspathic gneiss Garnet-biotite gneiss Garnet –biotite –Sillimanite gneiss ± cordierite gneiss Crystalline limestone, Calc granulite Quartzite
		Basement Unknown

2.6.2 Regional Geology

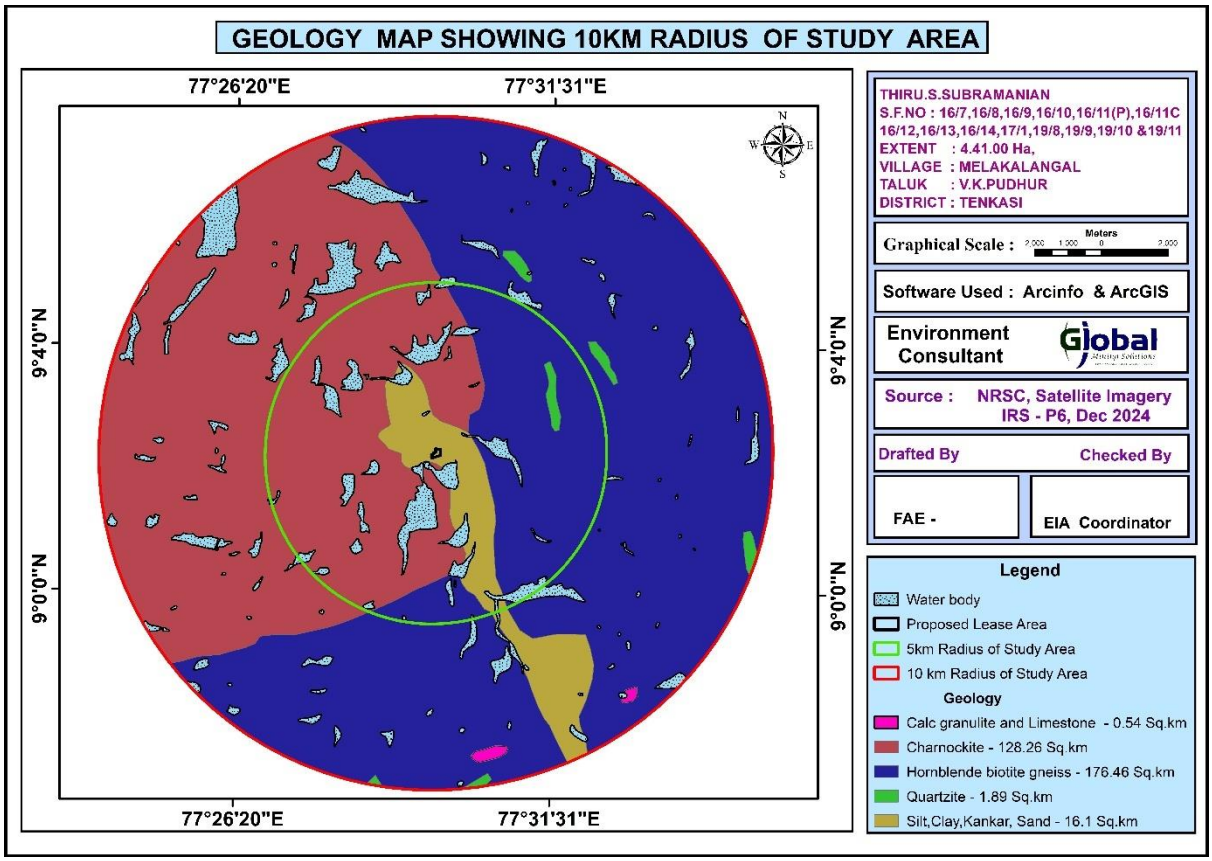


Figure 2-9 Geology map of the study area

The geology map of the study area reveals that the area is predominately covered with Calc granulite and Limestone and Charnockite, which falls under Charnockite group and the remaining area is covered with Fluvial (Silt/Clay/kankar/Sand), Quartzite (Khondalite group) and Hornblende biotite gnesis (Migmatite Group). No exploration was carried out. Massive Rough stone formation visible from the existing pits in the nearby quarry operations and dry open wells.

2.7 Details of Mining

The proposed activity is the extraction of Rough Stone and Gravel by open cast semi mechanized mining method over an extent of 4.41.0 Ha. The details of mining are presented below

Table 2-5 Details of Mining

S. No.	Particulars	Details
1.	Method of mining	Opencast method of Semi Mechanized Mining
2.	Geological Reserves	23,67,302 m^3 of Rough Stone & 77,014 m^3 of Gravel
3.	Mineable Reserves	9,01,561 m^3 of Rough Stone & 53,474 m^3 of Gravel
4.	Proposed Production	9,01,561 m^3 of Rough Stone & 53,474 m^3 of Gravel

5.	Bench Details	Bench Height of 5m and Bench Width of 5m is proposed.

The details of geological and mineable reserves in the lease area have been provided below in the subsequent sub section.

2.7.1 Estimation of Reserves

The Geological and Recoverable reserves are estimated by cross sectional method. Totally five sections have been drawn, two section drawn length wise as (X-Y), and another three sections drawn width wise as (A-B), (C-D) (E-F) to cover maximum area considered for lease. The Plans and Sections have been drawn with a scale of 1:1000 and 1:500 respectively.

2.7.2 Geological Reserves

The quarrying is restricted up to a depth of 57m BGL. The details of the available geological reserve are given below.

Table 2-6 Geological Reserve

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel formation in m^3	Geological Resources of Rough stone in m^3
XY-AB	I	97	146	2	28324	28324	
	II	97	146	5	70810		70810
	III	97	146	5	70810		70810
	IV	97	146	5	70810		70810
	V	97	146	5	70810		70810
	VI	97	146	5	70810		70810
	VII	97	146	5	70810		70810
	VIII	97	146	5	70810		70810
	IX	97	146	5	70810		70810
	X	97	146	5	70810		70810
	XI	97	146	5	70810		70810
	XII	97	146	5	70810		70810
	Total					**28324**	**778910**
XY-CD	I	57	105	2	11970	11970	
	II	14	105	5	7350		7350
	III	14	105	1	1470		1470
	III	57	204	4	46512		46512
	IV	57	204	5	58140		58140
	V	57	204	5	58140		58140
	VI	57	204	5	58140		58140
	VII	57	204	5	58140		58140
	VIII	57	204	5	58140		58140
	IX	57	204	5	58140		58140
	X	57	204	5	58140		58140
	XI	57	204	5	58140		58140
	XII	57	204	5	58140		58140

	Total					**11970**	**578592**
XY-EF	I	60	204	2	24480	24480	
	II	60	204	5	61200		61200
	III	60	204	5	61200		61200
	IV	60	204	5	61200		61200
	V	60	204	5	61200		61200
	VI	60	204	5	61200		61200
	VII	60	204	5	61200		61200
	VIII	60	204	5	61200		61200
	IX	60	204	5	61200		61200
	X	60	204	5	61200		61200
	XI	60	204	5	61200		61200
	XII	60	204	5	61200		61200
	Total					**24480**	**673200**
X1Y1-EF	I	102	60	2	12240	12240	
	II	102	60	5	30600		30600
	III	102	60	5	30600		30600
	IV	102	60	5	30600		30600
	V	102	60	5	30600		30600
	VI	102	60	5	30600		30600
	VII	102	60	5	30600		30600
	VIII	102	60	5	30600		30600
	IX	102	60	5	30600		30600
	X	102	60	5	30600		30600
	XI	102	60	5	30600		30600
	XII	102	60	5	30600		30600
	Total					**12240**	**336600**
Grand Total						**77014**	**2367302**

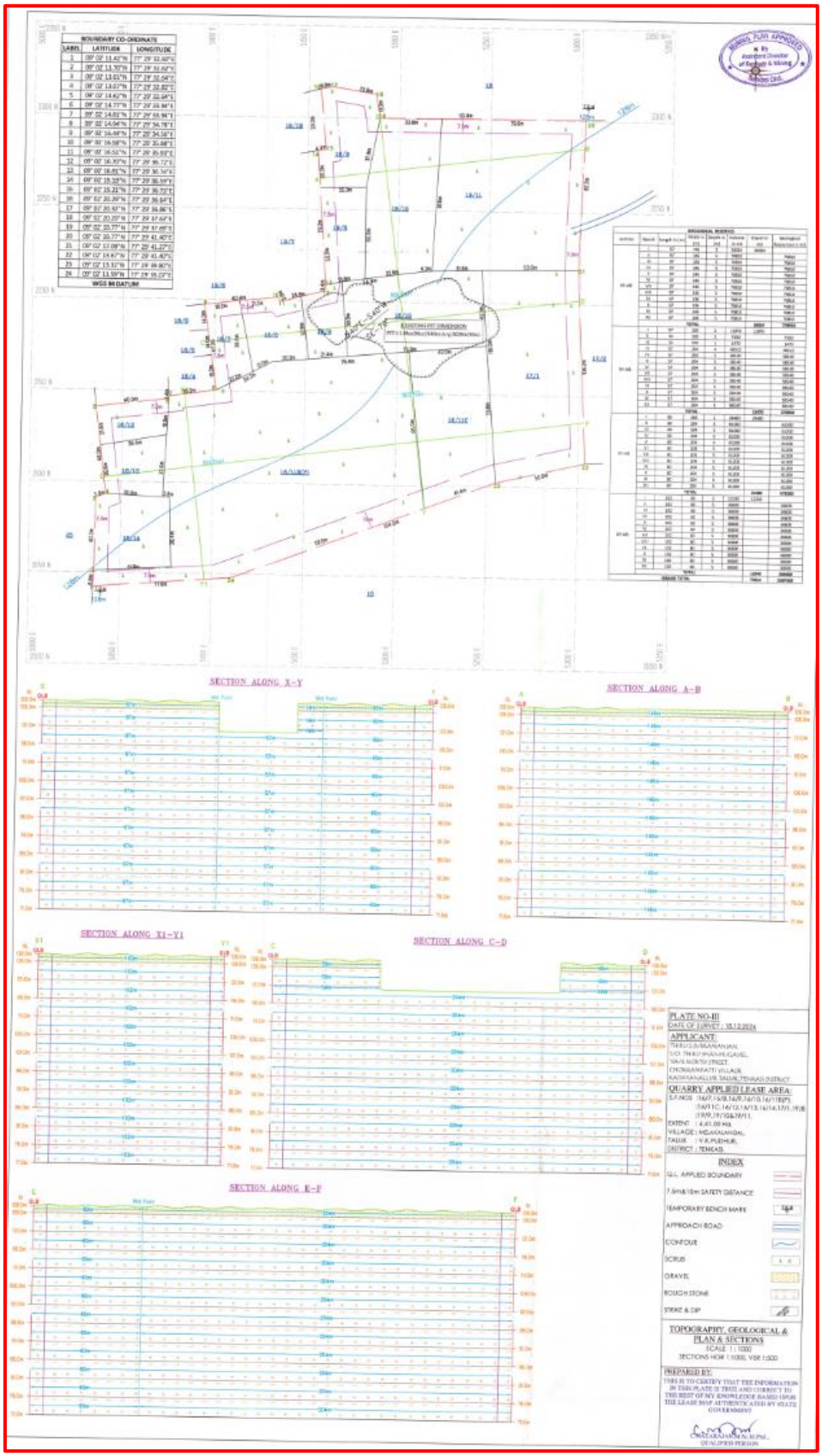


Figure 2-10 Available Geological Reserves

2.7.3 Already Excavated

The area has been quarried in earlier operation the existing pit dimension are given below.

Table 2-7 Existing Pit Dimension

Pit No	length (Max) in(m)	Width (Max) in (m)	Depth (Max) in (m)
I	98	40	8m below ground level

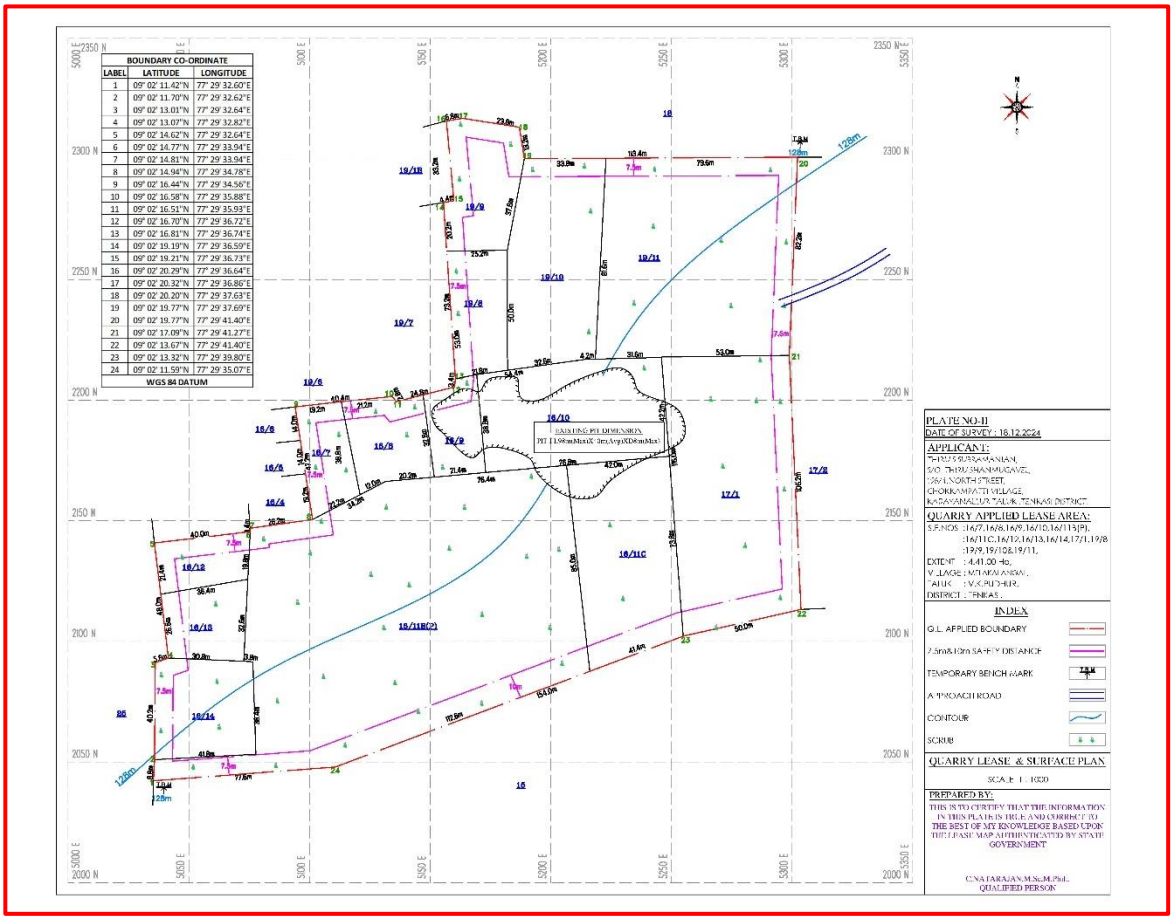


Figure 2-11 Quarry Lease and Surface Plan

2.7.4 Available Mineable Reserve

The available mineable reserve calculated by deducting 10m safety distance and bench loss.

Table 2-8 Available Mineable Reserve

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel in m^3	Mineable Reserves of rough stone in m^3
XY-AB	I	89	129	2	22962	22962	
	II	86	123	5	52890		52890
	III	81	113	5	45765		45765

	IV	76	103	5	39140		39140
	V	71	93	5	33015		33015
	VI	66	83	5	27390		27390
	VII	61	73	5	22265		22265
	VIII	56	63	5	17640		17640
	IX	51	53	5	13515		13515
	X	46	43	5	9890		9890
	XI	41	33	5	6765		6765
	XII	36	23	5	4140		4140
	Total					**22962**	**272415**
XY-CD	I	14	88	2	2464	2464	
	II	14	82	5	5740		5740
	III	14	72	1	1008		1008
	III	57	171	4	38988		38988
	IV	57	161	5	45885		45885
	V	57	151	5	43035		43035
	VI	57	141	5	40185		40185
	VII	57	131	5	37335		37335
	VIII	57	121	5	34485		34485
	IX	57	111	5	31635		31635
	X	57	101	5	28785		28785
	XI	57	91	5	25935		25935
	XII	52	81	5	21060		21060
	Total					**2464**	**354076**
XY-EF	I	49	196	2	19208	19208	
	II	46	193	5	44390		44390
	III	41	188	5	38540		38540
	IV	36	183	5	32940		32940
	V	31	178	5	27590		27590
	VI	26	173	5	22490		22490
	VII	21	168	5	17640		17640
	VIII	16	163	5	13040		13040
	IX	11	158	5	8690		8690
	X	6	148	5	4440		4440

	Total					**19208**	**209760**
X1Y1-EF	I	85	52	2	8840	8840	
	II	79	49	5	19355		19355
	III	69	44	5	15180		15180
	IV	59	39	5	11505		11505
	V	49	34	5	8330		8330
	VI	39	29	5	5655		5655
	VII	29	24	5	3480		3480
	VIII	19	19	5	1805		1805
	Total					**8840**	**65310**
Grand Total						**53474**	**901561**

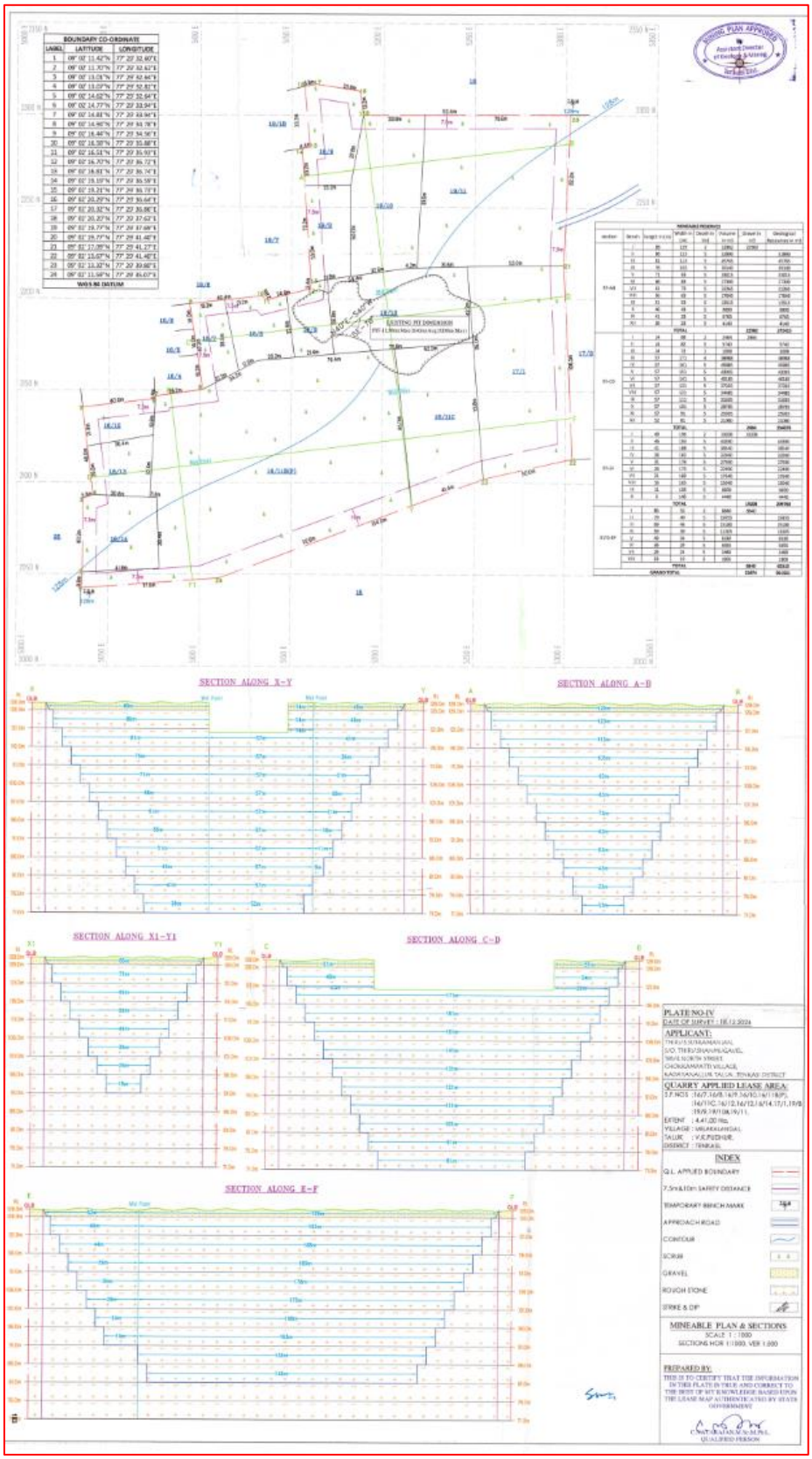


Figure 2-12 Mineable Reserves

2.7.5 Year-wise Production Plan

The production of minerals for the next five years as per the mining plan is given Table

Table 2-9 Year-wise Production Details

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel in m^3	Mineable reserve of Rough stone in m^3
I	XY-AB	I	89	129	2	22962	22962	
		II	86	123	5	52890		52890
		III	81	113	5	45765		45765
	XY-CD	I	14	88	2	2464	2464	
		II	14	82	5	5740		5740
		III	14	72	1	1008		1008
		III	57	171	4	38988		38988
	XY-EF	I	36	196	2	14112	14112	
		II	36	193	5	34740		34740
Total							**39538**	**179131**
II	XY-EF	I	13	196	2	5096	5096	
		II	10	193	5	9650		9650
		III	41	188	5	38540		38540
		IV	36	183	5	32940		32940
	X1Y1-EF	I	85	52	2	8840	8840	
		II	79	49	5	19355		19355
		III	69	44	5	15180		15180
		IV	59	39	5	11505		11505
	XY-CD	IV	57	161	5	45885		45885
	XY-AB	IV	14	103	5	7210		7210
Total							**13936**	**180265**
III	XY-AB	IV	62	103	5	31930		31930
		V	71	93	5	33015		33015
	XY-CD	V	57	151	5	43035		43035
		VI	10	141	5	7050		7050
	XY-EF	V	31	178	5	27590		27590
		VI	26	173	5	22490		22490
		V	49	34	5	8330		8330

	X1Y1-EF	VI	39	29	5	5655		5655
Total								**179095**
IV	XY-CD	VI	47	141	5	33135		33135
		VII	57	131	5	37335		37335
		VIII	40	121	5	24200		24200
	XY-AB	VI	66	83	5	27390		27390
		VII	61	73	5	22265		22265
	XY-EF	VII	21	168	5	17640		17640
		VIII	16	163	5	13040		13040
	X1Y1-EF	VII	29	24	5	3480		3480
		VIII	19	19	5	1805		1805
Total								**180290**
V	XY-CD	VIII	17	121	5	10285		10285
		IX	57	111	5	31635		31635
		X	57	101	5	28785		28785
		XI	57	91	5	25935		25935
		XII	52	81	5	21060		21060
	XY-EF	VIII	56	63	5	17640		17640
		IX	51	53	5	13515		13515
		X	46	43	5	9890		9890
		XI	41	33	5	6765		6765
		XII	36	23	5	4140		4140
		IX	11	158	5	8690		8690
		X	6	148	5	4440		4440
Total								**182780**
Grand Total							**53474**	**901561**

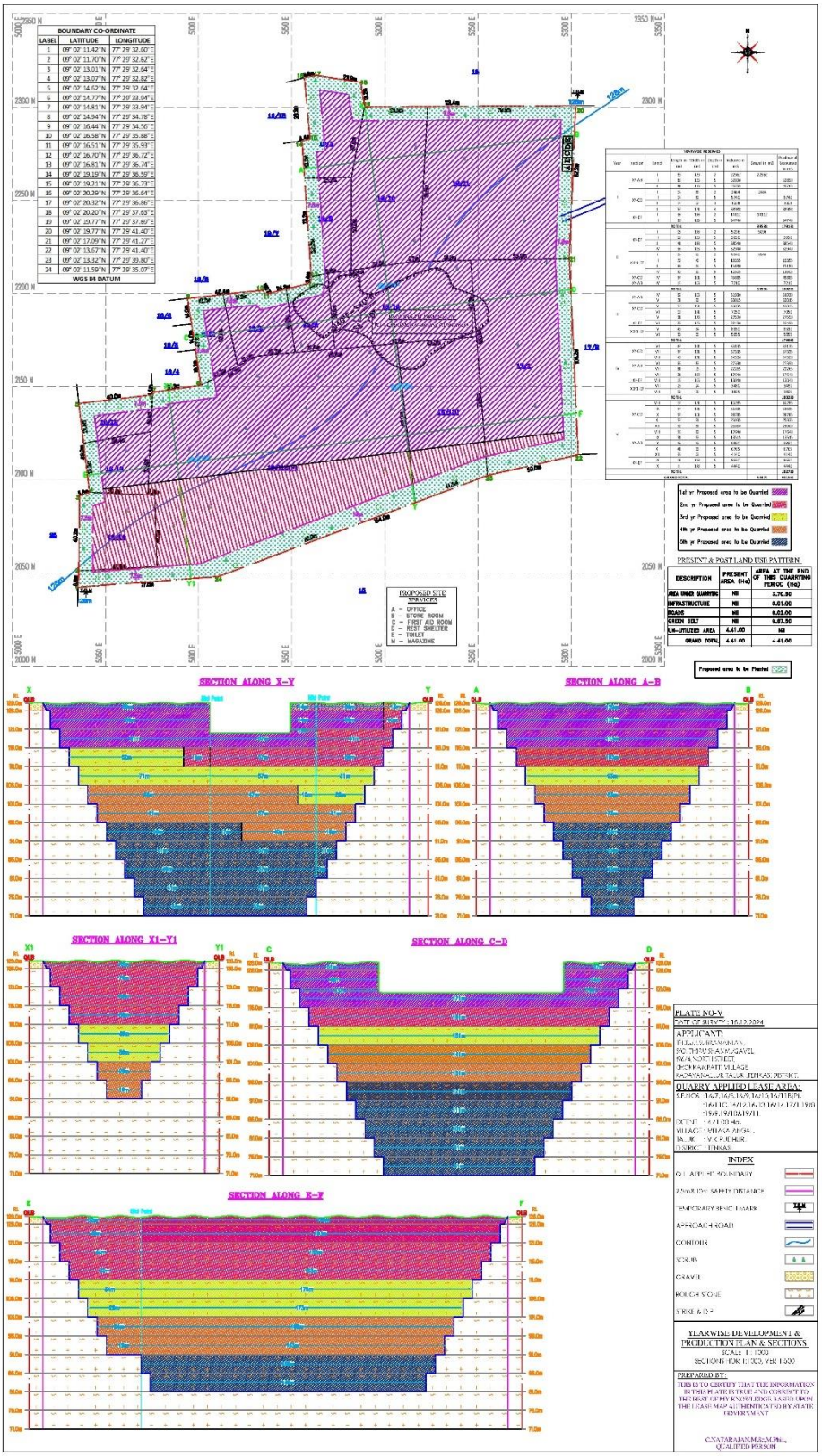


Figure 2-13 Year-Wise Production Plan

2.7.6 Conceptual Plan

Conceptual Mining Plan is prepared with an object of five years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc. Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. The ultimate pit dimension is given below:

Ultimate Pit dimension (M) end of Mining plan Period			
Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)
I	248	149	57m BGL

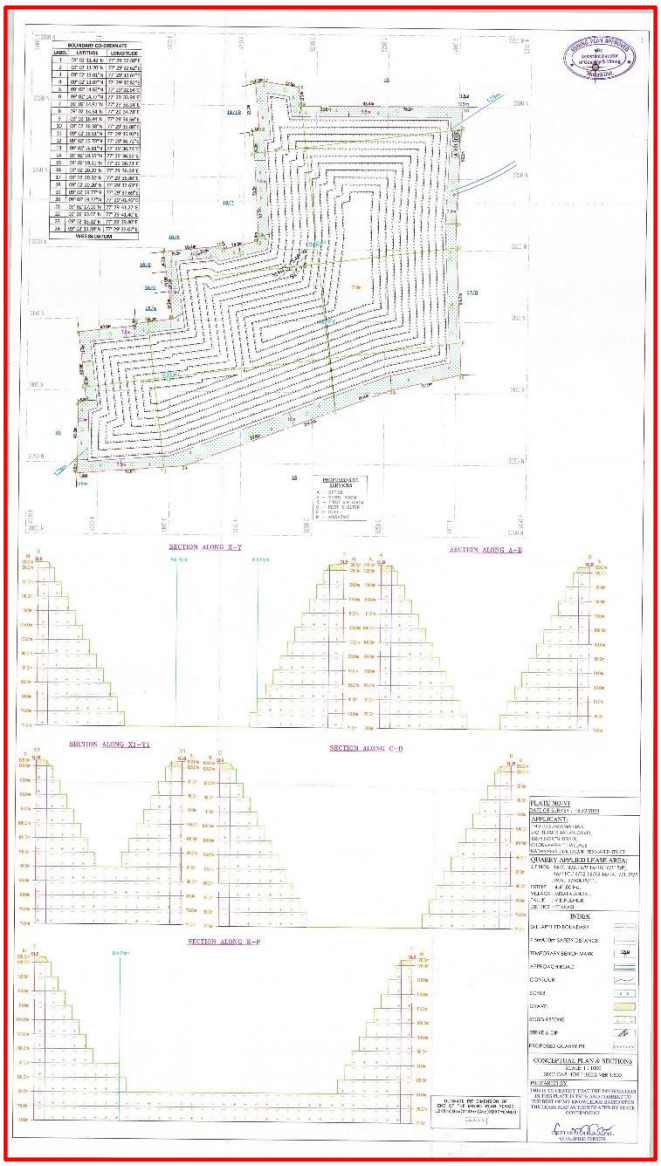


Figure 2-14 Conceptual Plan & Sections

2.8 Type of Mining

The proposed mining project is an opencast method of semi mechanized mining with 5.0m height 5m width of the bench. However, as far as the quarrying of rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom [possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106(2) (b) of MMR-1961, under Mine Act-1952.

2.8.1 Mode of working

The rough stone is proposed to quarry 5m bench height, 5m width with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of rough stone to the needy crusher/other buyers. The production of rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crusher/other buyers.

Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.

The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining.

2.8.2 Details of Overburden

The overburden in the form of Gravel, after the excavation of Gravel and Rough stone will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low-lying areas.

2.8.3 Details of Machineries to be used in mining

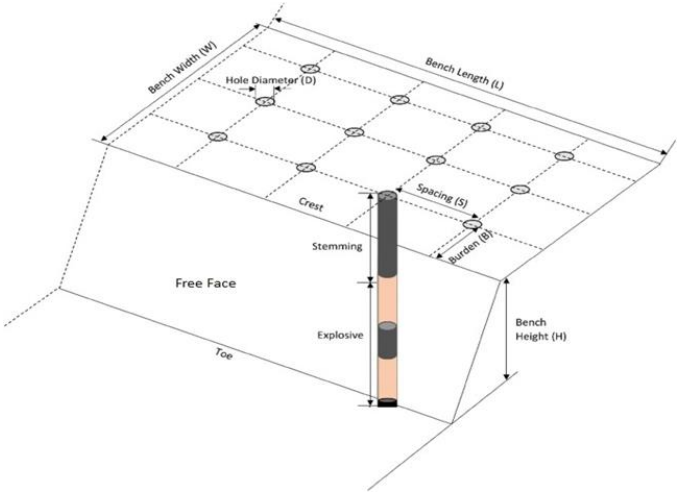
Table 2-10 List of Machineries

<table>
<tr><td>Drilling</td><td colspan="6"><table>
<tr><th>S.No</th><th>Type</th><th>Nos</th><th>Dia Hole mm</th><th>Size Capacity</th><th>Make</th><th>Motive power</th></tr>
<tr><td>1</td><td>Jack hammer</td><td>10</td><td>32</td><td>1.2m to 6m</td><td>Atlas Copco</td><td>Compressed air</td></tr>
<tr><td>2</td><td>Compressor</td><td>3</td><td>-</td><td>-</td><td>Atlas Capco</td><td>Diesel Drive</td></tr>
</table></td></tr>
<tr><td>Loading</td><td colspan="6">Excavator of 0.90m^3 bucket capacity (with Rock breaker attachment) (1No).</td></tr>
<tr><td>Transportation</td><td colspan="6">Tipper 6Nos (5/10Ts) capacity.</td></tr>
</table>

2.8.4 Blasting

The massive formation shall be broken into pieces of portable size by drilling and blasting using jack hammers and shot hole blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 Tonnes per K.g of explosives. Blasting parameters are as follows.

Diameter of the hole	Spacing	Depth	Burden for hole	Pattern of hole	Inclination of hole
32-36mm	0.6m	1 to 1.5m	0.6m	Zig Zag	70^0 from the horizontal



2.8.5 Type of Explosive to be used

Small dia, 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of rough stone. No deep hole drilling or primary blasting is proposed.

2.8.6 Measures to minimize und vibration due to blasting

Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock.

Number of holes	:	520
Powder factor	:	6Ts/Kg of explosives
Total explosive required	:	260Kg slurry explosives
Charge / hole	:	0.5Kg
Blasting time	:	12-2 Pm

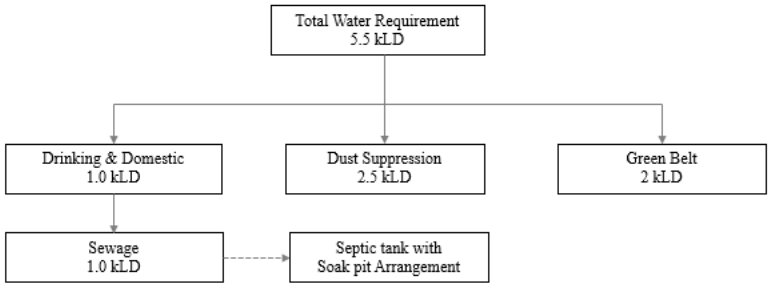
2.8.7 Storage & Safety measures taken during blasting

The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager. The applicant ensure that will appoint the Mate (Should have Valid Blaster Certificate) during Blasting Operation.

2.9 General Features

2.9.1 Water requirement

The total water requirement would be 5.5 kLD, which will be sourced from Local vendors. Out of 5.5 kLD, 1.0 kLD will be used for Drinking and Domestic purpose, 2.5 kLD will be used for Dust Suppression and remaining 2 kLD will be used for Green Belt. The water balance chart is shown below:



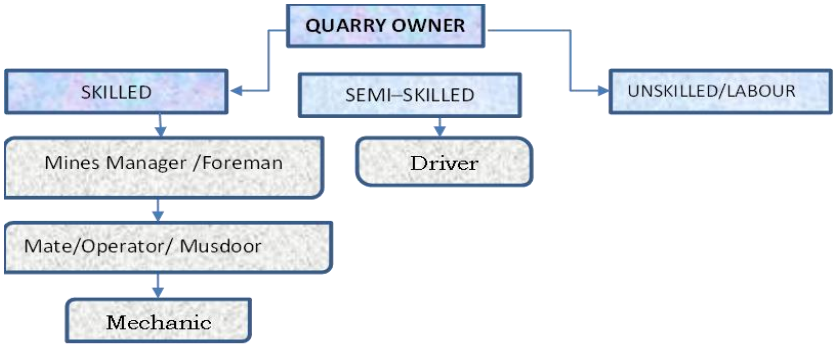
2.9.2 Surface drainage pattern

In an open cast mining project, the nearby streams may experience high siltation. The contours decide the runoff pattern of catchment area. It also indicates erosion potential. These may have significant impacts on water resources. However, in absence of any perennial drainage in the vicinity of mine and flat terrain having not higher than first order drain, the impact on water regime, with appropriate mitigation measures as mentioned, is likely to insignificant.

2.9.3 Manpower Requirement

The details of the manpower requirement are detailed below

1.	Skilled	Mines Manager	1 No.
		Foreman / Mate	2 No.
		Operator	12 No.
		Mechanic	1 No.
2.	Semi–skilled	Driver	6 No.
3.	Unskilled	Labours	12Nos
		Total =	**34Nos**



2.9.4 Green Belt

The PP will plant 675 Saplings (0.675 * 1000 = 675). The safety zone area of 0.67.50 Ha will be maintained as green belt area. This area will be planted with local Species of 675 Nos. of saplings. In the conceptual stage internal road and office area will be planted with local species.

Table 2-11 Green Belt development Plan

S.No.	Year	Species	No. of trees	Spacing	Survival
1	I	Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca	135	3m x 3m	87%
2	II		135		
3	III		135		
4	IV		135		
5	V		135		
Total			**675**		

The layout showing green belt plan is shown below

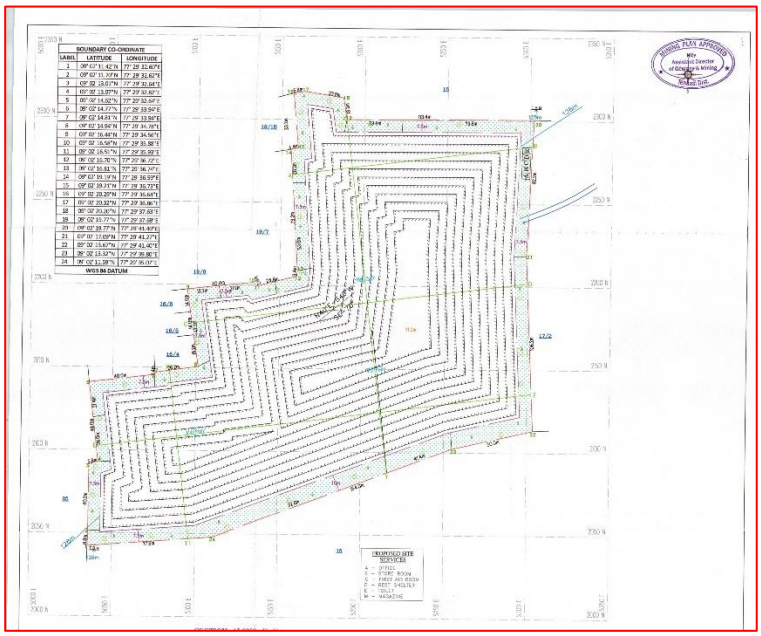


Figure 2-15 Green Belt Layout

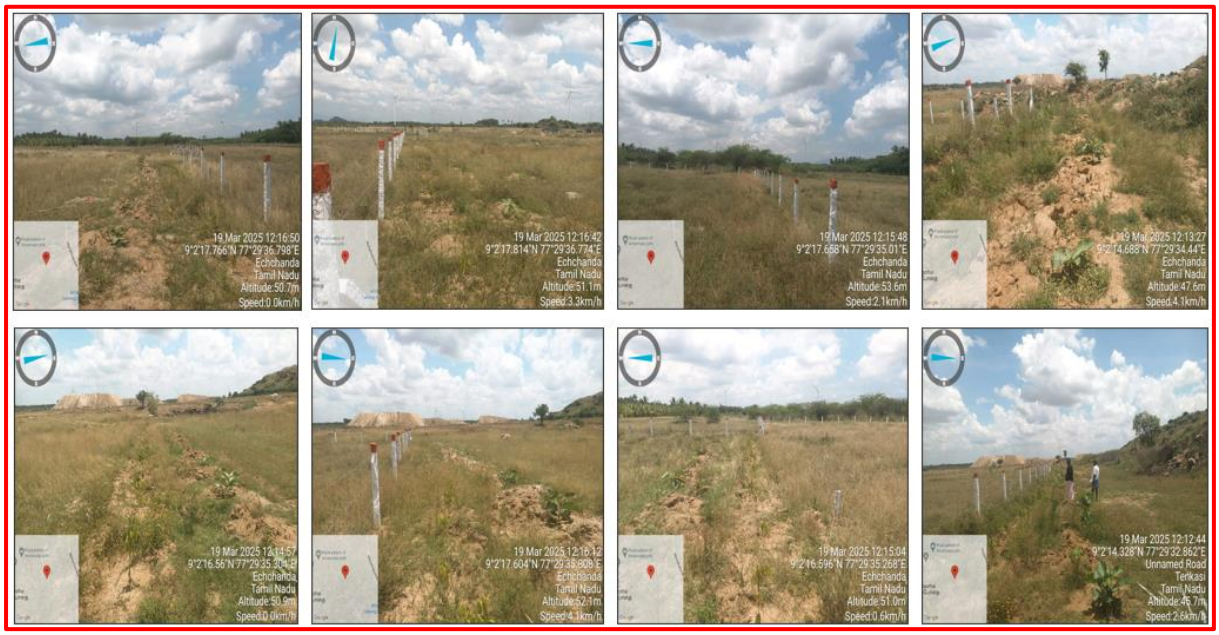


Figure 2-16 Fencing Photos

2.9.5 Energy Requirement

7,30,161 litres of HSD is required for the entire project life

2.9.6 Vehicular Traffic Density

The proposed quarry is located in Melakalangal village. The details of transport route from the crusher plant is shown below:

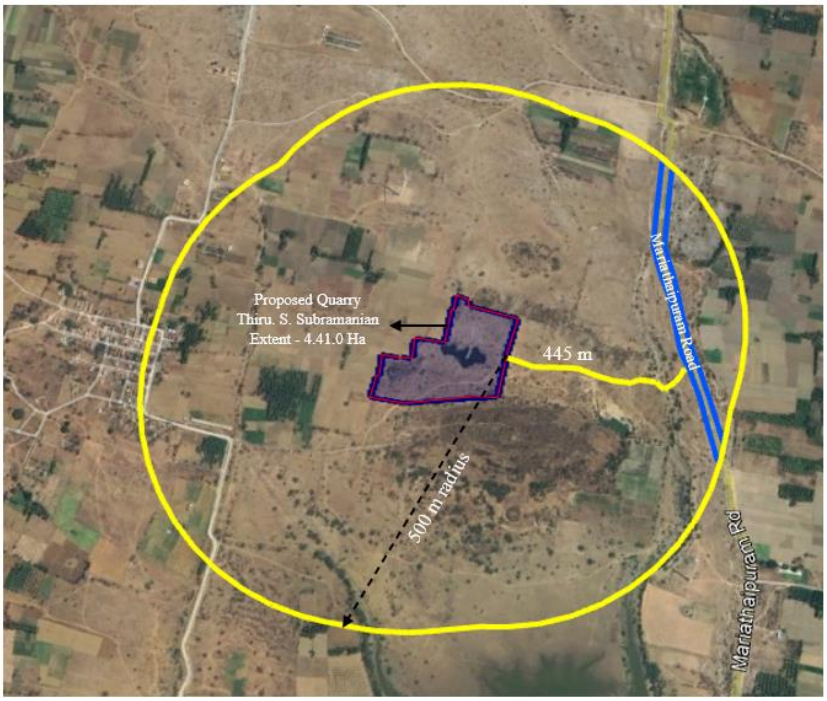


Figure 2-17Transport route from the crusher plant

The vehicular traffic survey will be carried out in the route through which mined out minerals are transported. Within 500 m radius, there is another existing quarry – Thiru. Senthur Pandian. The No. of trips per day for carrying the mine out mineral for this project is 153 Nos. The No. of trips per day for carrying the mine out mineral for Thiru. S. Subramanian is 153 Nos. and for Thiru. Senthur Pandian is 153 Nos. Traffic Survey is conducted in Mariathaipuram Road

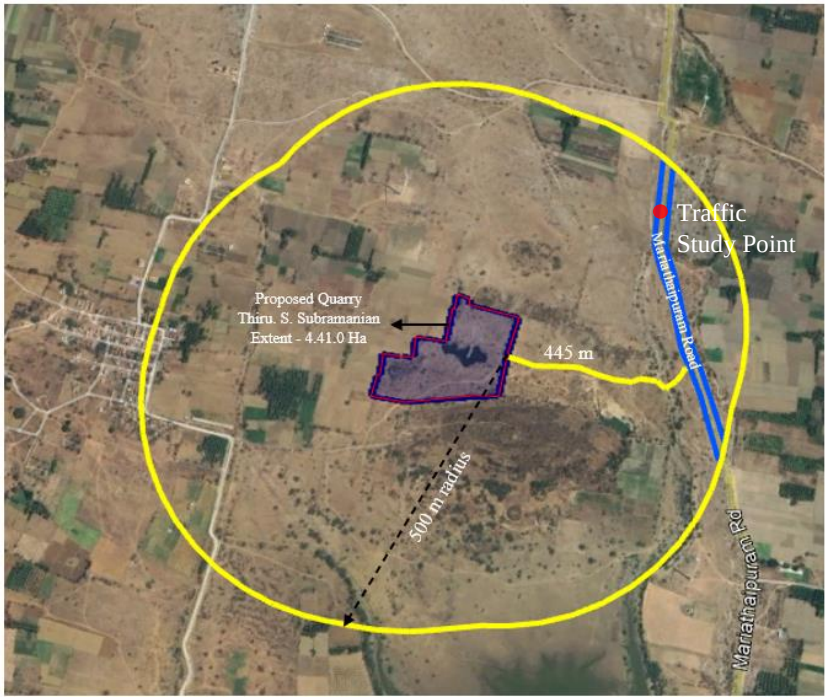


Figure 2-18 Traffic Study Point

Methodology

Vehicle Count

The vehicles passing through the road (in both ways) were counted separately for 24 hours at the one elected location from 0600 hrs to 0600 hrs next day continuously. Category wise vehicle counting has been done continuously and recorded in the traffic volume count on hourly basis under respective categories.

Categorization of Traffic

The engine driven vehicles were categorized into various heads viz. two wheelers, three wheelers, four wheelers and trucks/bus. The level of service is given below. (Source: Recommended Design Service Volumes (PCUs per hour), IRC)

Level of Service	General Operating conditions	Range of V/C
A	Free flow (traffic flows at or above speed limit and motorists have complete mobility between lanes)	<0.30
B	Reasonable flow (slightly more congested, with some maneuverability)	0.3 – 0.47
C	Stable flow (more congested than B, loads close to capacity)	0.48 – 0.68
D	Approaching unstable flow (speeds are somewhat reduced, example: busy corridor during middle of a weekday, or a functional urban highway during rush hour)	0.69 – 0.88
E	Unstable flow (flow becomes irregular, speed varies widely and rarely reaches speed limit)	0.88 - 1.00
F	Forced or breakdown flow (a constant traffic jam)	>1.00

Table 2-12 Summary on Traffic Volume

Route	Existing Traffic Survey in PCU	Incremental Traffic Survey due to project	Total traffic survey volume	Hourly capacity in PCU as per IRC -1960 guidelines
Mariathaipuram Road	95	58	153	1500

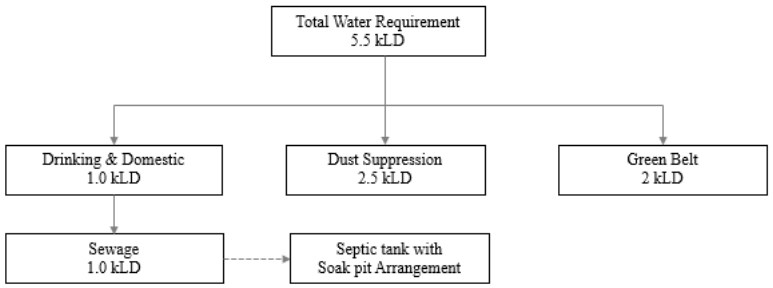
Table 2-13 Modified Level of service

Route	Existing Volume PCU/hr	Existing V/C Ratio	Additional Volume PCU/hr	Modified Volume PCU/hr	Modified V/C ratio	Modified LOS
Mariathaipuram Road	95	0.06	58	0.04	0.1	A*

2.9.7 Project Requirements

Table 2-14 Project Requirements

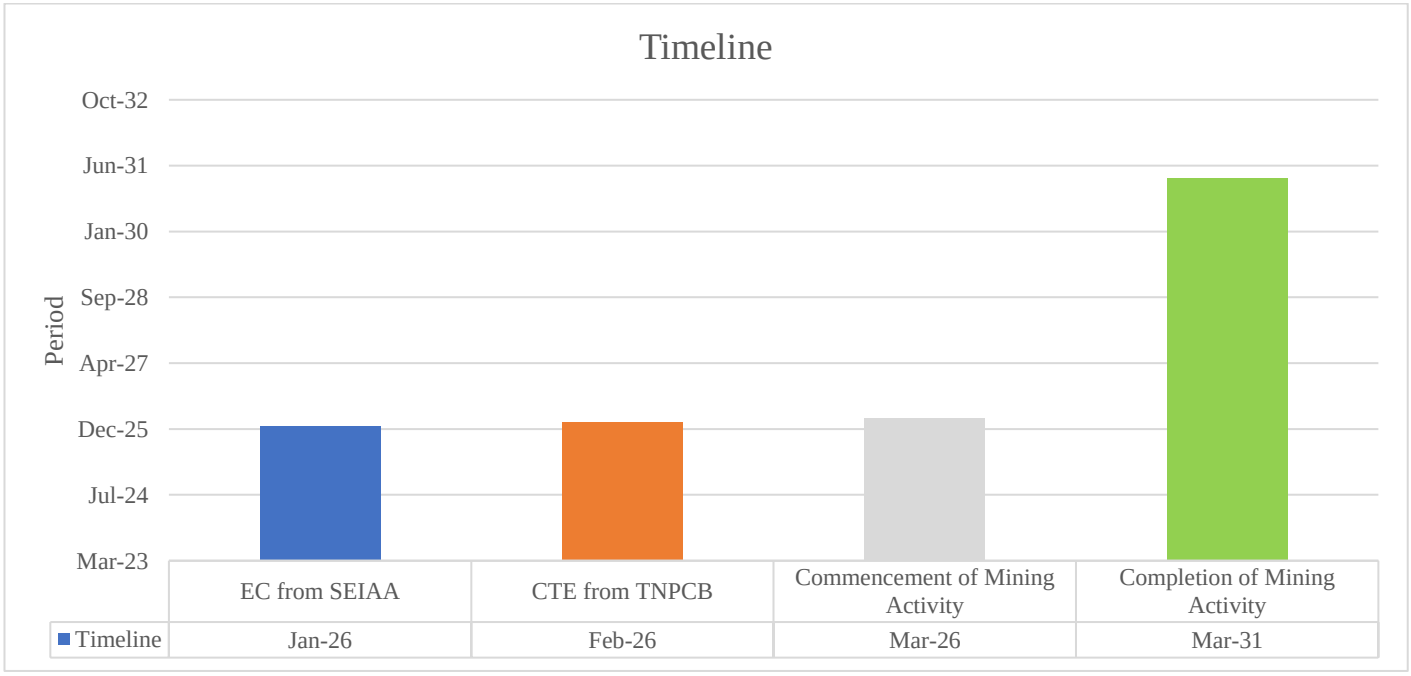
S. No.	Nature of requirement	Description
1.	Water requirement	The total water requirement would be 5.5 kLD, which will be sourced from Local vendors. Out of 5.5 kLD, 1 kLD will be used for Drinking and Domestic purpose, 2.5 kLD will be used for Dust Suppression and remaining 2 kLD will be used for Green Belt. The water balance chart is shown below:

		
2.	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid.
3.	Manpower requirement	34 Nos.
4.	Project Cost	Rs. 142 Lakhs
5.	CER Cost	Rs. 8,00, 000/-

2.10 Timeline for implementation of Project activities

Mining work will be started upon the grant of Environmental Clearance (E.C) from SEIAA and Consent to Establish (CTE) from TNPC Board. The mining activity will be completed in 5 years on receipt of all the statutory approvals.

Graph 2-1 Schedule for implementation of the proposed project



3 DESCRIPTION OF ENVIRONMENT

3.1 General

This chapter depicts the establishment of baseline for valued environmental components, as identified in and around the proposed project site with an area of 10 km radius. Primary baseline data monitoring covered one season (three (3) months) i.e., Dec'24 – Feb'25 (Winter) and secondary information was taken from government and semi-government organization's published data.

Primary baseline data are collected through field study and it covers

- Physical - the area, the soil properties, the geological characteristics, the topography, etc
- Chemical - water, air, noise and soil pollution levels, etc.
- Biological - the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic - demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.

Baseline study is carried out with an objective to assess the prevailing environmental quality and to compare the same after the establishment of the proposed project.

3.2 Study area extent

The study area for the proposed project is as follows:

- Mine Lease area as the "core zone"
- A study area of 10 km adius from the project boundary is designated as buffer Zone.

We have obtained Terms of Reference from SEIAA vide ToR Identification No. TO25B0108TN5277761N

3.3 Monitoring Lab

The primary data for the proposed project was collected by M/s. Shrient Analytical and Research Labs Pvt Ltd, # 416/15, Dharga Road, Perungalathur, West Tambaram, Chennai – 600 045. (Accreditated by NABL as ISO/IEC/17025:2017)

3.4 Baseline Data Collection period

The baseline data is collected in accordance with the CPCB Guidelines. Primary baseline data monitoring covered one season (three (3) months) i.e., Dec'24 – Feb'25 (Winter)

3.4.1 Frequency of Monitoring

Table 3-1 Frequency of Sampling and Analysis

S. No.	Attribute	Details of Baseline data	Frequency
1.	Air Environment		
i	Ambient air quality	Type of data: Primary data Sampling Locations: Project site and 6 surrounding locations within 10 km radius of the project site	24 hourly twice a week 4 hourly. Twice a week, One non-monsoon season

		Period: Dec'24 – Feb'25	8 hourly, twice a week 24 hourly, twice a week
ii	Noise Level	Type of data: Primary data Sampling Locations: Project site and 6 surrounding locations within 10 km radius of the project site Period: One-time sampling	24 hourly Once in 5 locations
iii	Meteorological Data	Type of data: Project Site Note: Secondary for choosing the baseline monitoring locations Source: Indian Meteorological Department (IMD), Chennai	1 hourly continuous
2	Water Environment		
i	Ground water	Type of data: Primary data Sampling Locations: Project site and 6 surrounding locations Within 10 km radius of the project site Period: Once during the study period	One time sampling
ii	Surface water	Type of data: Primary data Project site – Nil Within 10 km – 2 Nos. .	One time sampling
3	Land Environment		
i	Land use & land cover	Type of data: Secondary Source: GIS Study for Land use/ Landcover details of 10 km radius	
ii	Soil analysis	Type of data: Primary data Sampling Locations: Project site and 6 surrounding locations within 10 km radius of the project site Period: Once during the study period	One time sampling
4	Socio – Economic Environment	1. Primary data: Project site (10 km around the project site) 2. Secondary data: Source: 'Census of India' 2011	One time sampling
5	Biological Environment	1. Primary data: Project site and selected locations in the 5 Km radius from the project site (Period: Jan 2025) 2. Secondary data: From 5 Km up to 10 km radius from the project site	

3.5 Study area details

Table 3-2 Study Area Details

S. No.	Description	Details	Source
1.	Project Location	S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu	Field Study
2.	Latitude & Longitude	S. No. / Latitude / Longitude 1. / 09° 02' 11.42"N / 77° 29' 32.60"E 2. / 09° 02' 20.29"N / 77° 29' 36.64"E 3. / 09° 02' 19.77"N / 77° 29' 41.40"E 4. / 09° 02' 13.67"N / 77° 29' 41.40"E	Land Documents
3.	Topo Sheet No.	58 G/08	Survey of India Toposheet
4.	Mine Lease Area	4.41.0 Ha	Land Documents
5.	Total population	1200	Census Survey of India
6.	Maximum Temperature	36.4°C	IMD
7.	Minimum Temperature	23.8°C	
8.	Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests	Nellai Wildlife Sanctuary is located at 17.11km.	Survey of India Toposheet
9.	Densely Populated Area	Melakalangal	
10.	Areas occupied by sensitive manmade land uses (hospitals, schools, places of worship, community facilities)	Malaikali Amman Temple, Uchipothai and Ramar Temple, Uchipothai	Field Study

3.5.1 Enumeration of the structures located within 500 m radius from the proposed quarry site

A site survey has been conducted to identify and list structures located within a 300 m radius from the proposed Quarry and are detailed below. There are no permanent structures or temples within a 300-meter radius from the project site. The PP has obtained a letter from Village Administrative Office (VAO), Tenkasi stating that there are no structures situated within 300 m radius.

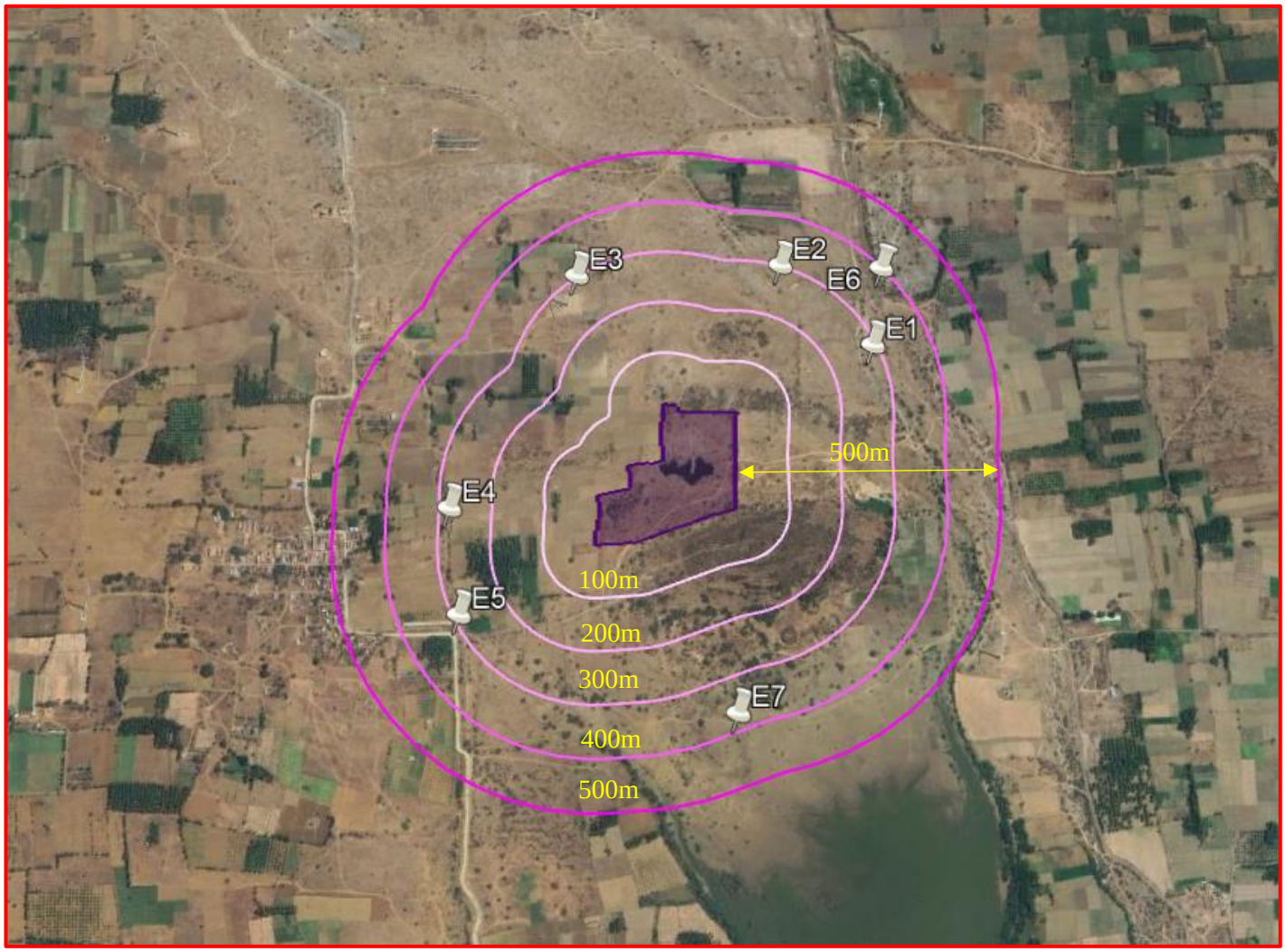


Figure 3-1 Google map showing Environmental Features located within 500 m radius from the proposed quarry site

S. No.	Name of the Feature	Distance and Direction
E1	Odai	254m (NE)
E2	Odai	256m (NE)
E3	Windmill	264m (NW)
E4	Odai	280m (W)
E5	Uchipothai Village Road	316m (SW)
E6	Melakalangal - Echantha Village Road	363m (E)
E7	Karisalkulam Kanmoi	365m (SE)

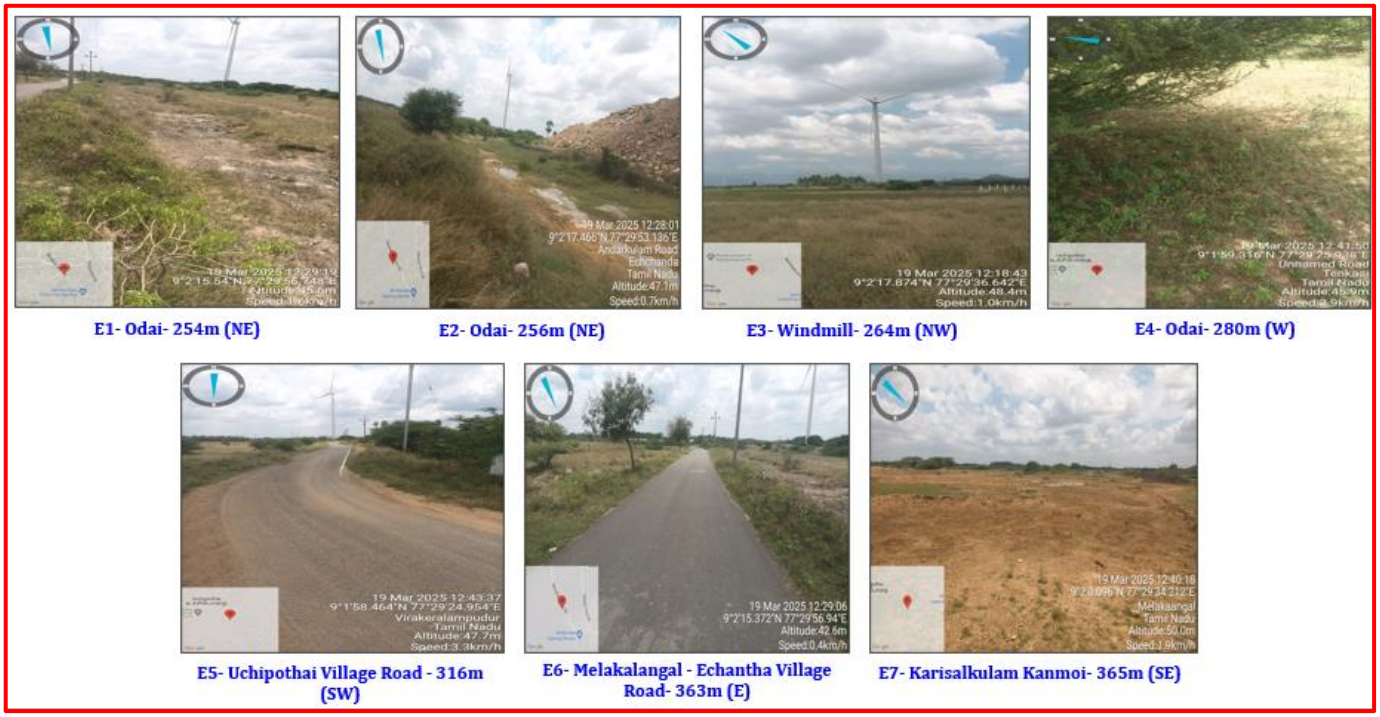


Figure 3-2 Photos of Environmental Features located within 500 m radius from the proposed quarry site

The details of the structures located within 500m radius is listed below

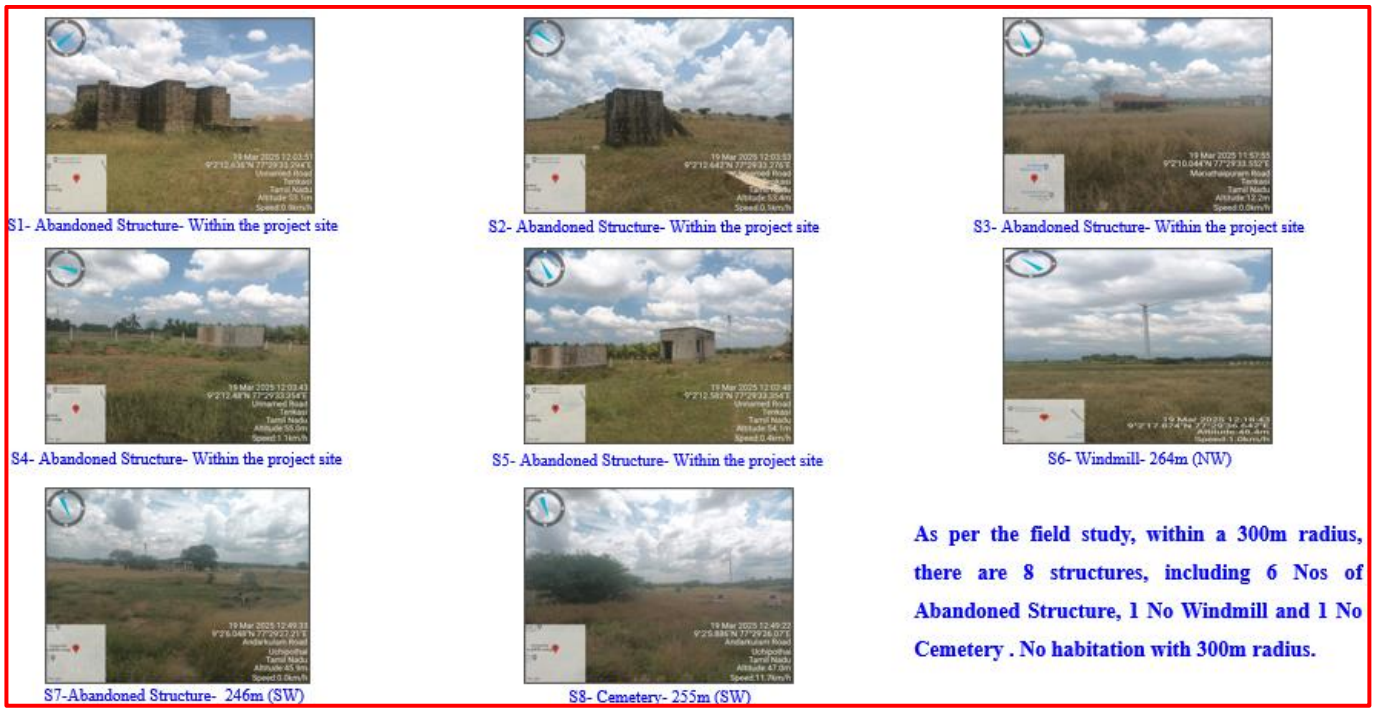
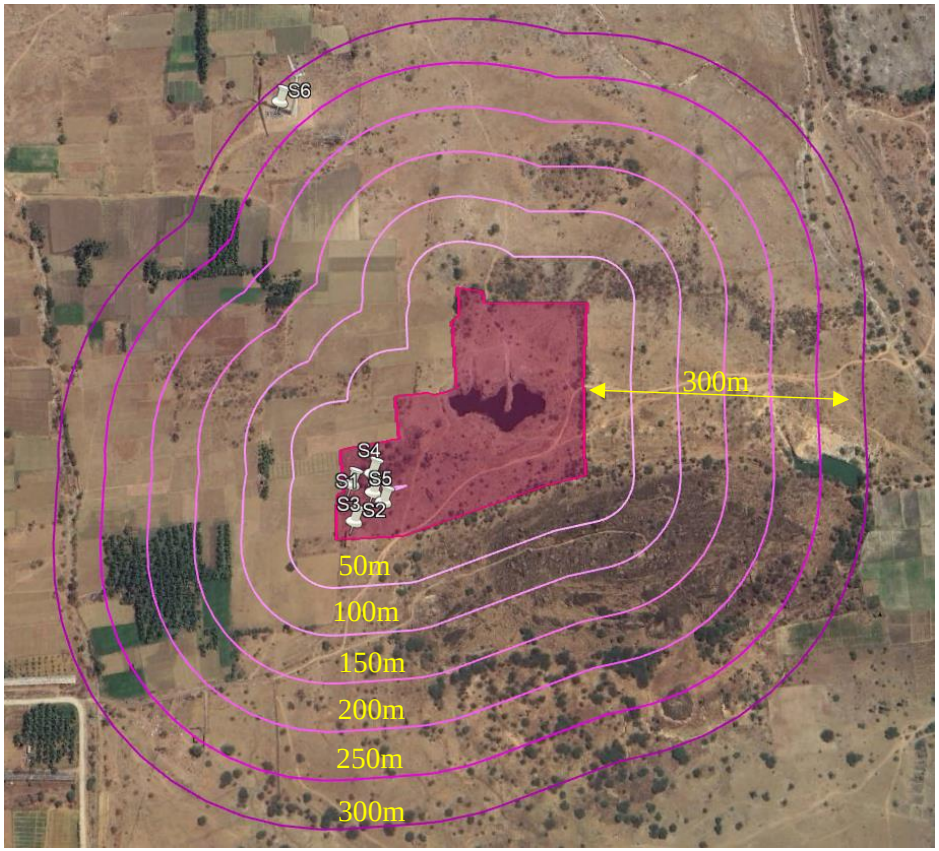
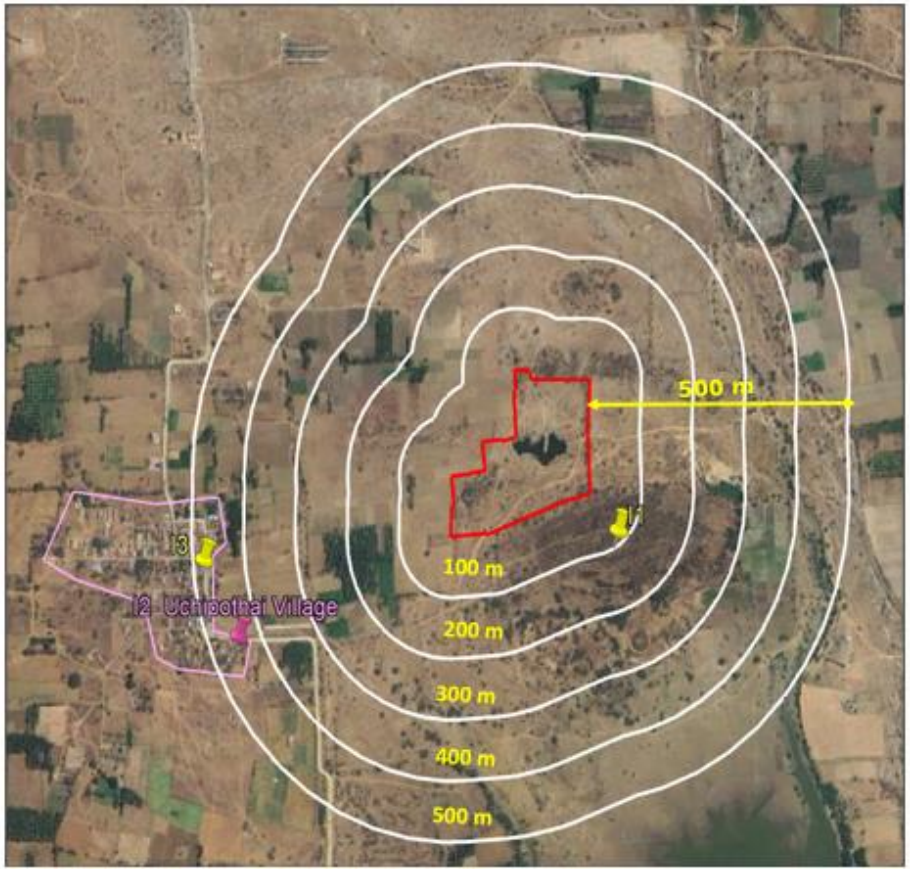


Figure 3-3 Photos of Structures located within 500 m radius from the proposed quarry site



S. No	Name of the Structure	Distance and Direction	Ownership	Occupant	Type	Age
S1	Abandoned Structure	Within the project site	Belongs to the PP	Nil	Masonry	> 8 years
S2	Abandoned Structure	Within the project site		Nil	Masonry	> 8 years
S3	Abandoned Structure	Within the project site		Nil	Masonry	> 8 years
S4	Abandoned Structure	Within the project site		Nil	Masonry	> 8 years
S5	Abandoned Structure	Within the project site		Nil	Masonry	> 8 years
S6	Abandoned Structure	264m (SW)	Does not belong to the PP	Nil	Masonry	> 8 years
S7	Cemetery	255m (SW)		Nil	Masonry	> 8 years

Figure 3-4 Google map showing Structures located within 500 m radius from the proposed quarry site



Sl. No	Radius	School	Temple	Inhabited Village	Remark
1	0-100 m	Nil	1	Nil	Temple- 97m (SE)
2	100-200 m	Nil	Nil	Nil	Nil
3	200-300 m	Nil	Nil	Nil	Nil
4	300-400 m	Nil	Nil	Nil	Nil
5	400-500 m	Nil	1	1	Village- 439m (SW) Temple- 491m(W)

I1- Malaikali Amman Temple, Uchipothai - 97m (SE)

I2- Uchipothai Village - 439m (SW)

I2- Ramar Temple, Uchipothai Village - 491m (W)

Figure 3-5 Google map & Photos showing Schools, Temples and inhabited village within 500m radius from the project site

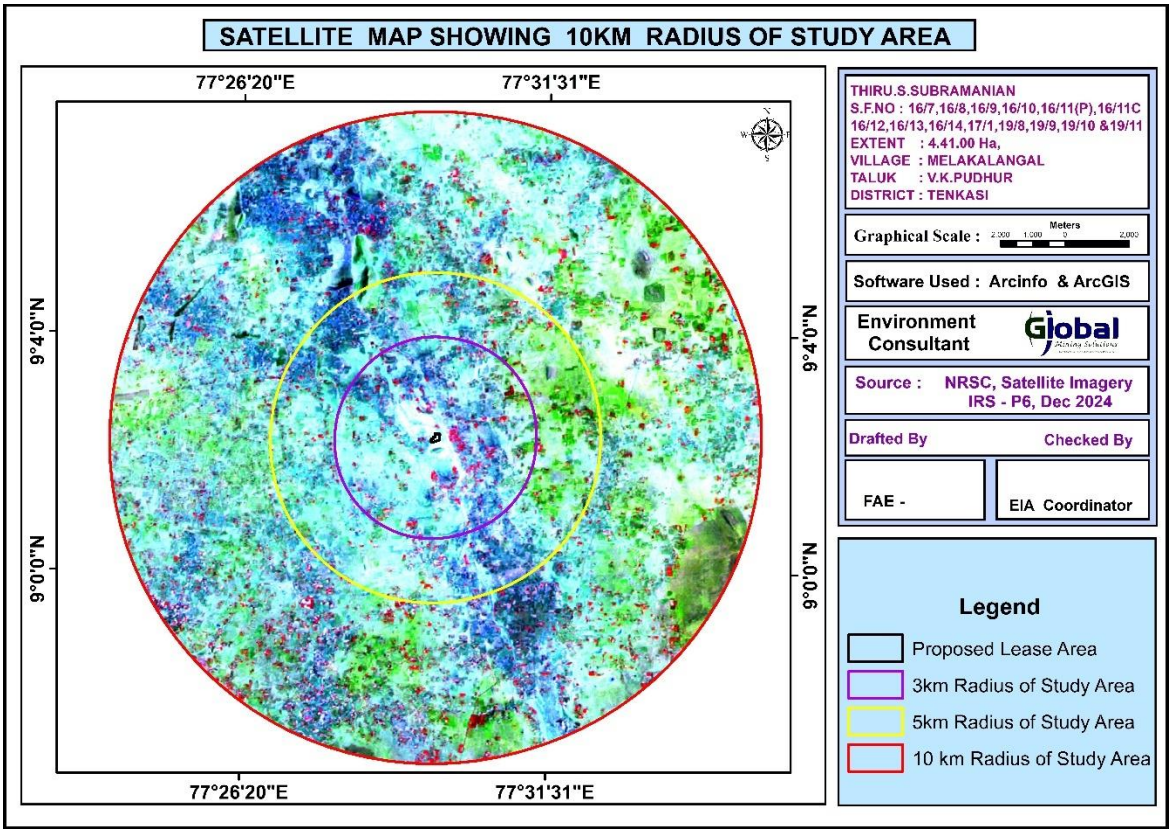


Figure 3-6 Satellite Image – 10km radius around the project site

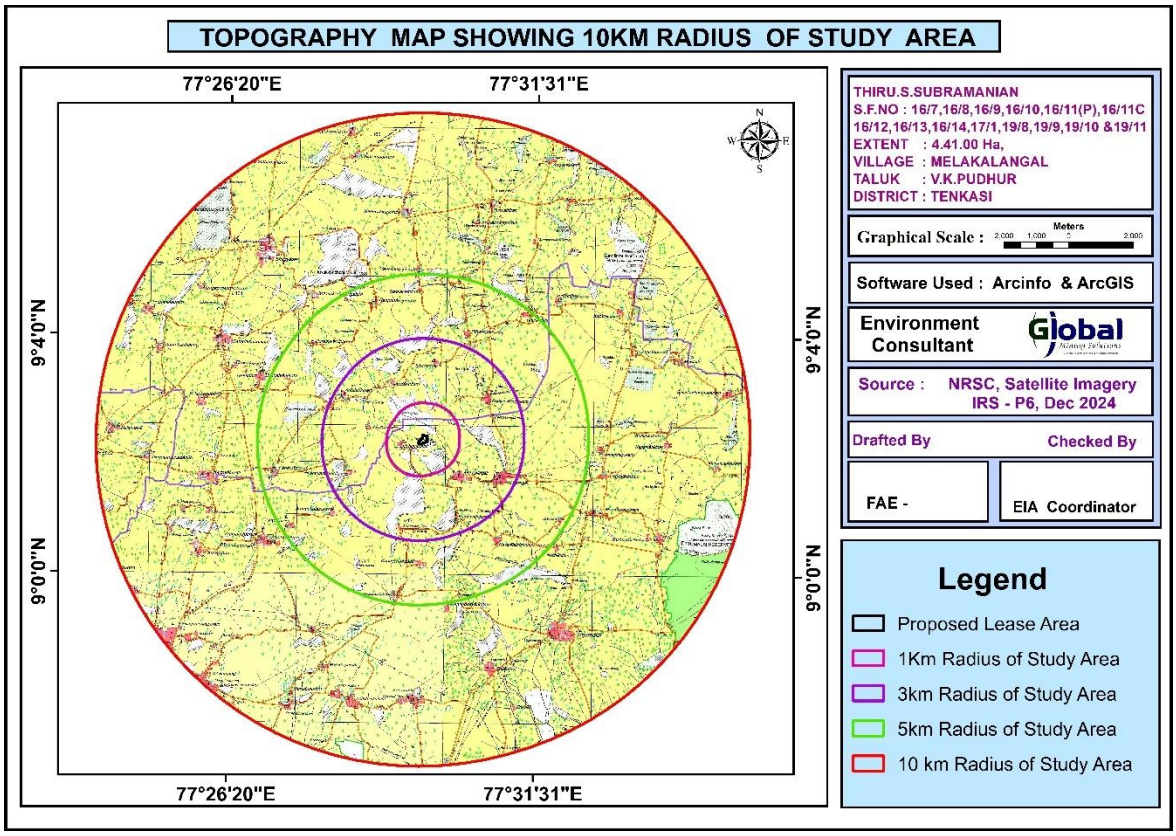


Figure 3-7 TOPO Map – 10km radius from the project site

3.6 Physical Conditions

The physical conditions of the study area are discussed:

- District Profile
- Land use, Drainage, Geology & Physiography
- Natural resources
- Seismic Zone Characteristics

3.6.1 District Profile

Tenkasi district was formed on 12.11.2019 vide. G.O.(MS) No.427, dated 12.11.2019 of Revenue and Disaster Management Department, Revenue Administration wing [RAI (1)] section, after bifurcating from Tirunelveli District. The Geographical area of the district is 2882.44 sq.kms which lies in the southwest part of Tamil Nadu. It lies in between 8º.57' and 8º.95' of the Northern latitude and 77º.18' and 77º.31' of Eastern longitude. The district has two revenue divisions viz., Tenkasi and Sankarankovil and 8 Taluks, 30 firkas, 246 revenue villages, 10 Development blocks, 6 Municipalities, 17 Town Panchayats and 221 Village Panchayats. The Population of the district was 14,40,795 as per 2011 census. The density of population per sq.km was 500 persons in the 2011 census. The sex ratiois1017females for every 1000 males. The literacy rate is 69% in the district as per2011census.Out of total population, males were 7,14,215 and females were 7,26,580 as per2011 census. The schedule caste population is 2,92,900 which represent 20% to the total population as per 2011 census. Schedule tribes are found to be very small in numbers of 3656 which is 0.3% to the total population.

Source: Directorate of Census Operations Tamil Nadu, “District Census Handbook 2011, Tenkasi District”

3.6.2 Land Use Analysis

Land Use classification:

Land Use / Land Cover - Land Use refers to man's activity and the various uses, which are carried on land. Land Cover refers to natural vegetation, water bodies, rock/soil, artificial cover and others, resulting due to land transformation. The present Land Use/Land Classification map is developed with following objectives. The main objective of the study is to classify the different land use within 10 km from the project boundary.

Methodology:

Information of land use and land cover is important for many planning and management activities concerning the surface of the earth (Agarwal and Garg, 2000). Land use refers to man's activities on land, which are directly related to land (Anderson et al., 1976). The land use and the land cover determine the infiltration capacity. Barren surfaces are poor retainers of water as compared to grasslands and forests, which not only hold water for longer periods on the surface, but at the same time allow it to percolate down.

The terms ‘land use’ and ‘land cover’ (LULC) are often used to describe maps that provide information about the types of features found on the earth’s surface (land cover) and the human activity that is associated with them (land use). Satellite remote sensing is being used for determining different types of land use classes as it provides a means of

assessing a large area with limited time and resources. However, satellite images do not record land cover details directly and they are measured based on the solar energy reflected from each area on the land. The amount of multi spectral energy in multi wavelengths depends on the type of material at the earth's surface and the objective is to associate particular land cover with each of these reflected energies, which is achieved using either visual or digital interpretation. In the present study the task is to study in detail the land use and land cover in and around the project site. The study envisages different LULC around the proposed project area and the procedure adopted is as below

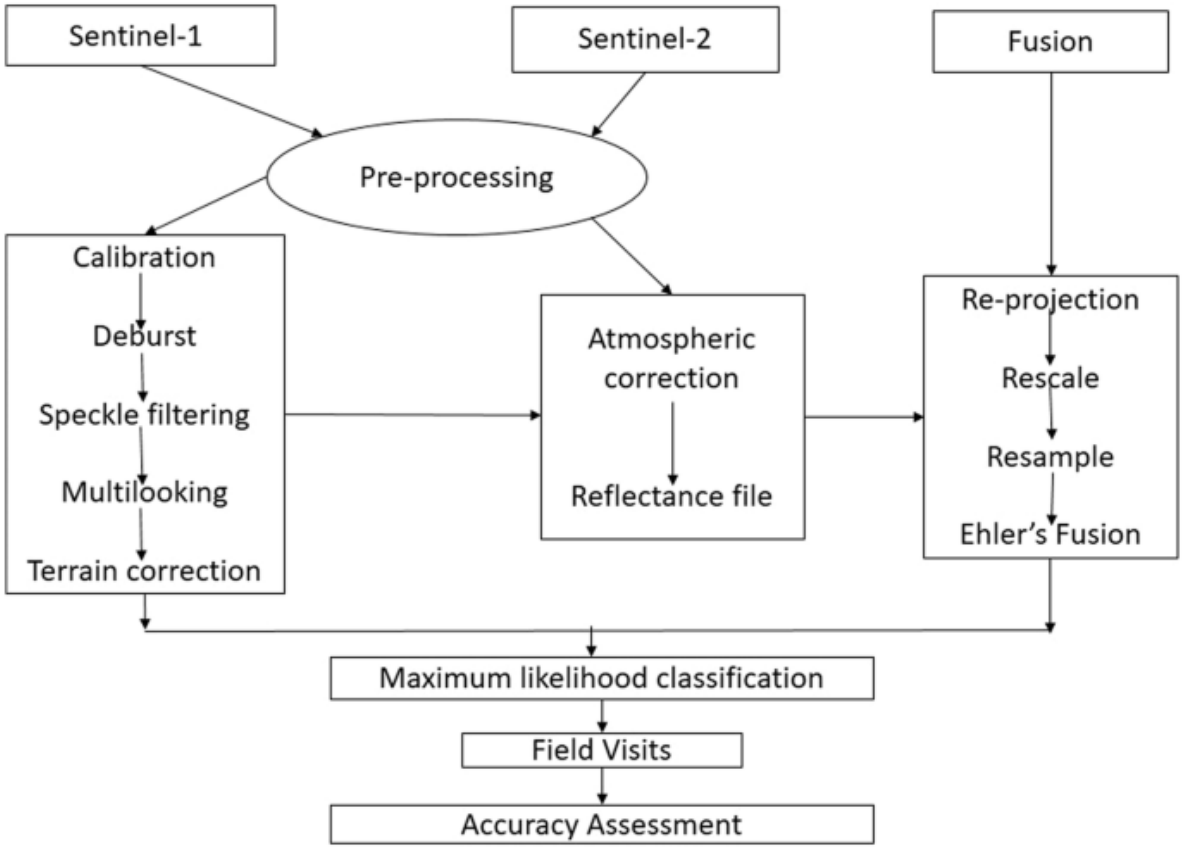


Figure 3-8 Flow-chart showing methodology of Land Use Mapping

Satellite Data:

Sentinal multispectral satellite data of 11th April 2022 was utilized for the present study. Details of satellite data is given below. The rectification of imagery was carried out on to bring the digital data on the earth coordinate system by means of ground control point (GCP) assignments/SOI topo sheets.

Scale of mapping:

Considering the user defined scale of mapping, 1:50000 Sential data on 1:50000 Scale was used for Land use / Land cover mapping of 10 km radius for proposed site. The description of the land use categories for 10 km radius and the statistics are given for 10 km radius.

Interpretation Technique:

Standard on screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the SOI topographical maps during the initial rapid reconnaissance of the study area. The physiognomic expressions conceived by image elements of color, tone, texture, size, shape, pattern, shadow, location and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

February 2016 FCC imagery (Digital data) of the study area was interpreted for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

1. Digitization of the study area (10 km radius from the proposed site) from the topo maps
2. In the present study the IRS –P6 satellite image and SOI topo sheets of 47-F/01,02,03have been procured and interpreted using the ERDAS imaging and ARC-GIS software adopting the necessary interpretation techniques.
3. Satellite data interpretation and vectorisation of the resulting units
4. Adopting the available guidelines from manual of LULC mapping using Satellite imagery (NRSA, 1989)
5. Field checking and ground truth validation
6. Composition of final LULC map

The LULC Classification has been done at three levels where level -1 being the broad classification about the land covers that is Built-up land, agriculture land, waste land, wet lands, and water bodies. These are followed by level –II where built-up land is divided into towns/cities as well villages. The agriculture land is divided into different classes such as cropland, Fallow, Plantation, while wastelands are broadly divided into, Land with scrub and without Scrub and Mining and Industrial wasteland. The wetlands are classified into inland wetlands, coastal wetlands and islands. The water bodies are classified further into River/stream, Canal, Tanks and bay. In the present study level II classification has been undertaken.

Ground verification:

Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed

soils, landform, nature and type of land degradation are recorded and the different land use classes are taken the Land use map.

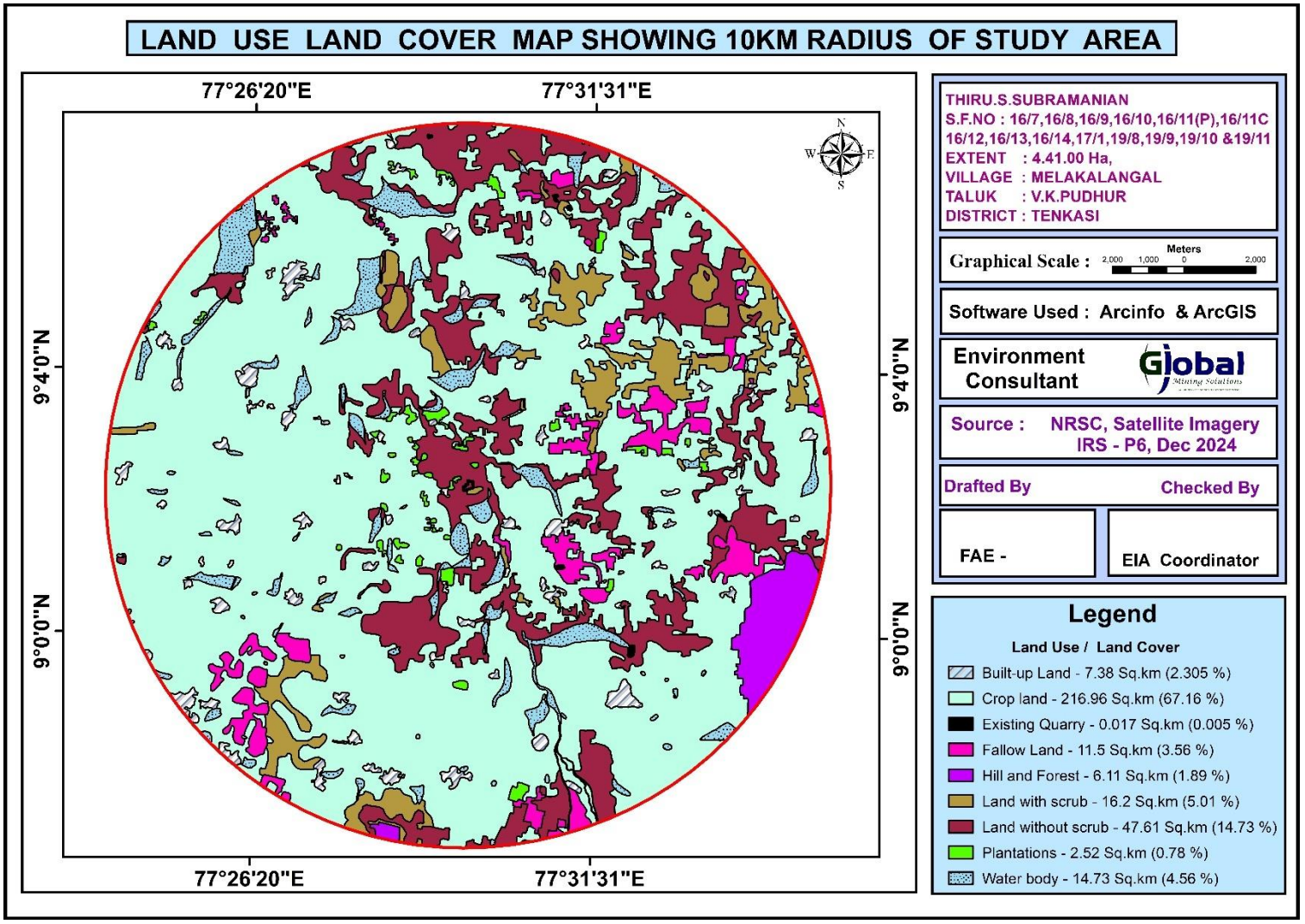


Figure 3-9 land Use Map – 10 km radius around the project site

Different Land use classes around 10 km radius from the project site are shown below

Table 3-3 land Use classification – 10km around the project site

Classification	Area in Sq.km	Percentage
Built – up Land	7.38	2.305
Crop Land	216.96	67.16
Existing Quarry	0.017	0.005
Fallow Land	11.5	3.56
Hill and Forest	6.11	1.89
Land with Scrub	16.2	5.01
Land without Scrub	47.61	14.73
Plantations	2.52	0.78
Water body	14.73	4.56

The land use pattern of the project site is shown below:

Table 3-4 Land use pattern of the project area

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	3.70.50
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.02.00
4.	Green Belt	Nil	0.67.50
5.	Unutilized	4.41.00	Nil
	Total =	**4.41.00**	**4.41.00**

3.6.3 Contour and Drainage:

The project site is 128m AMSL. The drainage pattern within 5km radius is dendritic.

The Chittar has 5 tributaries, 3 sub tributaries and numerous small streams contributing the flow. The Chittar and its tributaries have their origin in Courtallam hills in Tenkasi and Shencottai Taluks (also spelt as Taluk) of Tenkasi District. The Chittar runs for about 80 kms before it confluences with Tambarabarani. The Chittar's first tributary is Ayindaruviar (River of Five Falls), which has an anaicut and irrigates about 293.40 hectares of land. Hariharanadhi confluences with Chittar has two sub tributaries called, the Gundar and Mottaiar. The Mottaiar has a reservoir and a pick up anaicut feeding 141.64 hectares. The Gundar, which is also called "Karungalar" has 7 anaicuts and a reservoir. They irrigate 465.39 hectares of land altogether. Mottaiar joins Gundar and Gundar joins Hariharanadhi. The Hariharanadhi itself has

7 anaicuts and irrigates 445.10 hectares of land. Aludakanniar, another tributary to Chittar has 8 anaicuts irrigating 827.47 hectares of land. Hanumanadhi is the next tributary to Chittar. It has a sub tributary called Karuppanadhi. There is a reservoir of 185 m.cft, capacity across Karuppanadhi besides 6 anaicuts. These irrigate 3,844.59 hectares, the Hanumanadhi has 14 anaicuts and irrigates 4,046.94 hectares and the last tributary to Chittar is Uppodai. Uppodai irrigates 445.16 hectares through two anaicuts. The Chittar River itself has 17 anaicuts irrigating 8,903.27 hectares of land.

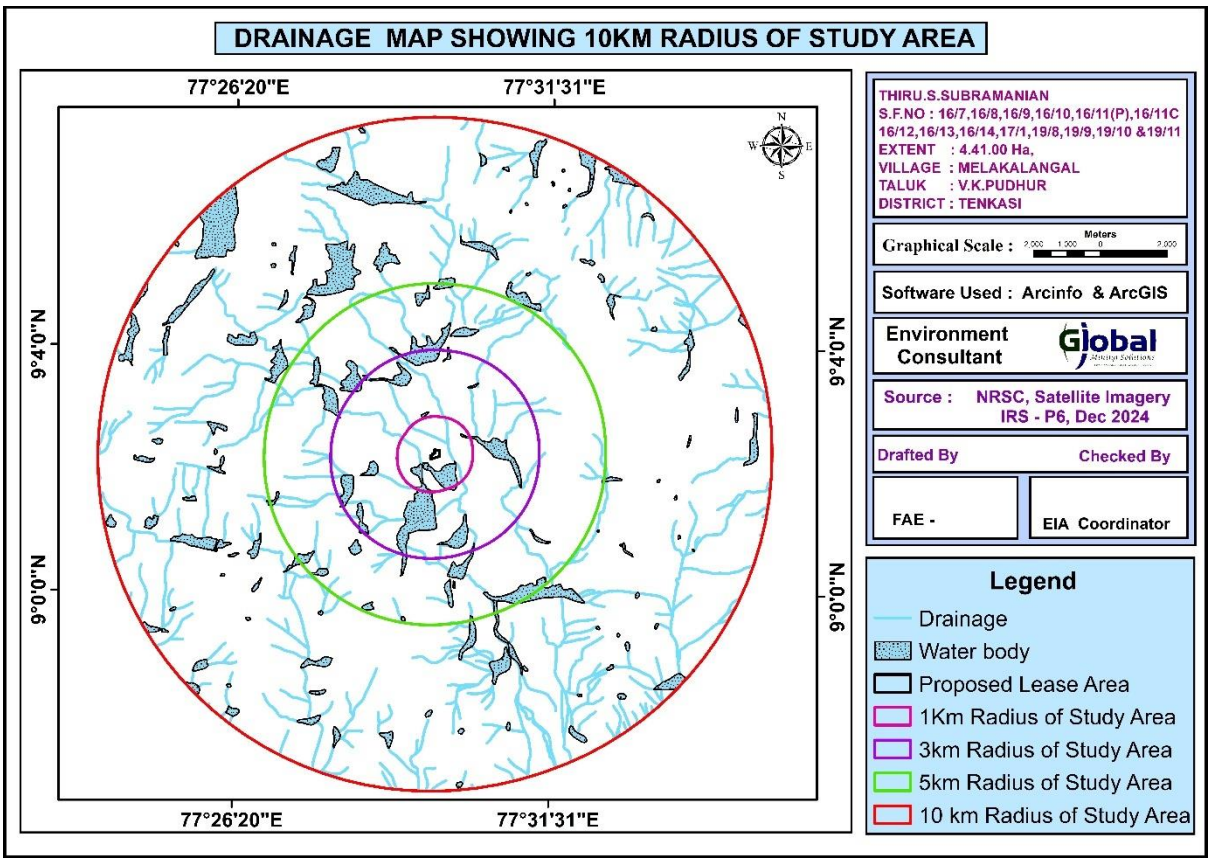


Figure 3-10 Drainage Map

3.6.4 Geomorphology

The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) moderately weathered buried pediplain 2) Pediment – Inselberg Complex 3) Residual Hill 4) Shallow weathered Burried Pediplain and 5) Structural Hills. The major part of the area is covered by weathered pediplain and it is formed by coalescence of pediments. A major part of the district constitutes a plain terrain with a gentle slope toward East and Southeast, except for the hilly terrain in the west. The general elevation of the area varies from less than 10 to 1408 m amsl (Tulukkaparai hill range)

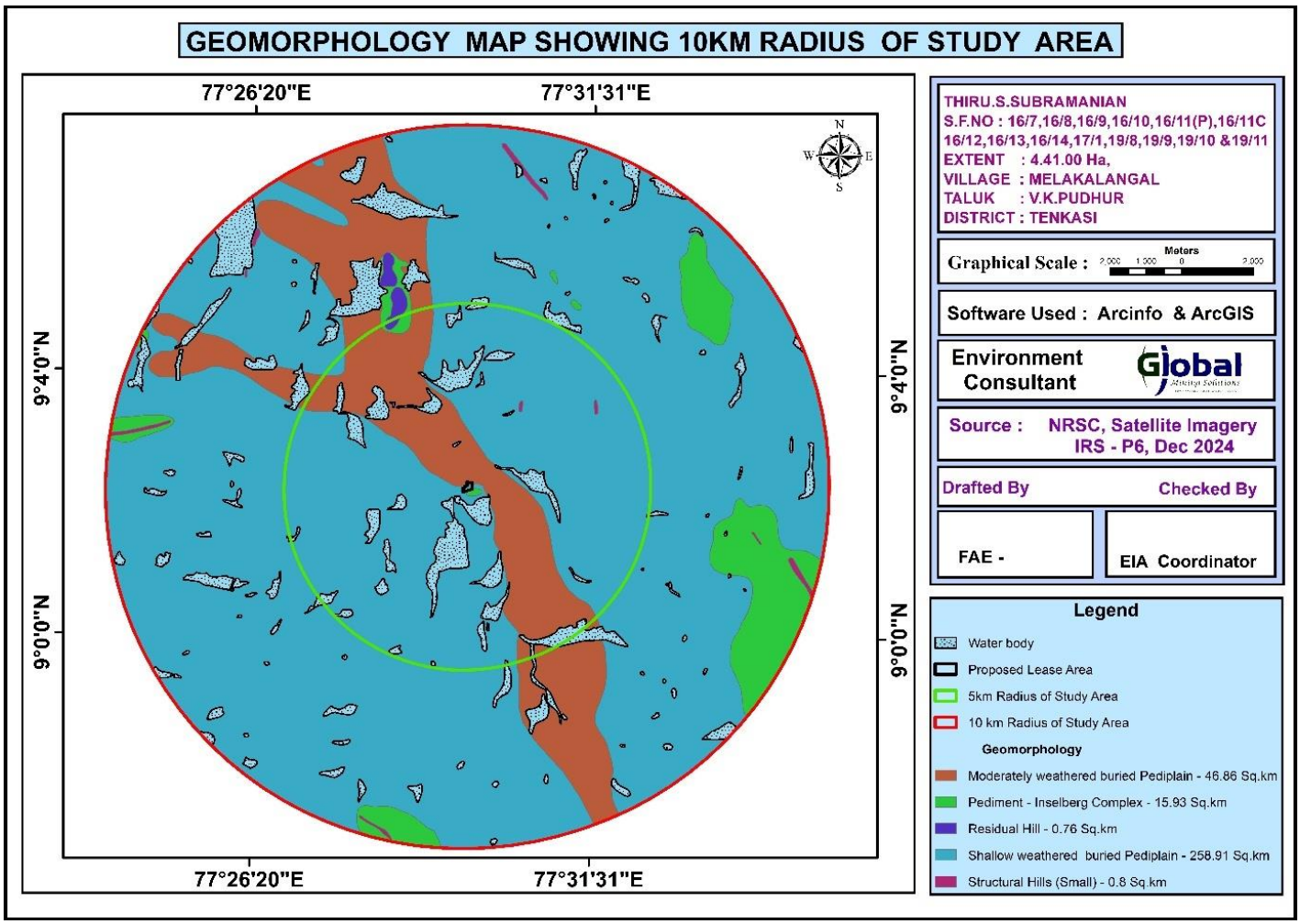


Figure 3-11 Geomorphology – 10 km radius around the project site

3.6.5 Geology

The geology map of the study area reveals that the area is predominately covered with Calc granulite and Limestone and Charnockite, which falls under Charnockite group and the remaining area is covered with Fluvial (Silt/Clay/kankar/Sand), Quartzite (Khondalite group) and Hornblende biotite gnesis (Migmatite Group). No exploration was carried out. Massive Rough stone formation visible from the existing pits in the nearby quarry operations and dry open wells.

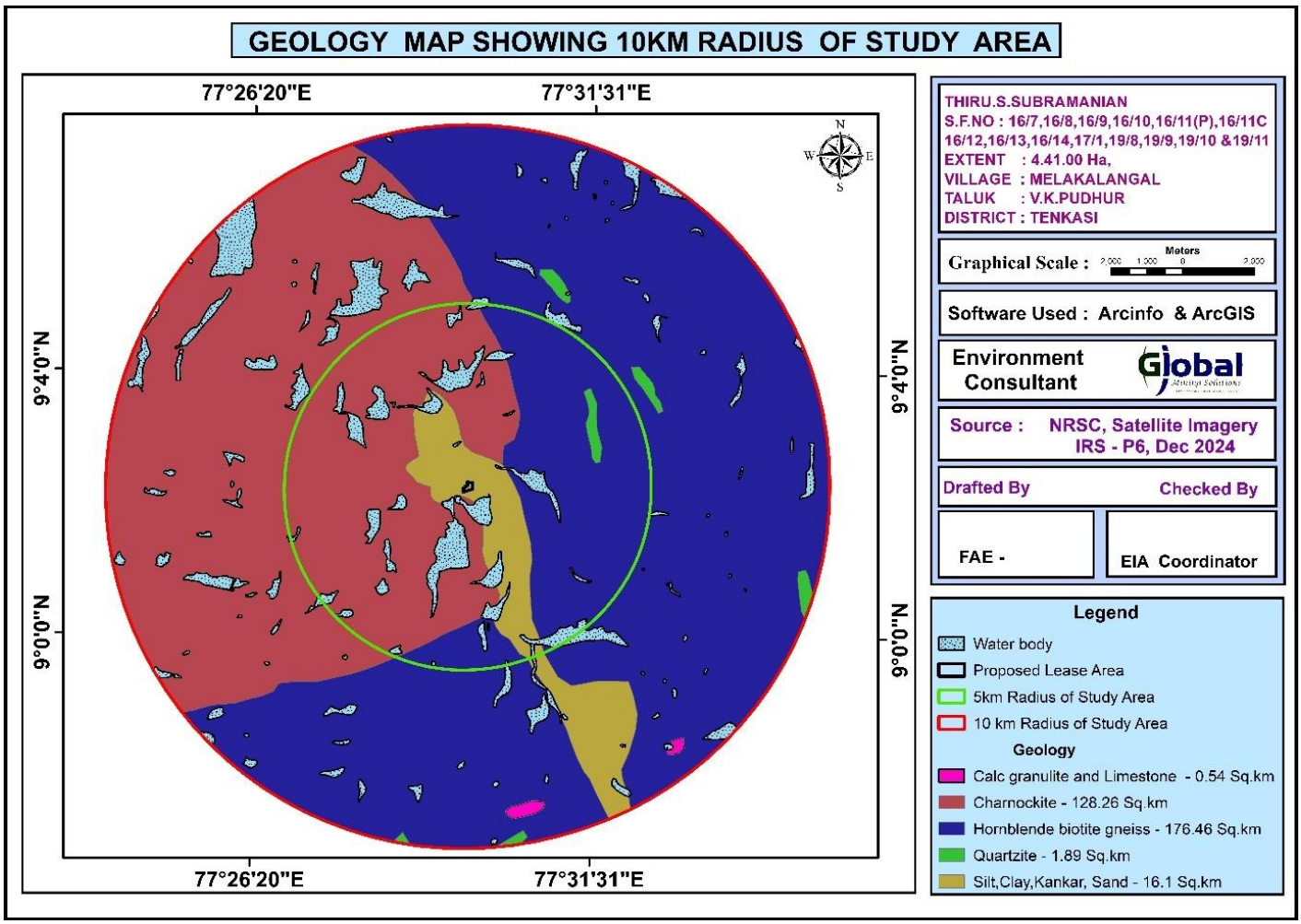


Figure 3-12 Geology – 10 km radius around the project site

3.6.6 Hydrogeology – Tenkasi

The district is underlain by both porous and fissured formations. The important aquifer systems in the district are constituted by i) Weathered and fractured hard rock formations of Archaean age. ii) Porous sedimentary formations ranging in age from Tertiary and Recent. The porous formations are found as small patch in the southeastern part of the district and include sandstones, Limestones, Laterite and Clays from Tertiary to Quaternary. Isolated occurrence of calcareous sandstone and fossiliferous limestone are seen in coastal area on the southeastern side. The fossiliferous limestone is found south west of Kudankulam covering an area of 3 sq.km. Laterites are exposed as patches along Radhapuram-Edakkadu, Vijayanarayanam-Kumarapuram, Ittamoli, Nanguneri and Uramozi area.

Beach sand occurs as a patch along the coast with a width varying from 50-250m in Idindakarai-Ovari Belt. The river alluvium is found along the river courses and the thickness of alluvium is restricted to 5-6m. The exploration in sedimentary tract has revealed that the depth to basement occurs at a depth of 120m bgl and granular zones are encountered between the depths of 20 to 92 m bgl. The yield of bore wells varies from 1-4.5 lps. The aquifer at the shallow depth is under unconfined condition and aquifer at depth is under semi-confined to confined condition. The

shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The dug well can sustain a pumping of 4 to 6 hours while the tube wells can sustain a pumping of 6-8 hours.

The water-bearing properties of crystalline formations, which lack primary porosity, depend on the extent of development of secondary intergranular porosity. These aquifers are highly heterogeneous in nature due to variation in lithology, texture and structural features even within short distances. Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fissured and fractured zones at deeper levels. The thickness of weathered zone in the district is in the ranges up to 30m bgl. The yield of large diameter wells in the district, tapping the weathered mantle of crystalline rocks ranges from 50 to 250 lpm and are able to sustain pumping for 3 to 5 hours per day. The Specific capacity of large diameter wells tested in crystalline rocks ranges from 25 to 300 lpm / m. of drawdown. The yield characteristics of wells vary considerably depending on the topographic set-up, lithology and nature of weathering. The groundwater exploration in the district down to a depth of 200m bgl has revealed that in the western part of the district potential fractures are encountered beyond 100m bgl while in the rest of the area, potential fractures are restricted to 100m bgl. The yield of the wells varies from 1 to 3.6 lps. In general, the wells drilled by various State agencies mainly for domestic purposes have yield in the range of 63 to 270 lpm. The depth to water level in the district varied between 1.19 to 13.35 m bgl during premonsoon depth to water level (May 2006) and varied between 0.18 to 7.97 m bgl during post monsoon depth to water level (Jan 2007). The seasonal fluctuation shows a fall in water level, which ranges from –0.12 to –2.14 m bgl, and rise in water level, which ranges from 0.33 to 11.24 m bgl. The piezometric head varied between 1.72 to 13.65 m bgl (May 2006) during pre-monsoon and 0.47 to 13.25 m bgl during post monsoon.

Source: District Groundwater Brochure Tirunelveli District, Tamil Nadu

Aquifer Parameters:

To find out the aquifer thickness and parameters, more than 330 investigations bore wells have been drilled in the district. The aquifer parameters in porous formation, weathered rock, fractured rock, alluvium, bazada and hard rock formations are given below

Formation	**Yield of wells (lps)**	**Transmissivity (m^2/day)**	**Hydraulic Conductivity (m/day)**	**Specific yield (%)**	**Storativity**
Porous formation	1.0-4.5	50-250	20-65	3-6	$1.98x10^{-4}$
Weathered rock	<1-4.0	25-150	<1-15	1.5	-
Fractured rock	1.0-3.6	25-250	<1-25	-	$1.87x10^{-5}$ to $4.8x10^{-3}$
Alluvium	2.2-34	8-854	0.1-44	-	-
Bazada	3.8-17	8-225	1-16	-	-

Hard rock	0.15-6	3-212	0.1-27	-	-

Source: District Groundwater Brochure Tirunelveli District, Tamil Nadu & NWM report on GW resources, TVL.

Hydrogeology – Study area:

As per SEAC-TN recommendation hydrogeological studies conducted for the mine and its buffer zone (1 km radius) to find out present status of ground water development, availability of ground water, and its quality and rain water harvesting program.

Department of Geology, Anna University. Department of Geology, Anna University is carried out the hydrogeological assessment to determine the present status of ground water development. Department of Geology, Anna University conducted the site assessment studies by collecting hydrogeological data of key wells from nearby villages by visiting them in the field, monitoring its hydrological data, estimating the long-term ground water recharge, present ground water withdrawal and status of ground water development.

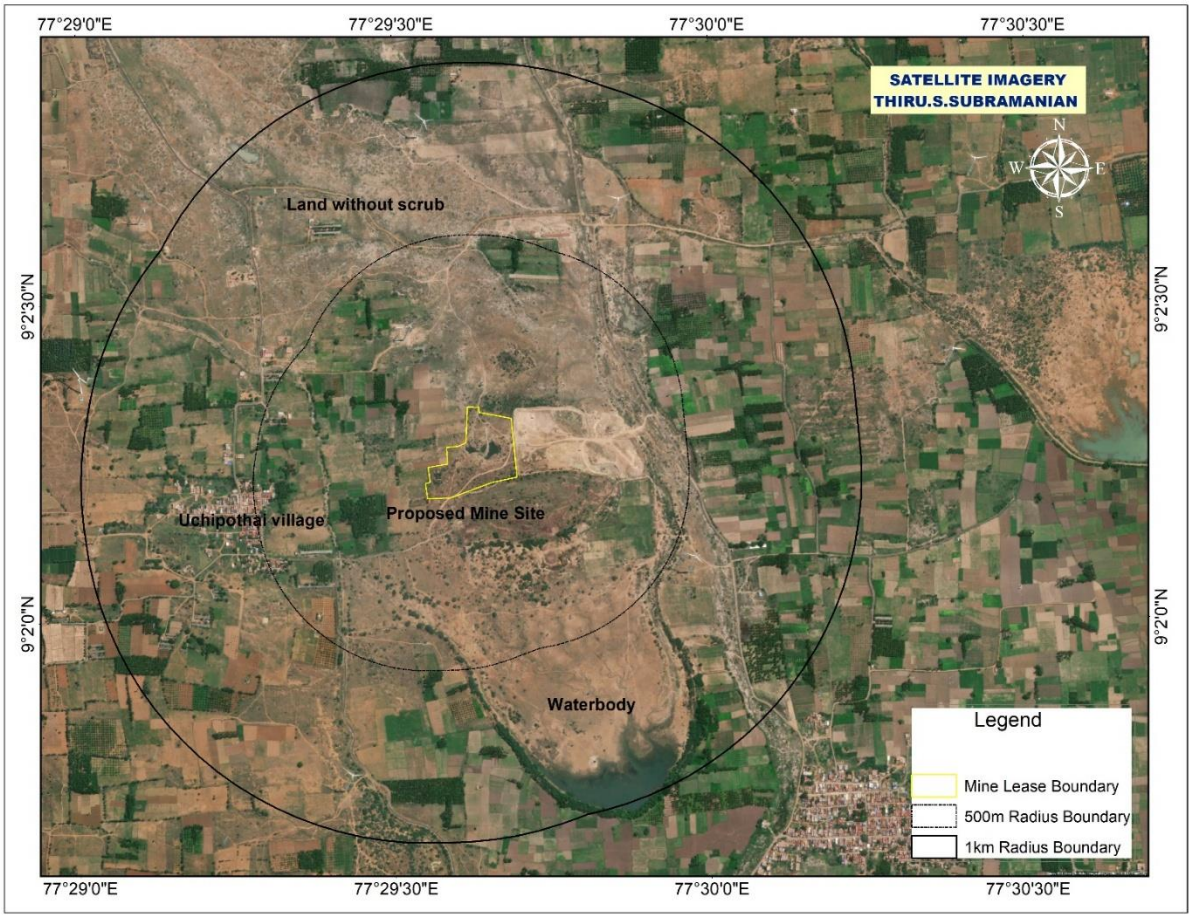


Figure 3-13 Google Image of Location Map

Land Use Pattern – 1km Radial Buffer Area:

The existing land use pattern and land cover distribution of the whole acquired block, have been studied from the satellite imagery and subsequent ground checking during the field surveys.

It mainly comprises of agricultural land with bi-annual crops of Kharif (Kharif: Jowar, Bajra, Cotton, etc. Season: July to October) and Rabi (Rabi: Wheat, Rai etc. Season: December to March). The shortage of rainfall, availability of ground water at deeper level and other climatic condition do not support good agricultural productivity inspite of having enough land.

The total area of LULC in the study area is calculated as 4.05 sq. km and spatial distribution of various LULC categories within buffer area are discussed below. The details are given below.

Table 3-5 Major Land Use Units in the Study area

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	0.09	2.22	Residential	0.09	2.22
				Commercial/Industrial		
2	Agriculture	1.51	37.28	Agriculture land	1.51	37.28
				Current Fallow land	-	
				Plantation		
3	Water bodies	0.61	15.06	Reservoir/Lake /Pond	0.47	11.60
				River/streams	0.14	3.46
4	Waste Land	1.59	39.26	Open without scrub	1.25	30.86
				Open with scrub	0.34	8.40
5	Others	0.09	2.22	Mining and Crusher	0.09	2.22
		0.16	3.95	Forest/Porampoke land	0.16	3.95
Total		**4.05**	**100**		**4.05**	**100**

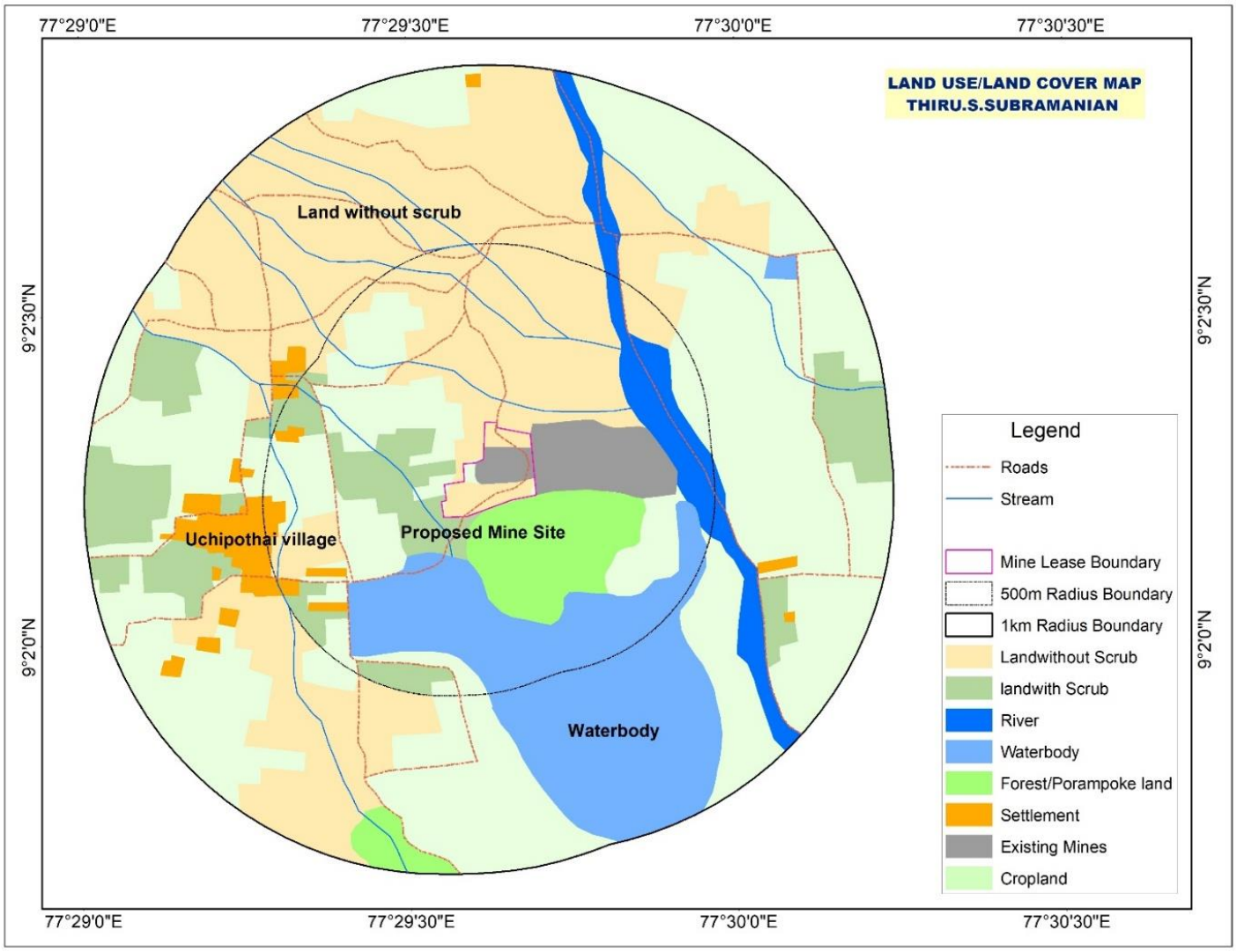


Figure 3-14 Land use map - 1km Radius

Local transport & Physiography

Tenkasi district generally experiences hot and humid climatic conditions. The district receives the rain under the influence of both northeast and southwest monsoons. Most of the precipitation occurs in the form of cyclonic storms caused due to the depressions in the Bay of Bengal, chiefly during the northeast monsoon period. The southwest monsoon rainfall is highly erratic and summer rains are negligible. The normal annual rainfall over the district varies from 800 mm to 900mm.

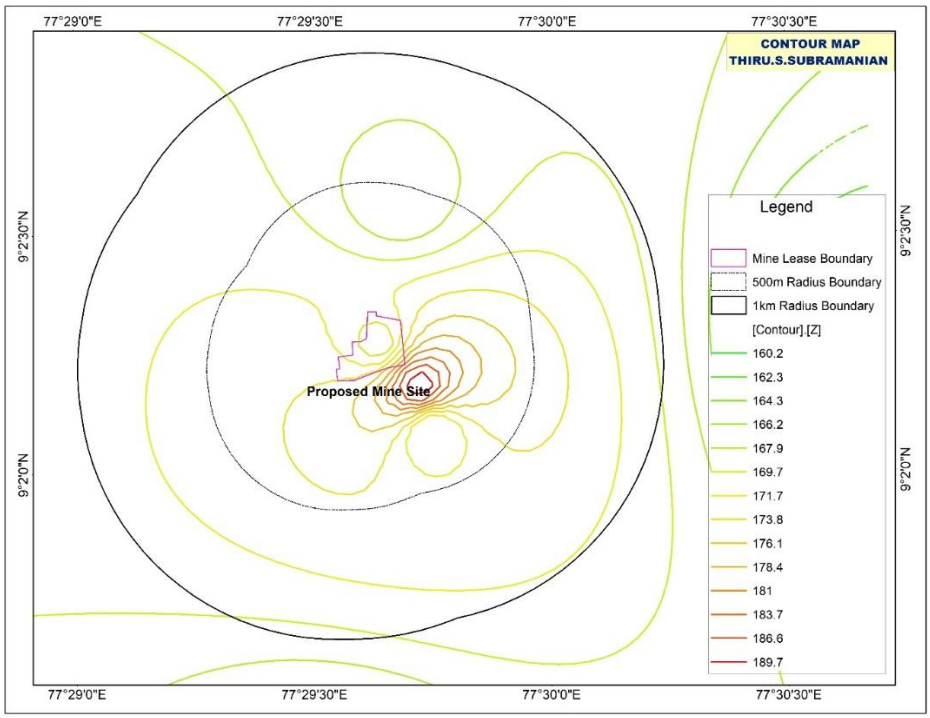


Figure 3-15Contour Map – 1km radius

Drainage pattern

The study area has almost flat to gently undulating topography with general slope to the south west. The topography of the buffer zone ranges between 161 to 190 metres above MSL.

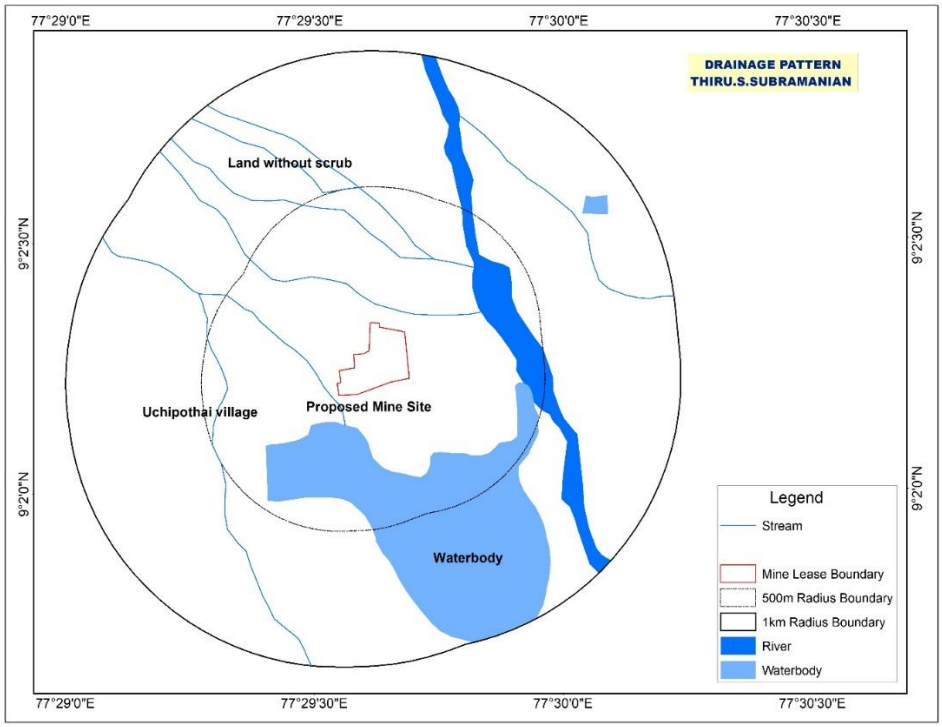


Figure 3-16 Water Shed map – 1km radius

Water Sample Collection at Open come Bore well

Water level measured at Open come Bore well

Figure 3-17 Field Photographs – Groundwater Sampling Sites

Groundwater occurs under water table conditions in weathered fractured, jointed and faulted portions of crystalline rocks. The pore spaces developed in the weathered rock act as shallow granular aquifer and potential water bearing zones. The 10 observation wells were identified within a 1-kilometer radius of the proposed mine lease area. The water level was measured in these observation wells during February 2024 and July 2024.

A well inventory survey was carried out during February 2024 and July 2024 to select the representative agriculture wells (10 Open Wells). These wells were categories six groups based on the regions. Group-1 (OW-5) open well were located in northern portion of the study area. Group-2 (OW-3, OW-4 and OW-6) open wells were located in north-eastern portion of the study area. Group-3 (OW-1 and OW-2) open wells were located in eastern part of the study area. Group-4 (OW-10) open well were located in southern part of the study area and nearby Panchayat tank 1. Group-5 (OW-8 and OW-9) open wells were located in south-western part of the study area. Group-6 (OW-7) open well were located in western part of the study area.

The depth of wells in this region ranging from 15m to 20m. Generally, the water level variation in the crystalline formation from 6.8m to 18.1m and average is 14.59m in February 2024 (Non-Monsoon) and 5.6m to 16.7m and average is 13.11m in July 2024 (Monsoon) below ground level.

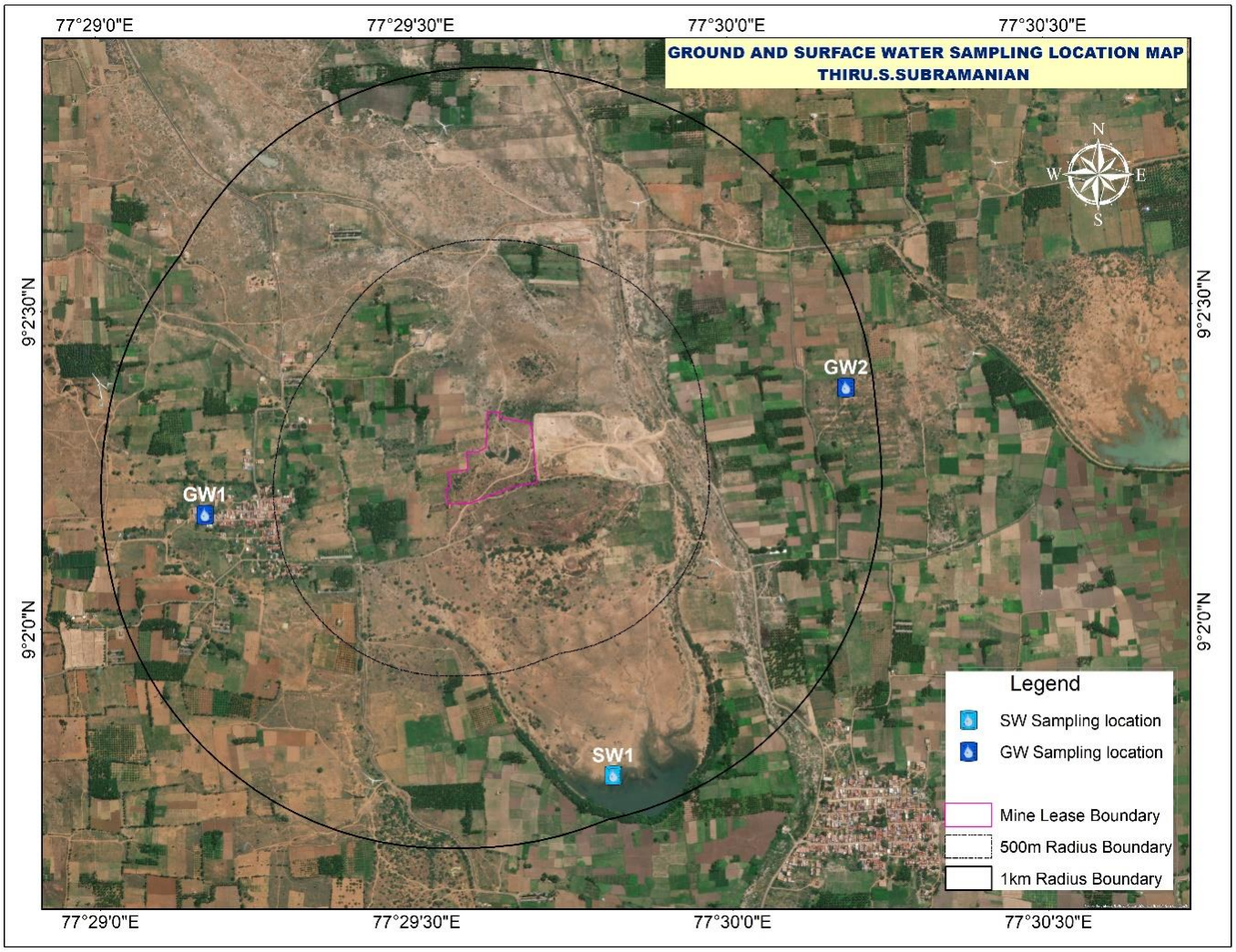


Figure 3-18 Observation Well Locations

Water Table:

Monsoon water table contour map shows that water table depth various from 58m (BGL) to 62m (BGL). Proposed mine depth is 57 m AGL, therefore water table is not-affect the mining process.

Non-Monsoon water table contour map shows that water table depth various from 60m (BGL) to 63m (BGL). Proposed mine ultimate depth is 57 m AGL, therefore water table is not-affect the mining process.

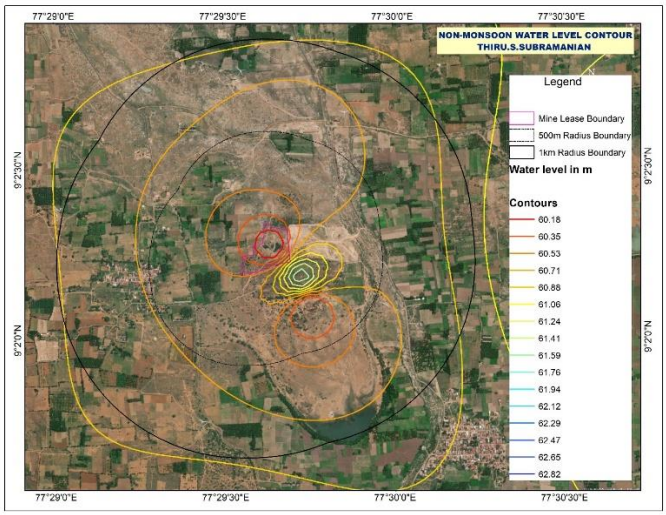


Figure 3-19 Non - Monsoon Water Table Contour Map

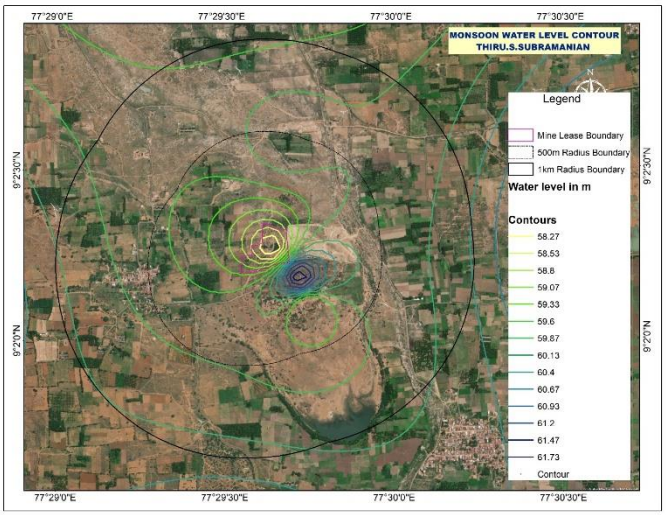


Figure 3-20 Monsoon Water Table Contour Map

Table 3-6 Primary Water Level Data

Samples	Latitude	Longitude	April - 2025	Fluctuation in 'm'
GW1	9°12'11.75"N	77°29'9.83"E	5.4	1.3
GW2	9°2'23.05"N	77°30'11.95"E	5.81	1.0
SW1	9°1'46.73"N	77°29'48.71"E	14.0	1.3

Geophysical Investigation:

A variety of methods are available to assist in the assessment of geological subsurface conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. The VES probes the resistivity layering below the site of measurement.

The panchayat tank runoff estimation is given in below Table

Table 3-7 Tank-wise Net Runoff and Capacity in M. Cu.m

1 Km Buffer area Rainfall Estimation through Thiessen Polygon Method					
Tank No.	Catchment area in sq.m	Annual Average Rainfall in 'm'	Runoff Co-Efficient	Net Runoff in M.Cu.m	Tank Capacity in M.Cu.m
1	2037100	0.822	35%	0.586	0.56
2	1031200	0.822	35 %	0.296	0.52
Total Net Runoff in M.Cu.m				0.882	

These tanks are connected through streams. Throughout the year surface water runoff is 0.882 M.Cu.m. The tanks water is loose through evaporation and evapotranspiration other hand infiltration is 30%. so, very meagre amount of storage in the tanks. This is ephemeral in nature, which may available water only after rainfall events. The ayacut report reveals that the non-system.

Asper the ayacut report panchayat tanks 1 and 2 water is available in monsoon seasons only.

RECOMMENDATIONS:

- It is recommended for the regular monitoring of Ground Water, Ground water depth and Surface Water Monitoring.
- Rain water flow path and stream path shall be maintained before and after monsoon season and the condition of the same should be reported to the concern Tahsildar office.
- Construction of Retaining wall in south and south eastern side of the project.
- Designing of suitable land use pattern within the mine lease area or catchment areas is a step forward activity towards the mitigation and preventive care.
- Effective local runoff arrangement of rainwater for groundwater infiltration into the soil and in hard-rock areas.
- There will be 4725 KLA of waste water generation during rainy day with average rainfall of 900 mm / year. This waste water shall be stored in bottom of the lease area for silt sedimentation. For which 2500 Cu.m (2 Sumps – 5000 Cu.m) capacity settling tank shall be constructed. This inward and outward should be properly draine, specifically settling tank outward should be made with concrete drainage with suitable check wears.
- Total 5.5 KLD water will be used for this project i.e., 1212 KLA. So minimum 24 % of this water usage shall be compensated by suitable rainwater harvesting system.
- Three tire Plantation shall be planted on the north and northeastern side of the project.

- De-silting shall be carried out before and immediately after the monsoon season and the settling tank and drains will be cleaned weekly, especially during monsoons.
- Tippers & HEMM shall be washed in a designated area and the washed water will be routed through drains to a settling tank, which has an oil & grease trap, only clear water will be reused for greenbelt development.
- By adopting all the mitigation measures proposed, there will not be any adverse impact on environment and socio-economic condition.

3.6.7 Natural Resources

Forest Resources

The total area of the forest of the district is 1,22,055 ha of which 81700 ha is set apart for Tiger reserves of Mundanthurai and Kalakadu. The entire forest of the district stretches along the Western ghats. Various types of forests from luxuriant tropical wet evergreen forests to southern thorn scrub forests occur in the district. Owing to its diverse geographical factors, the forests in the district are technically classified as southern hill top tropical evergreen forests, west coast tropical evergreen forests, southern moist mixed deciduous forests, ochlandra reed forests, carnatic umbrella thorn forests, southern Euphorbia scrub and southern thorn scrub.

Source: http://tnenvis.nic.in/files/TIRUNELVELI%20.pdf

Agricultural Resources

Tirunelveli has fertile soils only in scattered regions. Less fertile red soils are found distributed over most of the region. The network of the irrigation system makes full use of the water resources, so the natural deficiency has been overcome to a greater extent. The cropping pattern of the district is essentially of the type characterising dry regions. It normally varies from taluk to taluk. Wet cultivation is essentially paddy cultivation and the major share of the gross cropped area is under one crop. In dry regions, diversified cropping patterns exist and no single crop claims a large share of the gross cropped area. Dry cultivation which characterises these regions is also basically millet and cash crop cultivation. Even in dry regions wherever water is available, it is the paddy crop that is sown by the farmers. Paddy occupies the largest area of cultivation, followed by cotton. Paddy is cultivated mainly in Tirunelveli, Palayamkottai, Tenkasi, Shencottai, Ambasamudram and Nanguneri taluks. Other crops grown in the district are cumbu, ragi, pulses, groundnut, gingelly, coconut, chillies and indigo. Portions of Sankarankoil taluk have the rich, fertile black soil which are highly suitable for cotton cultivation. Factors such as type of soil, climatic conditions, irrigation facilities, etc., determine the cropping pattern in a region. Most of the rain fed areas are cultivated in both the seasons. Most of the crops are on the ground for three or four months except chillies and cotton which take more than five months.

Source: http://tnenvis.nic.in/files/TIRUNELVELI%20.pdf

Mineral Resources

The district does not contain any precious mineral. However, it has a few varieties of major and minor minerals.

Source: District Survey report, Tirunelveli

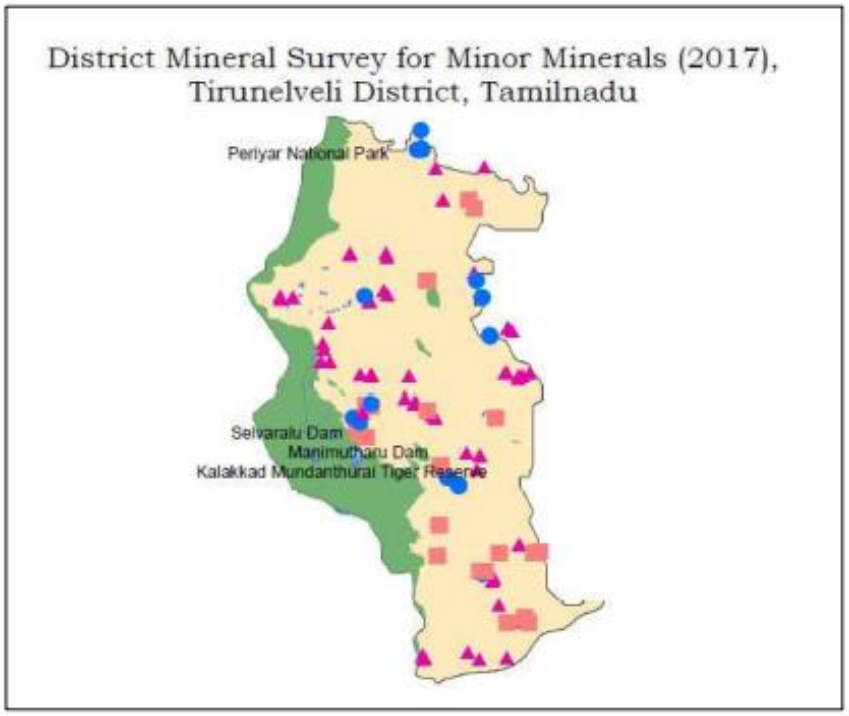
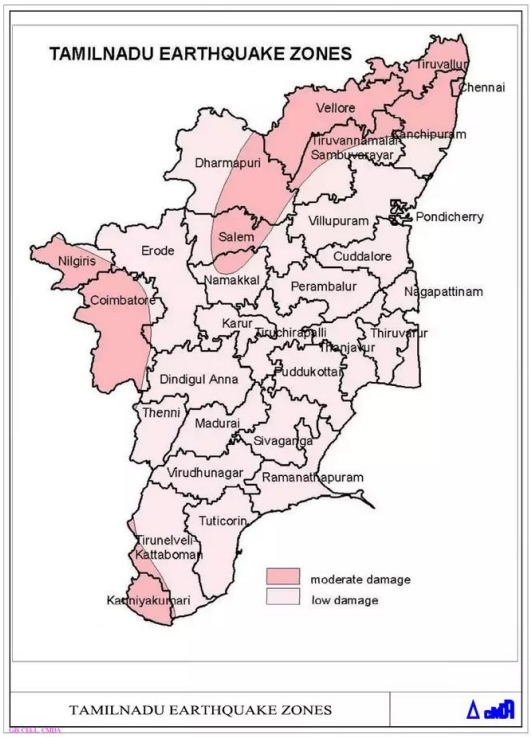


Figure 3-21 Tamilnadu Mineral Map

3.6.8 Seismicity

Tirunelveli falls under seismic zone III, which is categorised as moderate damage zone. Tirunelveli Local Planning Area falls under Seismic Zone – III, II. The whole of Tirunelveli Local Planning Area falls in this zone which is a moderate to low seismic risk. The seismic zone of Tamilnadu is shown below.

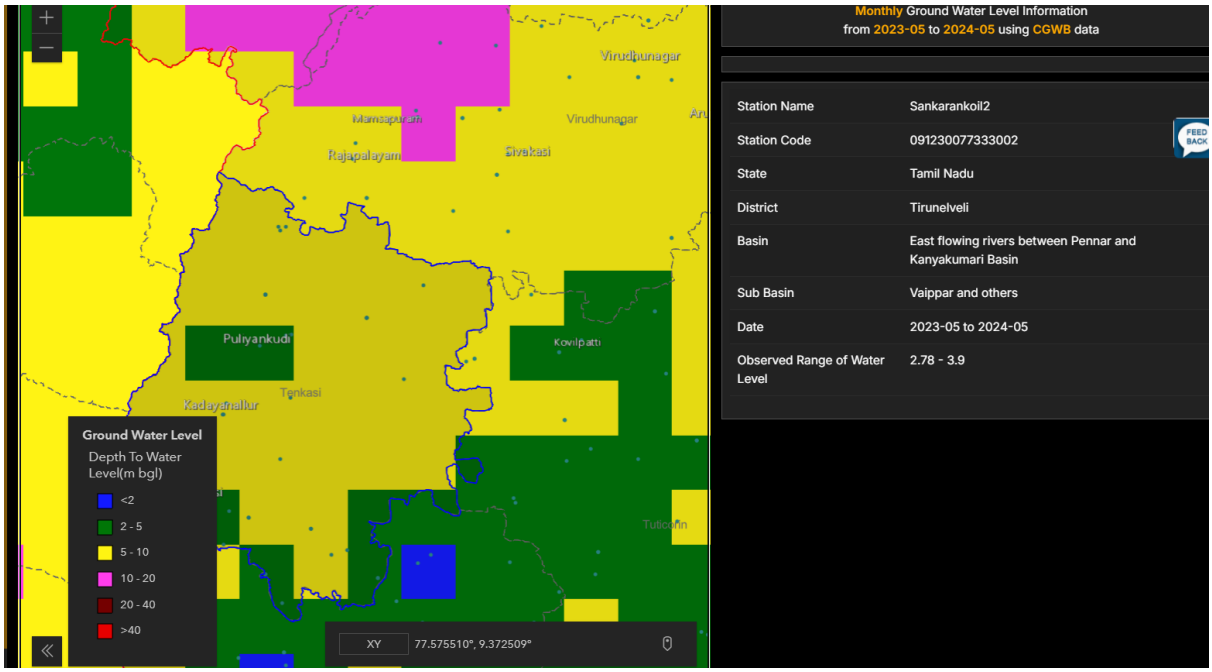


3.7 Water Environment

3.7.1 Ground water

Depth of GW Level and GW prospects

The ground water table in V.K. Pudhur area is in between from 2.78 m BGL to 3.9 m BGL. **(Source: CGWB)**



The project falls under Kadayanallur Block, which is categorized as Semi-Critical (> 70% and ≤90%) as per Annexure to G. O (Ms) No. 161, Public Works (R2) Department, dated: 23.10.2019, where the eligibility for the extraction of groundwater, extraction will be permitted only in Safe/Semi critical and non-metro area. **(Source: NWM)**

Sl.No	Assessment Unit (Firka)	Net Annual Ground Water Availability	Existing Gross Ground Water Draft for Irrigation	Existing Gross Ground Water Draft for domestic and industrial water supply	Existing Gross Ground Water Draft for All uses (4+5)	Stage of Ground Water Development {(6/3)*100} %	Category of the Firka
8	GANGAIKONDAN	1,038.93	466.40	26.40	492.80	47	SAFE
57	VEERAKERALAMPUDUR	1,214.88	1,053.15	4.62	1,057.77	87	SEMI CRITICAL

The figure showing GW prospects for study area of 5 km is shown below **(Source: Bhuvan)**

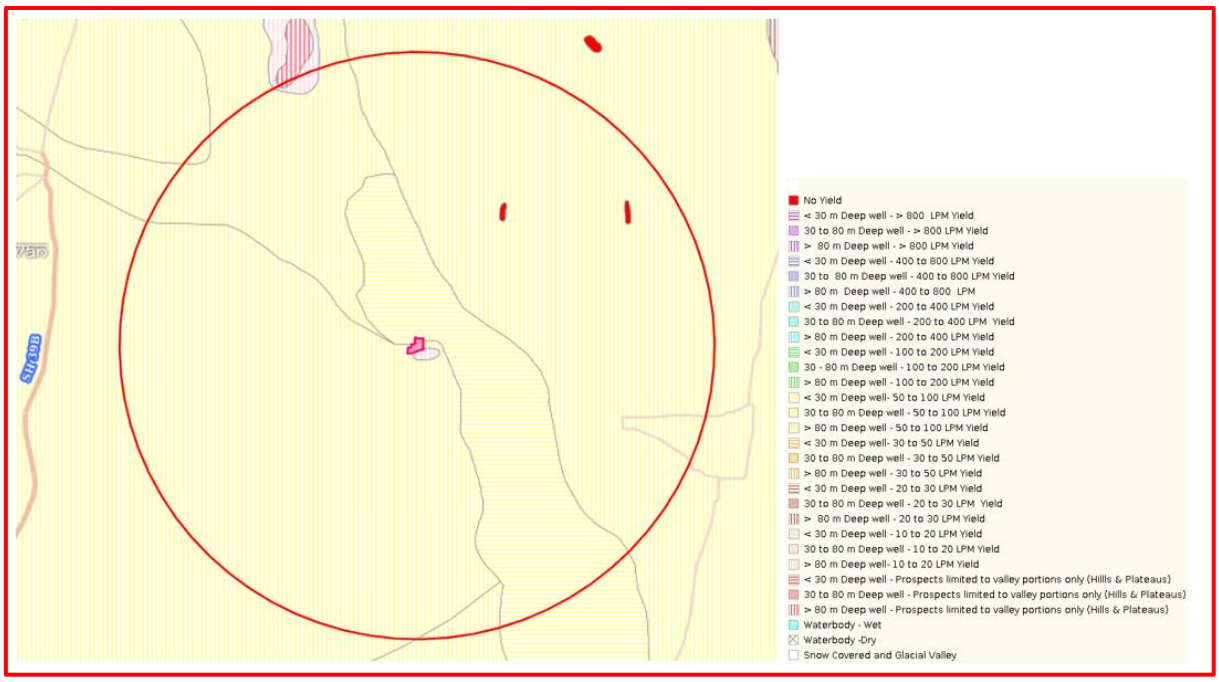


Figure 3-22 Ground water prospects – 5km radius around the project site

The average ground water level in the project is reported as 78 m BGL.

Ground water recharge estimation:

In view of the fact that the detailed data for recharge calculation is extremely difficult to come by some, very simple parameters have been enunciated by the CGWB in their '***Report of the Ground Water Resource Estimation Committee, Ground Water Resource Estimation Methodology - 1997, Central Ground Water Board'***. On an average infiltration can be taken as 44 to 60 cm per year over a total water spread based on the average area of water spread.

Ground water recharge: Total Mine Lease area x 0.6m x 60% x Mining period

= 44,100Sq. m. x 0.6m x 0.6 x 5 years

= 79,380Cu.m for 5 years

Rainfall Infiltration:

As per CGWB, the rainfall infiltration is computed by:

Rainfall Recharge = (Rainfall –minimum threshold) * RFIF *Area

= (0.0089 – 0.001) x 0.7 x 44,100

= 243.8 Cu.m

Ground Water Quality Monitoring

Ground water quality monitoring is done in the following locations and analysis will be done for physical, chemical & Biological parameters.

Table 3-8 Ground Water Quality Analysis

<table>
<tr><td colspan="2">Environmental Parameters: Ground water Quality Analysis</td></tr>
<tr><td>Monitoring Period</td><td>December 2024 to February 2025</td></tr>
<tr><td>Design Criteria</td><td>Based on the Environmental settings in the study area</td></tr>
<tr><td>Monitoring Locations</td><td>
<table>
<tr><th>Location</th><th>Distance from the project site</th></tr>
<tr><td>Project Site</td><td>-</td></tr>
<tr><td>Poovilangapuram</td><td>3.60 km, NE</td></tr>
<tr><td>Echchanda</td><td>2.52 km, NE</td></tr>
<tr><td>Karikandarkulam</td><td>2.32 km, SW</td></tr>
<tr><td>Arunachalapuram</td><td>3.46 km, SW</td></tr>
<tr><td>Melakalangal</td><td>1.65 km, SE</td></tr>
<tr><td>Vellalankulam</td><td>2.73 km, NW</td></tr>
</table>
</td></tr>
<tr><td>Methodology</td><td>Water Samples were collected in 5 Litre fresh cans as per IS 3025 Part I and transported to the laboratory in Iceboxes</td></tr>
<tr><td>Frequency of Monitoring</td><td>Once in a season</td></tr>
</table>

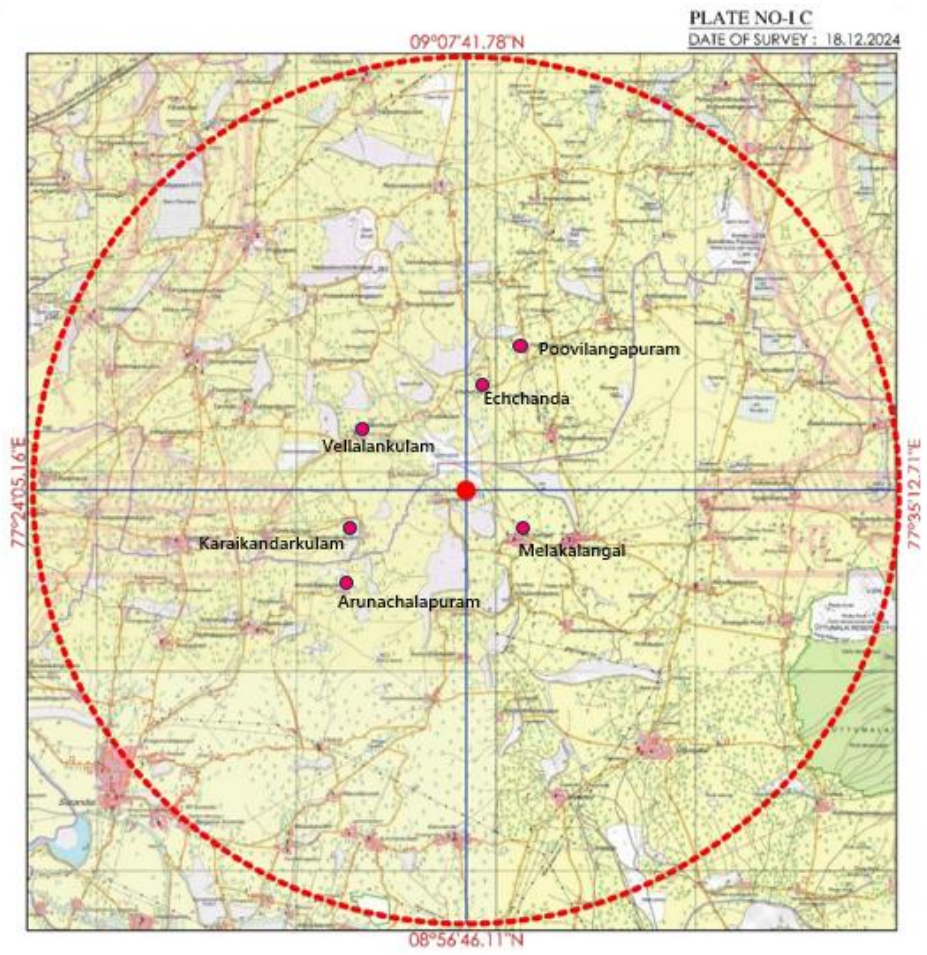


Figure 3-23 Ground Water Sampling Locations

Figure 3-24 Ground water sampling photos

Table 3-9 Ground water sampling results

S. No	Parameters	GW 1	GW 2	GW 3	GW 4	GW 5	GW 6	GW 7
1	Odour	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE
2	Turbidity	<1	<1	<1	<1	<1	<1	<1
3	pH at 25 ˚C	7.53	7.73	8.10	8.00	7.81	7.75	7.31
4	Electrical Conductivity	228.7	1376	1267	608.1	1248	960.7	1017
5	Total Dissolved Solids	140	840	765	366	750	580	620
6	Total hardness as $CaCO_3$	62.2	442	277	201	329	301	274
7	Calcium as Ca	17.7	98.0	43.4	48.2	75.6	72.3	74.8
8	Magnesium as Mg	4.32	47.2	40.5	19.3	33.7	28.9	20.9
9	Calcium as $CaCO_3$	44.2	245	108	121	189	181	187
10	Magnesium as $CaCO_3$	18.0	197	169	80.3	140	121	87.0
11	Total alkalinity as $CaCO_3$	80.8	190	279	150	262	175.0	246
12	Chloride as Cl^-	45.3	268	231	120	215	179.0	250
13	Free Residual chlorine as Cl^-	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)

14	Sulphates as SO_4^{2-}	12.2	197	218	65.4	155	142	110.9
15	Iron as Fe	0.13	0.12	0.06	0.08	0.13	0.08	0.05
16	Nitrate as NO_3	1.28	5.47	2.68	3.24	2.54	3.65	1.32
17	Fluoride as F	0.27	0.62	0.56	0.45	0.36	0.54	0.36
18	Manganese as Mn	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)

Interpretation of results

Physical parameters of water

The basic physical parameters of the water include

Odour: The odour of the water is found to be agreeable in all the 6 monitoring locations.

pH:

Value observed in the project site: 7.53

Acceptable and permissible limits: 6.5-8.5. The pH value is the measure of acid – base equilibrium. The value of pH in the project site clearly indicates that water is neutral in nature.

Turbidity:

Value observed in the project site: <1 NTU.

Acceptable and permissible limits:1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplanktons and other sediments. The value in the project site indicates the water is not turbid and no any physical treatment is required to treat the turbidity of the water.

Total Dissolved Solids:

Value observed in project site: 140 mg/L.

Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively. The TDS is the presence of the inorganic salts and small amounts of organic matter present in the water. This is mainly due to the result of surface runoff as the cations and anions in the top soil is carried away by the water. As per the Guidelines of WHO, if the value of TDS is greater than 1200 mg/L, it is designated as unacceptable. Since the value of the TDS is less than 1200 mg/L, it will not cause any adverse impact.

Chemical parameters of water:

The chemical parameters of the drinking water include

Calcium:

Value observed in the project site: 17.7 mg/L.

Acceptable and permissible limits:75mg/L and 200 mg/L respectively.

Calcium is the essential macronutrient. The value of the calcium is within the prescribed permissible standards. The higher level of calcium may cause hardening in domestic equipment and will also reduce the detergent efficiency. Higher levels of calcium will lead to constipation, gas, and bloating. Apart from that, extra calcium may also increase the risk of kidney stones. If the calcium deposit in blood is high, it may lead to hypercalcemia.

Magnesium:

Value observed in the project site: 4.32 mg/L.

Acceptable and permissible limits:30 mg/L and 100 mg/L respectively.

The value of Magnesium in the project site is less than the permissible limit. The increase in the level of magnesium will cause diarrhoea and vomiting in children.

Chloride

Value observed in the project site: 45.3 mg/L.

Acceptable and permissible limits: 250 mg/L and 1000 mg/L respectively.

The chloride level in the project site is less than the permissible limit. Hence it will not have any major impact.

Hardness:

Value observed in project site: 62.2 mg/L.

Acceptable and permissible limits:200 mg/L and 600 mg/L respectively.

The value of Hardness in the project site is within than permissible limit. The increase in the level of hardness may cause corrosion and scaling problems, increased soap consumption and it also contributes to the salty taste of water.

Secondary Data:

Following are the Analytical Results of samples collected from National Groundwater Monitoring Wells (May 2022)

S.No	District	Location	Latitude	Longitude	PH	EC *	TH**	Ca	Mg	Na	K	CO3	HCO3	Cl	SO4	NO3	F	U
							<.....mg/L.....>											ppb
891	Tirunelveli	Idaikkal	8.5333	77.4653	7.10	1016	240	48	29	67	19	0	214	142	62	12	0.12	0.31
892	Tirunelveli	Iyan Singampatty OW	8.6709	77.4458	7.10	411	80	24	5	18	5	0	73	28	18	1	0.28	0.00
893	Tirunelveli	Kadayam	8.8333	77.4083	7.30	661	240	52	27	12	18	0	128	57	99	31	0.20	0.00
894	Tirunelveli	Kadayanallur	9.0667	77.3458	7.20	3060	530	144	41	255	47	0	268	624	102	55	0.45	3.82
895	Tirunelveli	Kadayanallur1	9.0833	77.3500	7.30	3120	550	204	10	288	47	0	390	631	103	54	1.44	3.59

Source: State Report on Groundwater Quality in Tamilnadu & U. T. of Puducherry by Government of India, Ministry of Jal Shakti Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Board South Eastern Coastal Region, Chennai

**Note: Secondary data is available for the nearest area - Kadayanallur*

3.7.2 Surface Water

Surface water was collected from Karupinankulam Lake and Echchanda Lake.

Figure 3-25 Surface water sampling photos

The results are summarized below:

Parameters	Karupinankulam Lake	Echchanda Lake
Odour	AGREEABLE	AGREEABLE
Turbidity	136	76
pH at 25 °C	7.13	7.32
Electrical Conductivity	351.3	259.1
Total Dissolved Solids	214	160
Total hardness as $CaCO_3$	68.3	92.4
Calcium as Ca	14.4	25.7
Magnesium as Mg	7.73	6.74
Calcium as $CaCO_3$	36.1	64.3
Magnesium as $CaCO_3$	32.2	28.1
Total alkalinity as $CaCO_3$	96.8	60.6
Chloride as Cl^-	68.5	37.4
Free Residual chlorine as Cl^-	BDL (D.L - 0.2)	BDL (D.L - 0.2)
Sulphates as SO_4^{2-}	37.2	40.3
Iron as Fe	0.56	0.39
Nitrate as NO_3	1.32	1.25
Fluoride as F	0.34	0.29
Manganese as Mn	BDL (D.L - 0.05)	BDL (D.L - 0.05)
COD	33.0	36.8
BOD	7.5	8.2
DO	5.9	6.2
TSS	228	80

3.8 Climatology & Meteorology

Climate and meteorology of a place can play an important role in the implementation of any developmental project. Meteorology is also the key to understand local air quality as there is an essential relationship between meteorology and atmospheric dispersion involving wind in the broadest sense of the term.

The year may broadly be divided into four seasons:

Winter season: December to February

Pre-monsoon season: March to May

Monsoon season: June to September

Post-monsoon season: October to November

i) Climate

The district enjoys a Sub tropical climate. The period from May to June is generally hot and dry. The weather is pleasant during the period from December to January. The relative humidity is on an average between 79 and 84%.

ii) Temperature

The average daily temperature ranges from a maximum of 36.4 °C to a minimum of 23.8 °C

iii) Rainfall:

The maximum precipitation is contributed by the Northeast monsoon(821.4mm) followed by summer (155.3 mm), southwest monsoon (172.6 mm) and winter (61.1 mm).

3.8.1 Meteorological data collection

The meteorological data is collected based on daily observations for three-month period, is used in the current report.

Wind Speed:

Wind speed was in the range of 4 Km/hr to 12 Km/hr. The wind speed was almost close to each other during the whole study period. The wind speed varied from 4 Km/hr to 24 Km/hr. The site-specific meteorological data for the study period (December 2024 – February 2025) is presented below. The maximum and minimum values for all the parameters except wind speed and wind direction are presented below.

Wind Rose Diagram

The wind rose denotes a class of diagrams designed to display the distribution of wind direction at a given location over a period of time. Wind roses are also useful as they project a large quantity of data in a simple graphical plot. The wind speed & wind direction data are taken and wind rose is plotted for December 2024 – February 2025.

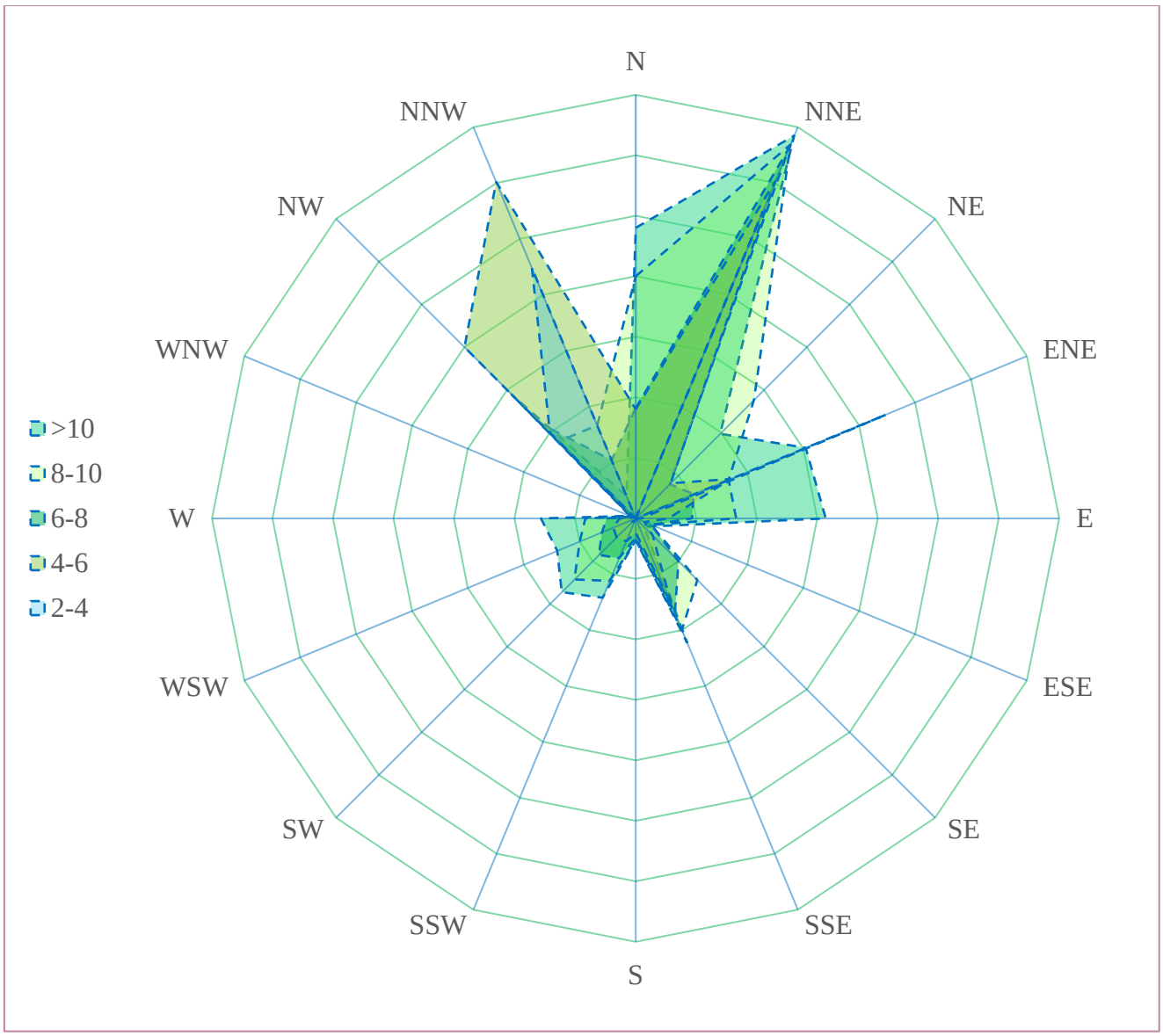


Figure 3-26 Wind Rose Diagram

3.8.2 Ambient Air Quality

Table 3-10 Environmental Parameters – Ambient Air

Environmental Parameters*: **Ambient Air***		
Monitoring Period	December 2024 – February 2025	
Design Criteria	The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (December 2024 – February 2025), etc, play a vital role in selection of air sampling stations. Based on these criteria, air sampling stations were selected in the area as shown below.	
Monitoring Locations	**Location**	**Distance from the project site**

	Project Site	-
	Poovilangapuram	3.60 km, NE
	Echchanda	2.52 km, NE
	Karikandarkulam	2.32 km, SW
	Arunachalapuram	3.46 km, SW
	Melakalangal	1.65 km, SE
	Vellalankulam	2.73 km, NW
Methodology	Respirable Particulate Matter (PM10) - Gravimetric (IS 5182: Part 23:2006) Particulate MatterPM2.5 - Gravimetric (Fine particulate matter) Sulphur Dioxide - Calorimetric (West & Gaeke Method) (IS 5182: Part 02: 2001) Nitrogen Dioxide - Calorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2006)	
Frequency of Monitoring	2 days in a week, 4 weeks in a month for 3 months in a season.	

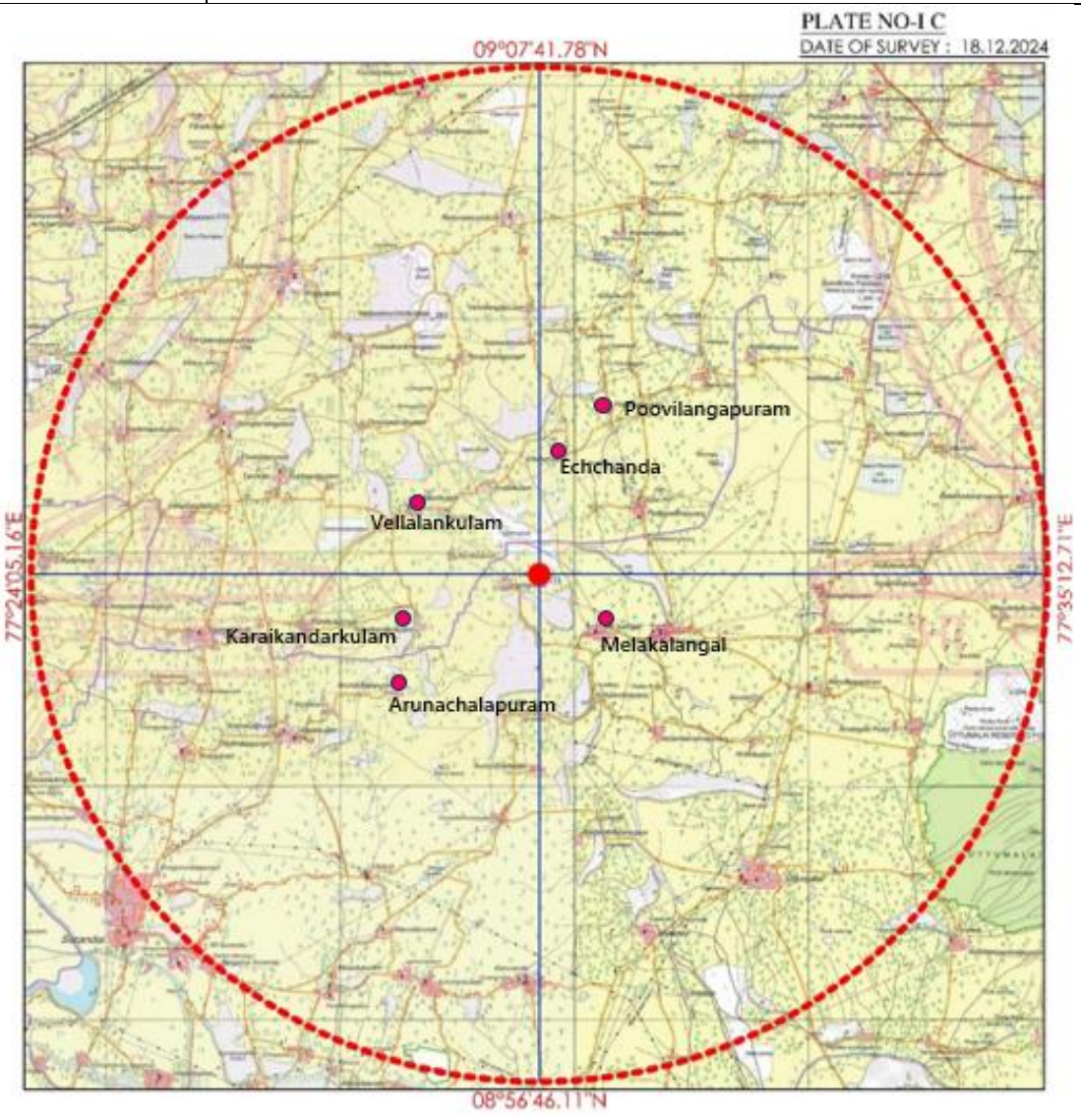


Figure 3-27 Ambient Air Quality Monitoring Stations

Monitoring Photos

Figure 3-28 AAQ Monitoring Photos

Ambient Air Quality: Results & Discussion

The test results of the ambient air quality monitored in project site and other locations were summarized below.

Table 3-11 Ambient Air Quality – Baseline Monitoring Values

Code	PM 10 (µg/m$^{3)}$				PM 2.5 (µg/m$^{3)}$				SO2 (µg/m$^{3)}$				NOx (µg/m$^{3)}$			
	Max	Min	Avg	98 percentile	Max	Min	Avg	98 percentile	Max	Min	Avg	98 percentile	Max	Min	Avg	98 percentile
AAQ 1	69.0	45.0	57.6	68.8	32.8	21.4	27.4	32.7	7.4	5.1	6.3	7.4	11.6	7.9	9.3	11.3
AAQ 2	58.2	39.6	48.7	57.7	27.9	18.5	22.8	27.5	7.0	4.7	5.9	7.0	10.5	7.3	8.6	10.3
AAQ 3	53.8	42.1	48.0	53.4	24.5	19.2	21.8	24.3	6.7	4.4	5.6	6.7	9.9	6.8	8.0	9.8
AAQ 4	48.5	38.5	43.2	48.1	22.4	17.8	19.9	22.2	7.1	4.8	6.0	7.1	11.1	7.3	9.0	11.0
AAQ 5	52.2	38.5	45.5	52.0	23.8	17.5	20.7	23.6	6.9	4.6	5.8	6.9	10.9	7.5	8.8	10.8
AAQ 6	56.3	42.5	49.4	56.0	26.0	19.6	22.9	26.0	5.1	3.7	4.3	5.1	10.2	8.1	9.2	10.2
AAQ7	59.2	46.3	52.4	58.3	28.4	22.2	25.2	28.0	7.7	5.9	7.1	7.7	12.6	9.6	10.9	12.4
NAAQ Standards - Residential Area	100 (µg/m^{3})				60(µg/m^{3})				80 (µg/m$^{3)}$				80 (µg/m$^{3)}$			

Ambient Air Quality: Results & Discussion

To assess the impact, AAQ were monitored in project site and five locations in the upwind, downwind & crosswind direction. The values of the AAQ in terms of PM 2.5, PM10 is maximum in the AAQ 1 than all other locations. The maximum of NOx and SOx is observed in Vellalankulam.

PM 2.5 and PM 10:

Table 3-12 Maximum and Minimum Values of PM 2.5 & PM 10

Description	PM 2.5	Location	PM 10	Location
Max	32.8	Within Mine Lease Area	60	Within Mine Lease Area
Min	17.5	Arunachalapuram	38.5	Arunachalapuram and Karikandarkulam
Standard PM 2.5 - 60			**Standard PM 10 - 100**	

The main sources of PM include incomplete combustion, automobile emissions, Dust and also due to the chemical reactions in the atmosphere. From the monitoring locations, it is inferred that the maximum value of both PM 10 &PM 2.5 is observed in mine lease area. The main contributing factor is that there is another existing quarry located near the project site within 500 m radius, where the vehicular traffic will be more. Approximately 306 trucks will be used for the transportation of mined out mineral from both the quarries. Coupled to that, few temples and crusher units are present near the project site and the route for carrying out the mined-out mineral will be through Mariathaipuram Road, which is one-way road, which may be an attributing factor.

The governing factors for the transport of PM are wind direction & wind speed. The baseline monitoring is done for the three months i.e., from December 2024 -February 2025. The predominant wind direction is blowing from North east to South West and the maximum wind speed is 4.2 mps. The greater values of Particulate matter will have its impacts on Human Health. Short term exposure may cause coughing, shortness of breath, tightness of the chest, irritation of the eyes. The Long-term exposure may lead to reduced lung function, development of respiratory diseases and also premature death of people with Lung diseases.

SO_2:

Table 3-13 Maximum and Minimum Values of SO_2

Description	SO2	Location
Max	7.7	Vellalankulam
Min	3.7	Melakalangal
Standard SO2 - 80		

The main source of SOx are Burning of fossil fuels such as coal, oil and natural gas. Sulfur dioxide emissions are released primarily as a result of generated electricity through fossil fuel burning power stations. Additional smaller sources of sulfur dioxide are released from industrial processes. These include extracting metal from ore and the burning of fuels with high sulfur content by locomotives. The maximum value is observed in Vellalankulam & the minimum value is observed in Melakalangal.

The high value in Vellalankulam is attributed to more no. of temples and the village is located near District Road, which is connected to Sankaran Koil – Surandai Road, wherein the movement of vehicles will be more.

The increased value of Sox can have detrimental effects on human health. Such effects include breathing problems, particularly in asthmatics, whereas short-term exposure can lead to chest tightness and coughing and wheezing. Continued exposure to sulfur dioxide has been linked with alterations of the lungs defenses and aggravation of existing cardiovascular disease.

Sulfur dioxide is a major precursor to particulate soot, which reduces air quality. Sulphur dioxide has an acidifying effect on the environment. Acidification harms plants and animals, both on land and in water. When the ground turns acidic, vital nutrients are leached from the soil, which eventually may result in reduced fertility of the soil.

NOx:

Table 3-14 Maximum and Minimum Values of NOx

Description	**NOx**	**Location**
Max	12.6	Vellalankulam
Min	6.8	Echchanda
Standard NOx - 80		

The sources of NOx pollution include emissions by automobiles, trucks and various non-road vehicles (e.g., construction equipment). NOx is released into the atmosphere by combustion of fuels, such as hydrocarbons, in air; especially at high temperatures, such as in car engines. In areas of high motor vehicle traffic, the nitrogen oxides emitted can be a significant source of air pollution.

The maximum value is observed in mine lease area. This is mainly due to more movement of vehicles and trucks in the area and all the mined-out mineral will be transported through Mariathaipuram Road, which is one-way road. Also, there are already another operating mine present in the vicinity of the project site, where blasting operations will be carried out. The blasting of explosives may produce Nox, which will be dispersed in air by the wind, which may be an attributing factor.

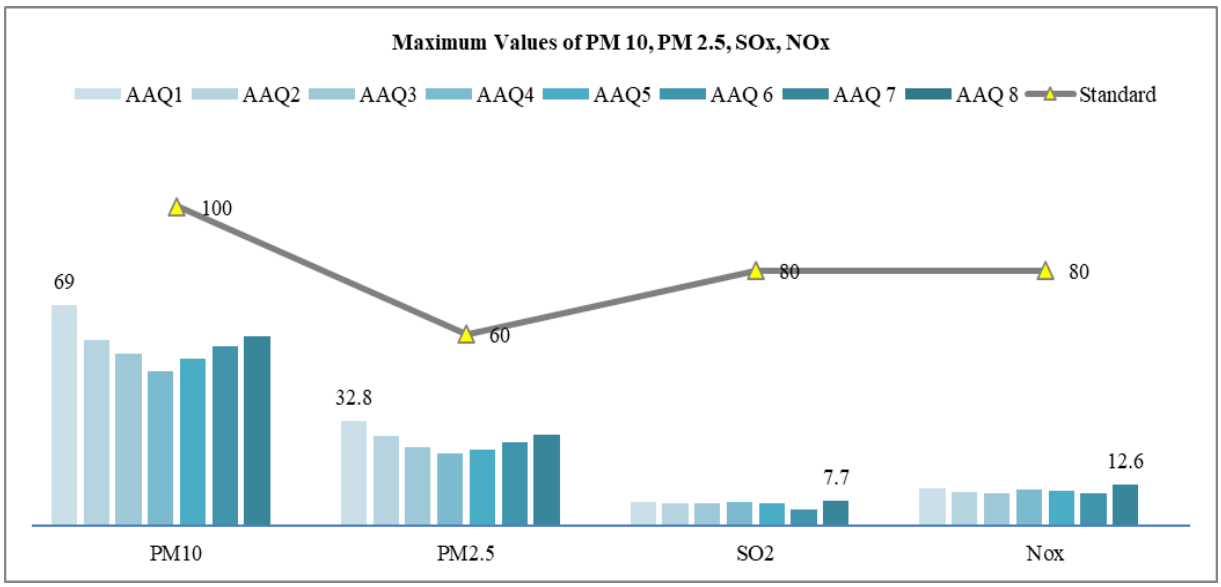


Figure 3-29 Maximum Values of PM10, PM2.5, SO_2, NOx

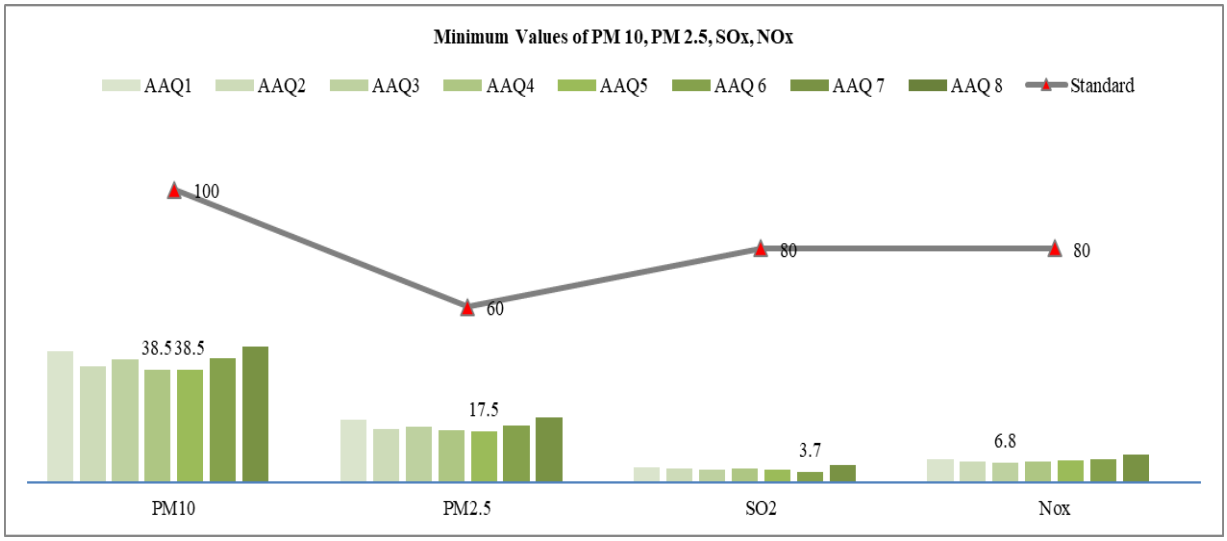


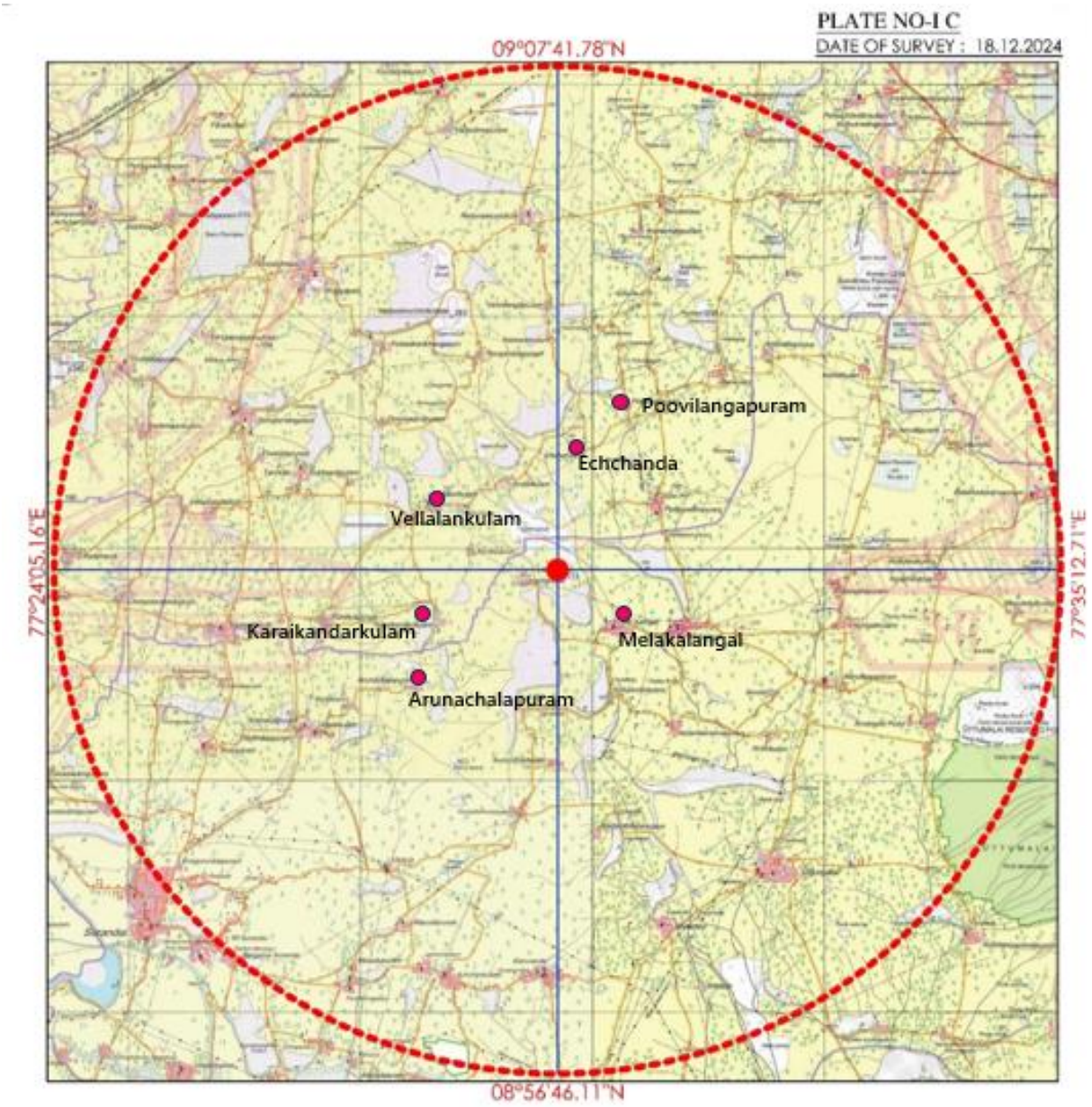
Figure 3-30 Minimum Values of PM10, PM2.5, SO_2, NOx

3.8.3 Noise Environment

Table 3-15 Noise Level Monitoring

Environmental Parameters*: Noise Analysis*		
Monitoring Period	December 2024 – February 2025	
Design Criteria	Based on the Sensitivity of the area	
Monitoring Locations	**Location**	**Distance from the project site**
	Project Site	-
	Poovilangapuram	3.60 km, NE
	Echchanda	2.52 km, NE

	Karikandarkulam	2.32 km, SW	
	Arunachalapuram	3.46 km, SW	
	Melakalangal	1.65 km, SE	
	Vellalankulam	2.73 km, NW	
Methodology	Noise level measurements were taken at the selected locations using noise level meter both during day and night time. Noise level measurements were taken continuously for 24 hours at hourly intervals		
Frequency of Monitoring	Noise samples were collected from 8 locations - Once in a season		

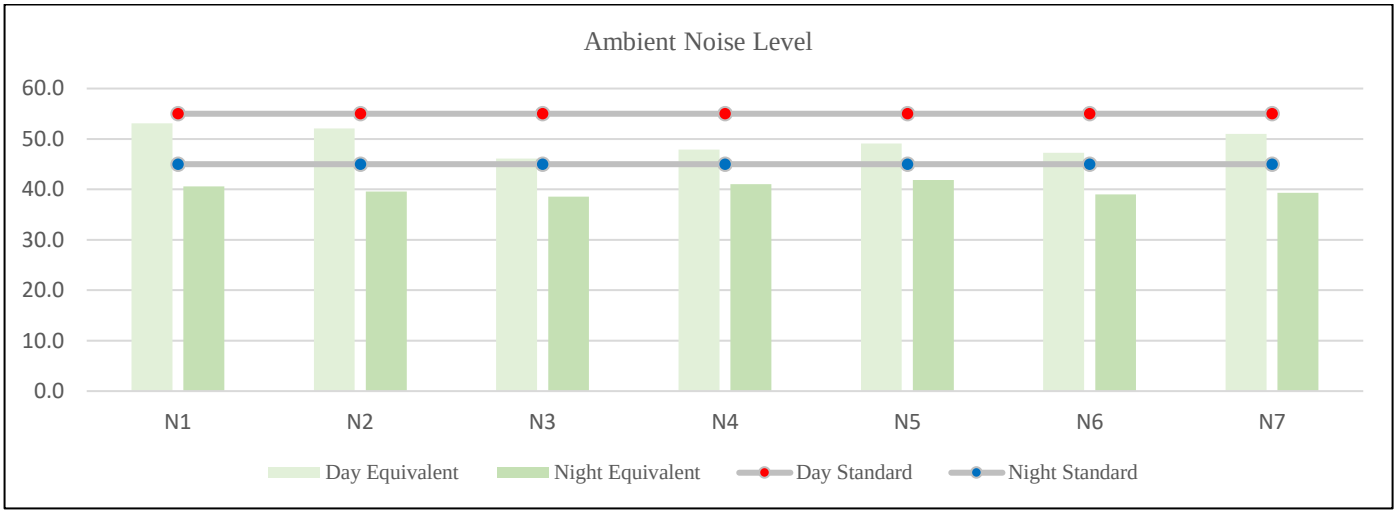


Ambient Noise Levels are monitored in the chosen 6 Locations including the project Site and the monitoring results are summarized below

Day and Night Noise Level (Leq day)

Table 3-16 Day Noise Level (Leq Day)

Noise Levels	N1	N2	N3	N4	N5	N6	N7
Day Equivalent	53.1	52.1	46.1	47.9	49.1	47.3	51.0
Night Equivalent	40.6	39.6	38.6	41.1	41.9	39.0	39.3
Day Standard	55	55	55	55	55	55	55
Night Standard	45	45	45	45	45	45	45



Inference:

Day Noise Level: The maximum value is observed in Mine Lease Area. Since the monitoring location is near existing quarries and crushers, the noise levels will be more due to the quarrying and crushing activity. In addition to that, movement of trucks will be there to carry out the mined-out mineral, which is also a contributing factor.

The noise level in the project site is 53.1 dB (A) and the value is within the CPCB standards.

Night Noise Level:

The maximum night noise is observed in Arunachalapuram. This is due to the movement of vehicles, and also since the monitoring location is in the vicinity of various commercial settlements viz Lodge, Temple, travel agencies, where the vehicular traffic will be more even during night time.

The noise level in the Arunachalapuram is 41.9 dB(A) and the value is within the CPCB standards.

3.8.4 Soil Environment

The project area is surrounded Uchipothai, Melakalangal, Arunachalapuram etc which are not prone to erosion. Sheet erosion is the uniform removal of soil in thin layers by the forces of raindrops and overland flow. In few places, slight sheet erosion can be seen. It can be a very effective erosive process because it can cover large areas of sloping land and go unnoticed for quite some time. The saline nature of the soil within 5 km radius is studied. The soil in the area is not affected.

Baseline Data

The present study of the soil quality establishes the baseline characteristics which will help in future in identifying the incremental concentrations if any, due to the operation Phase of the proposed project. The sampling locations have been identified with the following objectives:

- To determine the impact of proposed project on soil characteristics and
- To determine the impact on soils more importantly from agricultural productivity point of view.

Table 3-17 Soil Quality Analysis

<table>
<tr><td colspan="2">Environmental Parameters: Soil Analysis</td></tr>
<tr><td>Monitoring Period</td><td>December 2024 – February 2025</td></tr>
<tr><td>Design Criteria</td><td>Based on the Environmental settings in the study area</td></tr>
<tr><td>Monitoring Locations</td><td>
<table>
<tr><th>Location</th><th>Distance from the project site</th></tr>
<tr><td>Project Site</td><td>-</td></tr>
<tr><td>Poovilangapuram</td><td>3.60 km, NE</td></tr>
<tr><td>Echchanda</td><td>2.52 km, NE</td></tr>
<tr><td>Karikandarkulam</td><td>2.32 km, SW</td></tr>
<tr><td>Arunachalapuram</td><td>3.46 km, SW</td></tr>
<tr><td>Melakalangal</td><td>1.65 km, SE</td></tr>
<tr><td>Vellalankulam</td><td>2.73 km, NW</td></tr>
</table>
</td></tr>
<tr><td>Methodology</td><td>Composite soil samples using sampling augers and field capacity apparatus</td></tr>
<tr><td>Frequency of Monitoring</td><td>Soil samples were collected from 7 locations Once in a season</td></tr>
</table>

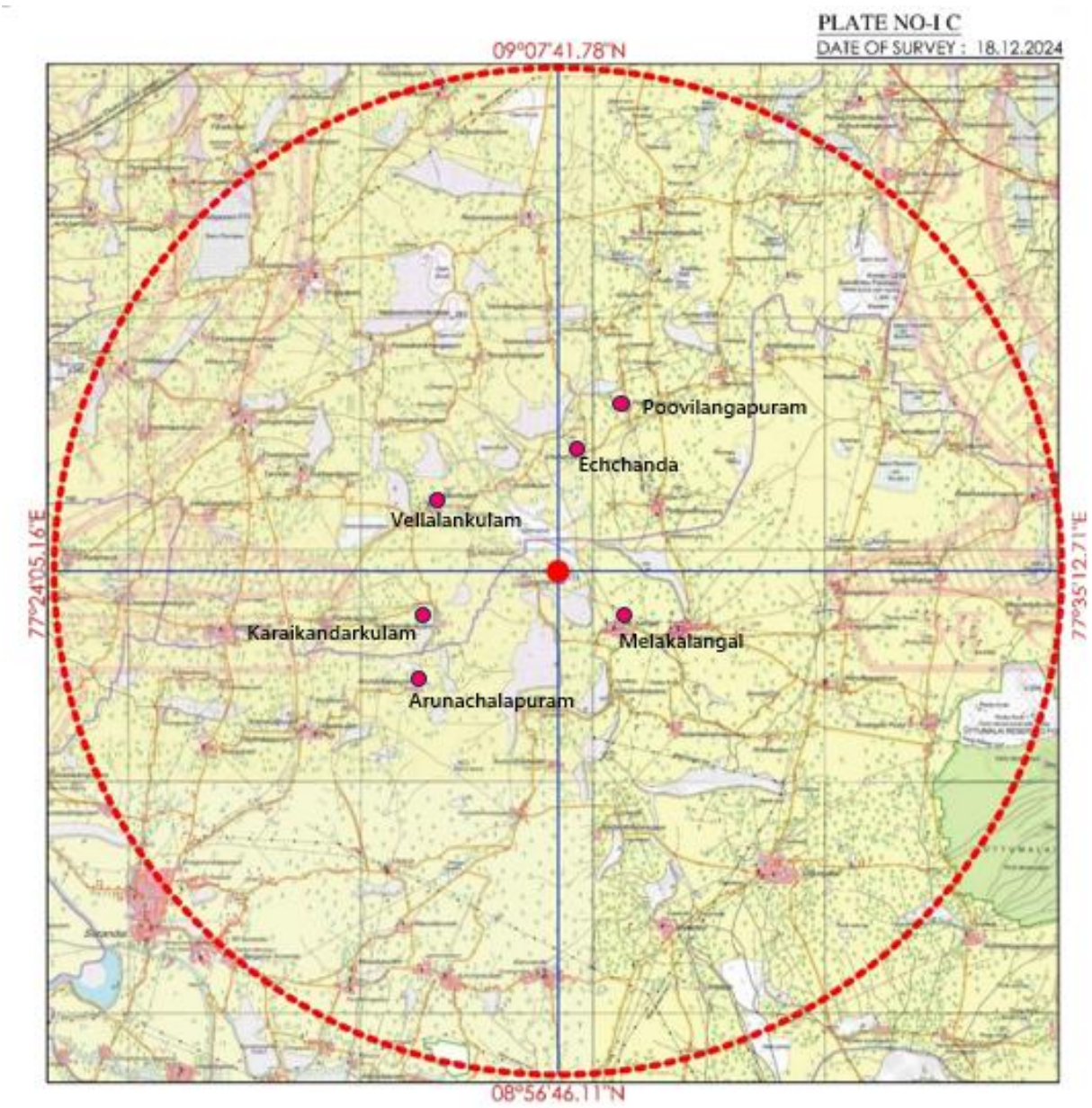


Figure 3-31 Soil Quality Monitoring Locations

Monitoring photos

Figure 3-32 Soil Quality Sampling Photos

To assess the soil quality of the study area, 6 monitoring stations were selected and the results are summarized below

Table 3-18 Soil Quality Analysis

S.No	Parameter	Unit	S1	S2	S3	S4	S5	S6	S7
1	pH at 25 °C	-	6.73	5.19	8.03	6.77	7.65	8.03	8.52
2	Electrical Conductivity	µmhos/cm	89.97	138.2	298.0	271.6	376.5	225.0	178.0
3	Dry matter content	%	96.23	92.38	88.99	97.66	90.11	94.83	94.62
4	Water Content	%	3.77	7.62	11.01	2.34	9.89	5.17	5.38
5	Organic Matter	%	14.80	5.71	7.62	20.47	20.04	12.56	27.75
6	Soil texture	-	SILTY CLAY	CLAY	SILTY CLAY LOAM	CLAY	SILTY CLAY	SILTY CLAY	SILTY CLAY
7	Grain Size Distribution i. Sand	%	2.53	5.18	7.99	7.76	5.93	6.26	7.47
8	ii. Silt	%	50.75	15.07	64.30	28.66	46.38	42.60	51.39
9	iii. Clay	%	46.73	79.75	27.71	63.58	47.73	51.14	41.14
10	Phosphorous as P	mg/kg	4.20	0.80	2.70	2.90	2.80	3.26	4.20
11	Sodium as Na	mg/kg	635	478	745	559	632	487	910
12	Potassium as K	mg/kg	404	226	369	342	298	246	539

13	Nitrogen and Nitregenous Compounds	mg/kg	320	124	256	189	221	176	245
14	Total Soluble Sulphate	%	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15	Porosity	%	28.6	42.9	33.3	33.3	43.8	38.5	33.3
16	Water Holding Cabacity	Inches/foot	42	40	38	39	40	42	44

Physical Properties:

Regular cultivation practices increase the bulk density of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favourable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The water holding capacity was found in the range of 38 Inches/Foot to 44 Inches/Foot.

Chemical Properties:

Chemical characteristics of soils include pH, exchangeable cations and fertility status in the form of NPK values and organic matter. The value of the pH is acidic and alkaline and it ranges from 5.19 to 8.52. The organic matter varies from 5.71% to 27.75%, which indicates the soil is slightly fertile.

3.8.5 Ecology and Biodiversity

Ecology and Biodiversity is studied for 10 km radius around the project site. Project site is considered as core zone and from radius of 5 km radius, it is considered as buffer zone.

- Primary field survey is carried out for the assessment of flora and fauna
- In addition to that, Secondary data from Journals/Literature were studied and compiled to understand the species present

Survey Purpose and Approach:

The basic purpose is to explore the biological environment under Environment Impact Assessment (EIA) and to assist in the decision-making process and to ensure that the project options under consideration are bio-environmentally friendly. EIA identifies ways of improving project environmentally by preventing, minimizing, mitigating or compensating for adverse impacts before construction and development phase. The present study on the floral & faunal assessment of the proposed project is based on field survey of the area supported by secondary data from various governmental and non-governmental sources.

Objectives of the Study:

The objectives of this study were as follows:

- To conduct detail study for floral/faunal/avifaunal elements in the Study area.

- To assess scheduled species in the Study area (Rare, endangered, critically endangered, endemic and vulnerable).
- Baseline data for the study area along with a description of the existing terrestrial, wetland and aquatic vegetation.
- To identify impact of project on the biological environment, this will be discussed under Chapter 4.

Field Study and Methodology adopted

To assess the suitability of the methodology, random field survey was done. Field survey was conducted around 5 km radius from the project site and five locations were chosen based on the species density. Quadrat method is chosen for the proposed study as compared to other sampling methods, because they are relatively simple to use. Quadrat plots are uniform in size and shape and distributed randomly throughout the sample area, which makes the study design straightforward. They are also one of the most affordable techniques because they require very few materials.

Monitoring Locations

Table 3-19 Ecology & Biodiversity – Monitoring Locations

S. No	Location	Latitude	Longitude	No. of Quadrates		
				Trees (10mx10m)	Shrubs (5mx5m)	Herbs and grasses (1mx1m)
1.	Project Site					
2.	Melakalangal	9° 1'43.19"N	77°30'8.83"E	1	4	5
3.	Echchanda	9° 3'36.64"N	77°29'39.35"E	1	4	5
4.	Keelakalangal	9° 1'39.40"N	77°31'8.42"E	1	4	5
5.	Kurunthanmozhi	9° 0'39.29"N	77°29'15.82"E	1	4	5

Study outcome:

Phytosociological parameters, such as Density, Frequency, Basal Area, Abundance and Importance Value Index of individual species (Trees) were determined in randomly placed quadrate of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, Density, Frequency, Relative Density & Relative Frequency were found.

Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 2 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index:

Parameters	Formula
Density	Total No. of individuals of species/ Total No. of Quadrats used in sampling
Frequency (%)	(Total No. of Quadrats in which species occur/ Total No. of Quadrats studied) * 100
Dominance	Total Basal Area /Total area sampled
Abundance	Total No. of individuals of species/ No. of Quadrats in which they occur
Relative Density	(Total No. of individuals of species/Sum of all individuals of all species) * 100
Relative Frequency	(Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100
Relative Dominance	Dominance of a given species/Total Dominance of all species
Important Value Index	Relative Density + Relative Frequency + Relative Dominance

The details of trees, herbs and shrubs along with the Phytosociological parameters for the study area is shown below:

Table 3-20 Tree Species in the core zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI
1	Ficus carica	Athi maram	2	2	6	0.33	33.33	1	0.28	1.74	2.20	4.45	8.39
2	Cassia siamea	Manjal Konrai	2	2	6	0.33	33.33	1	0.07	1.74	2.20	1.11	5.05
3	Acacia nilotica	Karuvelai	4	4	6	0.67	66.67	1	0.28	3.48	4.40	4.45	12.33
4	Bambusa vulgaris	Moongil	4	4	6	0.67	66.67	1	0.50	3.48	4.40	7.92	15.79
5	Anacardium occidentale	Cashew	2	2	6	0.33	33.33	1	0.44	1.74	2.20	6.96	10.89
6	Ailanthus excelsa	Pee-nari Maram	2	2	6	0.33	33.33	1	0.27	1.74	2.20	4.31	8.24
7	Butea monosperma	Parasa	3	3	6	0.50	50.00	1	0.23	2.61	3.30	3.61	9.51
8	Aegle marmelos	Vilvam	1	1	6	0.17	16.67	1	0.16	0.87	1.10	2.50	4.47
9	Causuarina equisetifolia	Savukku	2	1	6	0.33	16.67	2	0.21	1.74	1.10	3.34	6.18
10	Pterocarpus santalinus	Senjantanam	1	1	6	0.17	16.67	1	0.20	0.87	1.10	3.22	5.19
11	Cocos nucifera	Thennai	12	6	6	2.00	100.00	2.00	0.15	10.43	6.59	2.39	19.42
12	Artocarpus heterophyllus	Palaa	2	2	6	0.33	33.33	1	0.18	1.74	2.20	2.85	6.79
13	Bombax ceiba	Sittan	4	4	6	0.67	66.67	1	0.08	3.48	4.40	1.27	9.14
14	Azadirachta indica	Veppam	10	5	6	1.67	83.33	2	0.13	8.70	5.49	1.98	16.17
15	Delonix regia	Cemmayir-Konrai	1	1	6	0.17	16.67	1	0.21	0.87	1.10	3.34	5.31
16	Delonix elata	Perungondrai	5	1	6	0.83	16.67	5	0.17	4.35	1.10	2.62	8.06
17	Dalbergia sissoo	Shisham	1	1	6	0.17	16.67	1	0.15	0.87	1.10	2.29	4.26
18	Ficus benghalensis	Alai	2	2	6	0.33	33.33	1	0.08	1.74	2.20	1.19	5.13
19	Annona squamosa	Sitapalam	4	1	6	0.67	16.67	4	0.23	3.48	1.10	3.61	8.18
20	Citrullus colocynthis	Kumatti	1	1	6	0.17	16.67	1	0.14	0.87	1.10	2.18	4.15
21	Ficus religiosa	Arasa maram	3	3	6	0.50	50.00	1	0.09	2.61	3.30	1.35	7.25
22	Polyalthia longifolia	Nettilinkam	5	3	6	0.83	50.00	1.67	0.14	4.35	3.30	2.18	9.83
23	Musa paradise	Vaazhai	3	3	6	0.50	50.00	1	0.08	2.61	3.30	1.19	7.09

24	Prosopis juliflora	Vaelikaruvai	3	3	6	0.50	50.00	1	0.21	2.61	3.30	3.34	9.25
25	Mangifera indica	Mamaram	8	6	6	1.33	100.00	1.333333	0.07	6.96	6.59	1.11	14.66
26	Terminalia catappa	Nattuvadamai	2	2	6	0.33	33.33	1	0.18	1.74	2.20	2.85	6.79
27	Morinda pubescens	Nuna	6	6	6	1.00	100.00	1	0.24	5.22	6.59	3.74	15.55
28	Thespesia populnea	Poovarasam	3	3	6	0.50	50.00	1	0.15	2.61	3.30	2.39	8.30
29	Tectona grandis	Thekku	3	3	6	0.50	50.00	1	0.12	2.61	3.30	1.88	7.79
30	Tamarindus indica	Puli	8	6	6	1.33	100.00	1.333333	0.20	6.96	6.59	3.09	16.64
31	Syzygium cumini	naval	1	1	6	0.17	16.67	1	0.11	0.87	1.10	1.79	3.75
32	Psidium guajava	Segapu	2	3	6	0.33	50.00	0.666667	0.09	1.74	3.30	1.43	6.47
33	Ziziphus mauritiana	Elandai	1	1	6	0.17	16.67	1	0.28	0.87	1.10	4.45	6.42
34	Citrus medica	Elumichai	2	2	6	0.33	33.33	1	0.23	1.74	2.20	3.61	7.54
	Total		**115**	**91**					**6.35**				

Table 3-21 Shrubs in the study area

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation Status
1	Jatropagossypifolia	Kaatamanaku	28	17	24	1.17	0.71	1.65	14.43	17.17	Not Assessed
2	Lantana trifolia	Shrub verbana	10	3	24	0.42	0.13	3.33	5.15	3.03	Not Assessed
3	Robiniapseudoacacia	Black locust	17	5	24	0.71	0.21	3.4	8.76	5.05	Least Concern
4	Lantana camara	Unnichedi	9	6	24	0.38	0.25	1.5	4.64	6.06	Not Assessed
5	Calotropis gigantea	Erukam	14	12	24	0.58	0.50	1.17	7.22	12.12	Not Assessed
6	Stachytarpheaurticifolia	Rat tail	15	9	24	0.63	0.38	1.67	7.73	9.09	Not Assessed
7	Datura metal	Ummattangani	5	4	24	0.21	0.17	1.25	2.58	4.04	Not Assessed
8	Hibiscus rosa sinensis	Sembaruthi	3	2	24	0.13	0.08	1.5	1.55	2.02	Not Assessed
9	Tabernaemontanadivaricata	Crepe Jasmine	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed

10	Chloromolaena odorata	Venapacha	9	6	24	0.38	0.25	1.5	4.64	6.06	Least Concern
11	Euphorbia geniculata	Amman Pacharisi	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
12	Catharanthus roseus	Nithyakalyani	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
13	Woodfordiafruiticosa	Velakkai	3	3	24	0.13	0.13	1	1.55	3.03	Least Concern
14	Morindapubescens	Mannanunai	2	2	24	0.08	0.08	1	1.03	2.02	Not Assessed
15	Acalypha indica	Kuppaimeni	20	8	24	0.83	0.33	2.5	10.31	8.08	Not Assessed
16	Parthenium hysterophorous	Vishapoondu	50	13	24	2.08	0.54	3.85	25.77	13.13	Not Assessed

Table 3-22 Herbs & Grasses in the core zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation status
1	Plumbago zeylanica	Chittiramoolam	3	3	30	0.10	0.10	1	1.19	3.23	Not assessed
2	Mimosa pudica	Thottacherungi	6	5	30	0.20	0.17	1.2	2.38	5.38	Least concern
3	Sida acuta	Malaidangi	10	3	30	0.33	0.10	3.33	3.97	3.23	Not assessed
4	Scrophularia nodosa	Sarakkothini	15	7	30	0.50	0.23	2.14	5.95	7.53	Not assessed
5	Helicteresisora	Valampuri	2	2	30	0.07	0.07	1	0.79	2.15	Not assessed
6	Cynodondactylon	Arugu	12	6	30	0.40	0.20	2	4.76	6.45	Not assessed
7	Sporobolus fertilis	Giant Parramatta Grass	9	4	30	0.30	0.13	2.25	3.57	4.30	Not assessed
8	Viburnum dentatum	Viburnum	5	5	30	0.17	0.17	1	1.98	5.38	Least concern
9	Heraculem spondylium	Hog Weed	20	10	30	0.67	0.33	2	7.94	10.75	Not assessed
10	Laportea canadensis	Peruganchori	30	20	30	1.00	0.67	1.5	11.90	21.51	Not assessed

11	Euphorbia hirta	Amman Pacharisi	5	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
12	Tridax procumbens	Vettukaayathalai	5	4	30	0.17	0.13	1.25	1.98	4.30	
13	Tephrosia purpurea	Kavali	20	4	30	0.67	0.13	5	7.94	4.30	
14	Sida cordifolia	Maanikham	45	4	30	1.50	0.13	11.25	17.86	4.30	
15	Tridax procumbens	Cuminipachai	15	4	30	0.50	0.13	3.75	5.95	4.30	
16	Ruelliastrepens	Grandinayagam	25	4	30	0.83	0.13	6.25	9.92	4.30	
17	Senna occidentalis	Nattamsakarai	25	4	30	0.83	0.13	6.25	9.92	4.30	

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

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

Table 3-23 Biodiversity Indices

Description	Formula
Species diversity – Shannon – Wiener Index	$H=\Sigma[(p_i)*\ln(p_i)]$ Where p_i : Proportion of total sample represented by species i:number of individuals of species i/ total number of samples
Evenness	H/H_{max} H_{max} = ln(s)= maximum diversity possible S=No. of species

Species Richness by Margalef	RI = S-1/ln N Where S = Total Number of species in the community N = Total Number of individuals of all species in the community

Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees

Table 3-24 Species Diversity for trees

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Ficus carica	Athi maram	2	0.017857	-4.02535	-0.07188
Cassia siamea	ManjalKonrai	2	0.017857	-4.02535	-0.07188
Acacia nilotica	Karuvelai	4	0.035714	-3.3322	-0.11901
Bambusa vulgaris	Moongil	4	0.035714	-3.3322	-0.11901
Anacardium occidentale	Cashew	2	0.017857	-4.02535	-0.07188
Alstoniascholaris	Elilaipalai	2	0.017857	-4.02535	-0.07188
Butea monosperma	Parasa	3	0.026786	-3.61989	-0.09696
Aegle marmelos	Vilvam	1	0.008929	-4.7185	-0.04213
Causuarinaequisetifolia	Savukku	2	0.017857	-4.02535	-0.07188
Albizia amara	Wunja	1	0.008929	-4.7185	-0.04213
Cocos nucifera	Thennai	15	0.133929	-2.01045	-0.26926
Artocarpus heterophyllus	Palaa	2	0.017857	-4.02535	-0.07188
Bombax ceiba	Sittan	4	0.035714	-3.3322	-0.11901
Azadirachta indica	Veppam	10	0.089286	-2.41591	-0.21571
Delonix regia	Cemmayir-Konrai	1	0.008929	-4.7185	-0.04213
Delonixelata	Perungondrai	1	0.008929	-4.7185	-0.04213
Dalbergia sissoo	Shisham	1	0.008929	-4.7185	-0.04213
Ficus benghalensis	Alai	2	0.017857	-4.02535	-0.07188
Annona squamosa	Sitapalam	1	0.008929	-4.7185	-0.04213
Citrullus colocynthis	Kumatti	1	0.008929	-4.7185	-0.04213
Ficus religiosa	Arasamaram	3	0.026786	-3.61989	-0.09696
Polyalthia longifolia	Nettilinkam	5	0.044643	-3.10906	-0.1388
Musa paradise	Vaazhai	3	0.026786	-3.61989	-0.09696
Prosopis juliflora	Vaelikaruvai	3	0.026786	-3.61989	-0.09696
Mangifera indica	Mamaram	8	0.071429	-2.63906	-0.1885
Terminalia catappa	Nattuvadamai	2	0.017857	-4.02535	-0.07188
Morindapubescens	Nuna	6	0.053571	-2.92674	-0.15679
Thespesia populnea	Poovarasam	3	0.026786	-3.61989	-0.09696
Tectona grandis	Thekku	3	0.026786	-3.61989	-0.09696
Tamarindus indica	Puli	8	0.071429	-2.63906	-0.1885
Syzygiumcumini	naval	1	0.008929	-4.7185	-0.04213

Psidium guajava	Segapu	3	0.026786	-3.61989	-0.09696
Ziziphus mauritiana	Elandai	1	0.008929	-4.7185	-0.04213
Citrus medica	Elumichai	2	0.017857	-4.02535	-0.07188
Total		112			-3.22

H (Shannon Diversity Index) =3.22

Table 3-25 Species Diversity for Shrubs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Jatropagossypifolia	Kaatamanaku	28	0.14433	-1.93565	-0.27937
Lantana trifolia	Shrub verbana	10	0.051546	-2.96527	-0.15285
Robiniapseudoacacia	Black locust	17	0.087629	-2.43464	-0.21335
Lantana camara	Unnichedi	9	0.046392	-3.07063	-0.14245
Calotropis gigantea	Erukam	14	0.072165	-2.6288	-0.18971
Stachytarpheaurticifolia	Rat tail	15	0.07732	-2.55981	-0.19792
Datura metal	Ummattangani	5	0.025773	-3.65842	-0.09429
Hibiscus rosa sinensis	Sembaruthi	3	0.015464	-4.16925	-0.06447
Tabernaemontanadivaricata	Crepe Jasmine	3	0.015464	-4.16925	-0.06447
Chloromolaena odorata	Venapacha	9	0.046392	-3.07063	-0.14245
Euphorbia geniculata	Amman Pacharisi	3	0.015464	-4.16925	-0.06447
Catharanthus roseus	Nithyakalyani	3	0.015464	-4.16925	-0.06447
Woodfordiafruiticosa	Velakkai	3	0.015464	-4.16925	-0.06447
Morindapubescens	Mannanunai	2	0.010309	-4.57471	-0.04716
Acalypha indica	Kuppaimeni	20	0.103093	-2.27213	-0.23424
Parthenium hysterophorous	Vishapoondu	50	0.257732	-1.35584	-0.34944
		194			-2.3656

H (Shannon Diversity Index) =2.36

Table 3-26 Species Diversity for Herbs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Plumbago zeylanica	Chittiramoolam	3	0.011905	-4.43082	-0.05275
Mimosa pudica	Thottacherungi	6	0.02381	-3.73767	-0.08899
Sida acuta	Malaidangi	10	0.039683	-3.22684	-0.12805
Scrophularia nodosa	Sarakkothini	15	0.059524	-2.82138	-0.16794
Helicteresisora	Valampuri	2	0.007937	-4.83628	-0.03838
Cynodondactylon	Arugu	12	0.047619	-3.04452	-0.14498
Sporobolus fertilis	Giant Parramatta Grass	9	0.035714	-3.3322	-0.11901
Viburnum dentatum	Viburnum	5	0.019841	-3.91999	-0.07778

Heraculem spondylium	Hog Weed	20	0.079365	-2.5337	-0.20109
Laportea canadensis	Peruganchori	30	0.119048	-2.12823	-0.25336
Euphorbia hirta	Amman Pacharisi	5	0.019841	-3.91999	-0.07778
Tridax procumbens	Vettukaayathalai	5	0.019841	-3.91999	-0.07778
Tephrosia purpurea	Kavali	20	0.079365	-2.5337	-0.20109
Sida cordifolia	Maanikham	45	0.178571	-1.72277	-0.30764
Tridax procumbens	Cuminipachai	15	0.059524	-2.82138	-0.16794
Ruelliastrepens	Grandinayagam	25	0.099206	-2.31055	-0.22922
Senna occidentalis	Nattamsakarai	25	0.099206	-2.31055	-0.22922
		252			-2.56298

H (Shannon Diversity Index) =2.56

Table 3-27 Evenness and Species Richness by Margalef

Details	H	Hmax	Evenness	Species Richness (Margalef)
Trees	3.22	3.5	0.9	7
Shrubs	2.36	2.77	0.85	2.84
Herbs	2.56	2.83	0.9	2.89

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

Frequency Pattern

To understand the frequency pattern, the observed frequency is compared with the Raunkiaer's frequency. Any deviation from Raunkiaer's frequency implies disturbed community.

Classes of species in a community and normal value of class according to Raunkiaer

Class	Frequency (%)	Normal Value in the class
A	1-20	53
B	21-40	14

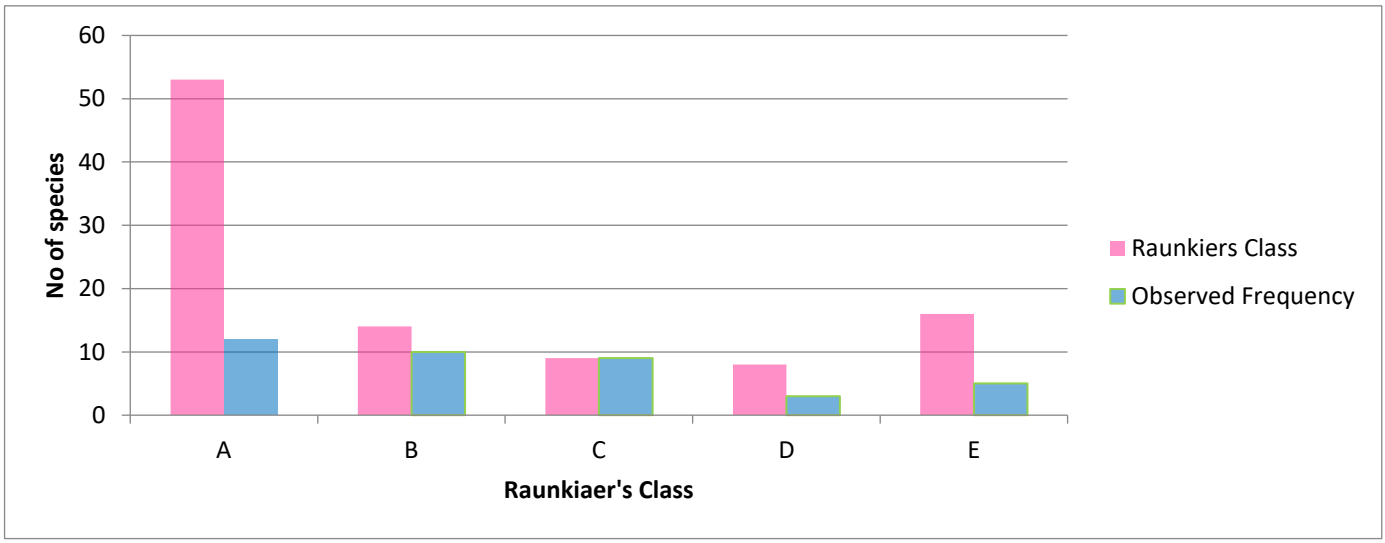
C	41-60	9
D	61-80	8
E	81-100	16

Where A>B>C>=<D<E

Raunkiaer's class for the observed species

S. No.	Scientific Name	Local Name	Frequency (%)	Class as per Raunkiaer's Law
1.	Ficus carica	Athi maram	33.33	B
2.	Cassia siamea	ManjalKonrai	33.33	B
3.	Acacia nilotica	Karuvelai	66.67	D
4.	Bambusa vulgaris	Moongil	66.67	D
5.	Anacardium occidentale	Cashew	33.33	B
6.	Alstoniascholaris	Elilaipalai	33.33	B
7.	Butea monosperma	Parasa	50.00	C
8.	Aegle marmelos	Vilvam	16.67	A
9.	Causuarinaequisetifolia	Savukku	33.33	B
10.	Albizia amara	Wunja	16.67	A
11.	Cocos nucifera	Thennai	100	E
12.	Artocarpus heterophyllus	Palaa	33.33	B
13.	Bombax ceiba	Sittan	66.67	D
14.	Azadirachta indica	Veppam	100	E
15.	Delonix regia	Cemmayir-Konrai	16.67	A
16.	Delonixelata	Perungondrai	16.67	A
17.	Dalbergia sissoo	Shisham	16.67	A
18.	Ficus benghalensis	Alai	33.33	B
19.	Annona squamosa	Sitapalam	16.67	A
20.	Citrullus colocynthis	Kumatti	16.67	A
21.	Ficus religiosa	Arasamaram	50.00	C
22.	Polyalthia longifolia	Nettilinkam	50.00	C
23.	Musa paradise	Vaazhai	50.00	C
24.	Prosopis juliflora	Vaelikaruvai	50.00	C
25.	Mangifera indica	Mamaram	100	E
26.	Terminalia catappa	Nattuvadamai	33.33	B

27.	Morindapubescens	Nuna	100	E
28.	Thespesia populnea	Poovarasam	50.00	C
29.	Tectona grandis	Thekku	50.00	C
30.	Tamarindus indica	Puli	100	E
31.	Syzygiumcumini	naval	16.67	A
32.	Psidium guajava	Segapu	50.00	C
33.	Ziziphus mauritiana	Elandai	16.67	A
34.	Citrus medica	Elumichai	33.33	B



Interpretation: The observed frequency is A>B>C<D>E, which follows Raunkiaer's Distribution Frequency and hence the ecology is undisturbed.

Floral study in the Buffer Zone:

Economically important Flora of the study area

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

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

Rare and endangered floral species: There are no rare or endangered or threatened (RET) species of in the study area. During the vegetation survey, there are no any species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

Faunal Communities

Both direct and indirect observation methods were used to survey the fauna.

- Point Survey Method: Observations were made in each site for 15 minutes duration.
- Road Side Counts: The observer traveled by motor vehicles from site to site, all sightings were recorded (this was done both in the day and night time). An index of abundance of each species was also established.
- Pellet and Track Counts: All possible animal tracks and pellets were identified and recorded (South Wood, 1978).

Additionally, survey of relevant literature was also done to consolidate the list of fauna distributed in the buffer zone.

Methodology Adopted:

Point Survey method was adopted for this development project where observations were made in each site for 15 minutes duration.

Study in the core zone:

Point Survey method was adopted for the study within 2 km radius and the following species were observed

Study in the core Zone

Mammals: No wild mammalian species was directly sighted during the field survey. Discussion with local villagers located around the study area also could not confirm presence of any wild animal in that area. Three stripped Palm Squirrel, Common Indian Hare, Common mongoose, Common Mouse etc were observed during primary survey.

Avifauna: Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems (Lawton, 1996) attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 26 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging.
The list of fauna species found in the study area is mentioned below

Table 3-28 List of faunal Species

Scientific Name	Common Name	Schedule of wild life protection act	IUCN conservation status
Mammals			
Funambulus pennanti	Palm Squirrel	IV	Least Concern
Mus rattus	Indian rat	IV	Not listed
Bandicota bengalensis	Indian mole rat	IV	Least Concern
Funambulus palmarum	Three stripped palm squirrel	IV	Least Concern
Herestes edwardsii	Common Mangoose	IV	Not listed
Mus musculus	Common Mouse	IV	Least Concern

Bandicota indica	Rat	IV	Least Concern
Lepus nigricollis	Indian Hare	IV	Least Concern
Felis catus	Cat	Not listed	Not listed
Canis lupus familiaris	Indian dog	Not listed	Not listed
Bos Indicus	Indian Cow	Not listed	Not listed
Bubalus bubalis	Buffalo	I	Not listed
Sus scrofa domesticus	Domestic pig	Not listed	Not listed
Birds			
Milvus migrans	Black kite	IV	Least concern
Vanellus indicus	Red wattled lapwing	IV	Least concern
Saxicoloides fulicatus	Indian Robin	IV	Least concern
Pycnonotus cafer	Red vented Bulbul	IV	Least concern
Phragamaticola aedon	Thick billed warbler	IV	Least concern
Pericrocotus cinnamomeus	Small Minivet	IV	Least concern
pseudibis papillosa	Black Ibis	IV	Least concern
Eudynamys scolopaceus	Koel	IV	Least concern
Ergetta garzetta	Little Erget	IV	Least concern
Psittacula krameni	Rose ringed parakeet	IV	Least concern
Bubulcus ibis	Cattle Erget	IV	Least concern
Dicrurus marcocercus	Black drongo	IV	Least concern
Streptopelia chinensis	Spotted dove	IV	Least concern
Columba livia	Rock pigeon	IV	Least concern
Corvus splendens	House crow	IV	Least concern
Cypsirurus balasiensis	Asian palm swift	IV	Least concern
Ardeola grayii	Pond heron	IV	Least concern
Elanus caeruleus	Black-winged kite	IV	Least concern
Alcedo atthis	Small blue kingfisher	IV	Least concern
Cuculus canorus	Common Cukoo	IV	Least concern
Centropus sinensis	Greater coucal	IV	Least concern
Phalacrocrax niger	Little comorant	IV	Least concern
Perdicula asiatica	Bush Quail	IV	Least concern
Alauda gulgula	Oriental skylark	IV	Least concern
Passer domesticus	House sparrow	IV	Least concern
Merops orientalis	Green bee eater	IV	Least concern
Reptiles & Amphibians			
Chameleon zeylanicum	Chameleon	IV	Not listed

Calotes versicolor	Common garden lizard	II	Not listed
Bungarus caeruleus	Common krait	IV	Not listed
Ophisops leschenaultia	Snake eyed lizard	--	Not listed
Bufo melanostictus	Toad	IV	Least concern
Ptyas mucosa	Rat snakes	IV	Least concern
Hemidactylus sp.	House lizard	--	Not listed
Butterflies			
Danaus chrysippus	Plain Tiger	--	Not listed
Papilio demoleus	Common lime	--	Not listed
Euploea core	Common crow	--	Least concern
Danaus genutia	Common tiger	--	Not listed
Eurema brigitta	Small grass yellow	--	Least concern

Secondary Data:

Flora:

Nellai Wildlife Sanctuary is known for its diverse flora, which includes a wide range of plant species found in the Western Ghats biographic zone. Here are some of the notable flora species that can be found in the sanctuary:

Hopea utilis: This is a hardwood tree species native to the Western Ghats region. It is valued for its timber.

Bentinckia condappana: Bentinckia condappana is a palm species native to the Western Ghats. It is known for its distinctive fan-shaped leaves.

Gluta travancorica: This is a tree species found in the Western Ghats. It is known for its medicinal properties and is used in traditional medicine.

Humboldtia unijuga: Humboldtia unijuga is a tree species commonly found in the Western Ghats. It belongs to the legume family (Fabaceae).

Eugenia singampattiana: Eugenia singampattiana is a plant species belonging to the Myrtaceae family. It is native to the Western Ghats and is known for its aromatic leaves and fruits.

Symplocos macrocarpa: Symplocos macrocarpa is a tree species found in the Western Ghats. It is known for its large fruits and is a part of the Symplocaceae family.

Fauna:

Nellai Wildlife Sanctuary in Tamil Nadu, India, is home to a diverse range of fauna, including mammals, birds, reptiles, and more. Here are some of the notable species of fauna that can be found in the sanctuary:

Mammals: Leopard, Nilgiri Langur, Nilgiri Marten, Mouse Deer, Sambar Deer

Birds: Malabar Whistling Thrush, Grey Junglefowl, Malabar Pied Hornbill, Great Pied Hornbill, Sri Lankan Frogmouth, Nilgiri Wood Pigeon

Reptiles: Indian Rock Python, Rat Snake, Spectacled Cobra, Common Indian Monitor Lizard

Avifauna:

Migratory birds start coming by December end and fly away to their northern homes by June or July after they lay eggs, hatch them and the young ones grow old enough to fly with the older ones. About 35 species of birds visit this calm but congenial village for breeding.

3.9 Demography and Socio-Economics

The demography survey study is done within 10km from the project site. The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below,

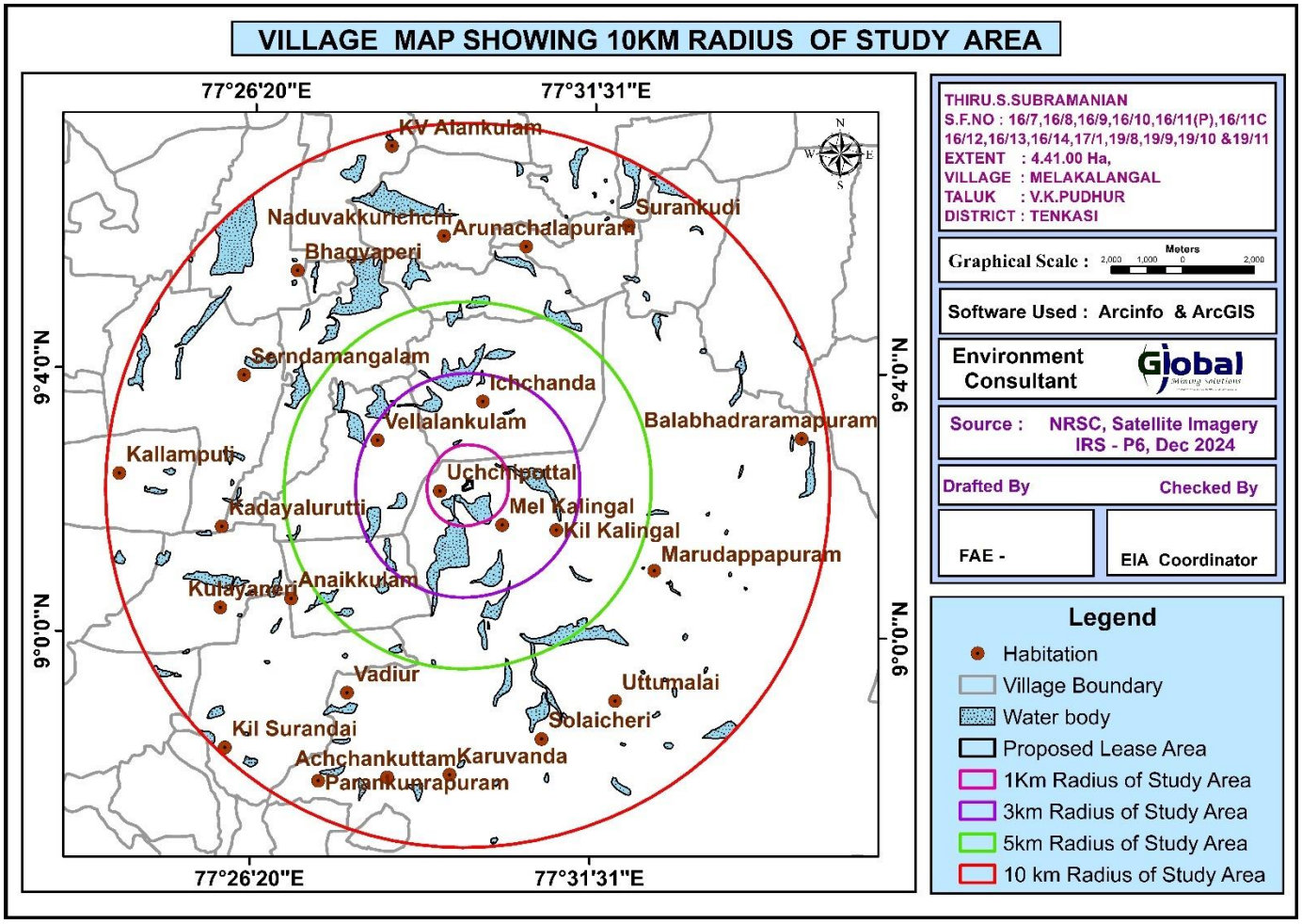


Figure 3-33 Villages around 10 km of the project site

Table 3-29 Demographic Profile – Study area

S.No.	Name of the Block	Rural			Urban			Total Population		
		Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
1	Tenkasi	51206	25609	25597	143451	71573	71878	194657	97182	97475
2	Shenkottai	26710	13344	13366	84684	42209	42475	111394	55553	55841
3	Kadayanallur	77482	38611	38871	90364	45449	44915	167846	84060	83786
4	Keelapavoor	129281	64317	64964	57503	28650	28853	186784	92967	93817
5	Kadayam	89661	44153	45508	21708	10703	11005	111369	54856	56513
6	Alangulam	128216	62927	65289	28776	14135	14641	156992	77062	79930
7	Vasudevanallur	72498	35269	37229	121658	60268	61390	194156	95537	98619
8	Sankarankoil	102406	50780	51626	57277	28470	28807	159683	79250	80433
9	Melaneelithanallur	69784	34577	35207	0	0	0	69784	34577	35207
10	Kuruvikulam	79793	39027	40766	8337	4144	4193	88130	43171	44959
Total		**827037**	**408614**	**418423**	**613758**	**305601**	**308157**	**1440795**	**714215**	**726580**

Source: Census of India, 2011

The Population of the district was 14,40,795 as per 2011 census. The density of population per sq.km was 500 persons in the 2011 census. The sex ratio is 1017 females for every 1000 males. The literacy rate is 69% in the district as per2011census.Out of total population, males were 7,14,215 and females were 7,26,580asper2011 census. The schedule caste population is 2,92,900 which represent 20%tothetotal population as per 2011 census. Schedule tribes are found to be very small in numbers of 3656 which is 0.3% to the total population.

I	Area (Sq.Km.)		:	**2882.44**
II	Population			
	a	Male	:	714215
	b	Female	:	726580
	c	Total	:	1440795
	d	Rural	:	827037
	e	Urban	:	613758
III	Density / Sq. Km		:	500
IV	Literates			
	a	Male	:	551165
	b	Female	:	453890
V	Main Workers 2011 Census - After Bifurcation			
	a	Total Workers	:	729007
	b	Male Workers	:	419862
	c	Female Workers	:	309145
	d	Rural Workers	:	452280
	e	Urban Workers	:	276727
	f	Cultivators	:	61979
	g	Agricultural Labours	:	200229
	h	Household Industry	:	134575
	i	Other Workers	:	258783
VI	Non-Workers		:	711414
VII	Language Spoken in the District		:	Tamil, English, Telugu &Urdu
3.VITAL STATISTICS				
I	Birth		:	17296
II	Death		:	8657
III	Infant Deaths		:	164
IV	Birth Rate (per 1000 Population)		:	11.37
V	Death Rate (per 1000 Population)		:	5.7
VI	Infant Mortality Rate (Per 1000 Live Births)		:	9.2
VII	Expectation of life at Birth		:	-
	a	Male	:	-
	b	Female	:	-
VIII	No. of Deaths of Women due to			
	a	At the time of delivery	:	-
	b	During Pregnancy	:	-

Source: District Statistical Handbook 2023-2024

Socio-economic survey methodology

Purposive sampling methods were used for selecting respondents (male and female) for household survey. For official information of village, Gram Panchyat member has been chosen. Structured questionnaire was used for survey. For group discussion, Panchyat bhavan, Aanganwadi bhavan, community halls were used. Out of total 25 villages, 5 villages (20%) were surveyed for which selection criteria is based on proximity to the project site and area with dense and scarce populations were chosen. The chosen villages for the study include: ***Uchipothai, Melakalangal, Arunachalapuram, Echchanda and Keelakalangal***

Table 3-30 Consolidated Report – Key Socio-Economic Indicator in the study area

S. No	Indicator	Percentage/Nos.
1	People below age 18	38
2	People age limit above 18	62
3	Literates	75
4	Illiterates	25
5	% of people employed in company	50
6	% of people self employed	43
7	% of people seasonally employed	3
8	% of people unemployed	4
9	% of houses covered with LPG Cooking gas	80
10	% of houses covered with toilet facility	70
11	% of houses covered with piped water supply	60

Salient Features in the study area

House pattern: It is notable that nearly 98% of the houses were pakka at survey area.

Employment: Main occupation of the people in the study area was agriculture

Fuel: All the households use LPG for cooking purpose

Main Crops: The cash crops include cotton, sugarcane, oilseeds, coffee, tea, rubber, coconut, gingelly and chillies. The important horticultural products are bananas and mangoes.

Migration: During survey, it was found that local population were migrating for employment purpose. Since due to the presence of various industrial units, migration from other places were also noted.

Sanitation: All the households were having toilet facilities in their houses. Drainage system was maintained in the study area.

Drinking Water Facilities: Ground water is the major source of drinking water in the villages wherein hand pumps, tap water and dug wells are installed.

Transportation Facility: For transportation purpose Auto, Public and Private Bus services

were available. Transportation facilities were frequently available in the study area and connecting major cities. Private vehicles like Bicycles & Motor Cycles were mostly used by villagers for transportation purpose

4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 Introduction

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. The anticipation of the possible & potential Environmental impact due to the proposed project is a key step in EIA. Based on the impacts assessed, appropriate mitigation measures should be adopted to maintain the environment with less or no damage.

4.2 Environmental Impacts

Environmental Impacts can be group into Primary impacts & Secondary Impacts

Primary Impacts: These impacts are directly attributed by the project

Secondary Impacts: These are those which are induced by primary impacts and include the associated investments and changed patterns of the social and economic activities by the action.

Assessment of impacts is done for the following Environmental Parameters:

- ♣ Land Environment
- ♣ Water Environment
- ♣ Air Environment
- ♣ Noise Environment
- ♣ Biological Environment
- ♣ Socio Economic Environment

Table 4-1 Impact & Mitigation measures on Land Environment

<table>
<tr><th>Aspect</th><th>Impact</th><th>Mitigation Measures</th></tr>
<tr><td>Quarrying operation</td><td>The proposed 4.41.0 Ha mine is quarrying of 9,01,561 m^3 of Rough Stone. The quarry operation is proposed to carry out with Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m is proposed. At the end of 5 years, mining lease area will be converted into ultimate pit of
<table>
<tr><th>Pit No.</th><th>Length (m)</th><th>Width (m)</th><th>Depth (m)</th></tr>
<tr><td>I</td><td>248</td><td>149</td><td>57</td></tr>
</table>
This may lead to soil erosion, degradation & resource loss

The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Rough Stone Quarry.

Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</td><td>The proposed project site is not prone to any kind of soil erosion. In addition, garland drainage of 1m x 1m will be provided to avoid storm water run- off.

It is proposed to plant 675 Nos. of local tree species (Neem, Magizham, Tamarind, Elandhai and Vilvam) along the periphery of the mining area which enhances the binding property of the soil. It is proposed to improve the affected land wherever possible for better land use, so as to support vegetation and creation of water reservoir in the ultimate pit after quarrying

The overburden in the form of Gravel, after the excavation of Gravel and Rough stone will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and levelling of low-lying areas.

The source of dust generation is majorly due to drilling, blasting, loading & unloading of the mined-out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs.
The proposed mining activity is carried out in almost hilly terrain where the contour level difference is 35m.</td></tr>
</table>

	Impact due to transformation of terrain characteristics over the large area results in soil degradation. Solid waste will be generated from the mining activity as there will be refuse also generation of domestic waste. If it not properly managed, may cause odor and health problem to the workers.	 The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.

Table 4-2 Impact & Mitigation measures on water environment

Aspect	**Impact**	**Mitigation Measures**
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff.	The water table will not be intersected during mining, as the ultimate depth is limited up to 57-meter AGL, whereas the ground water table is at 55m - 58m below the ground level. The municipal wastewater will be disposed into septic tanks followed by soak pit. No chemicals consisting of toxic elements will be used for carrying out mining activity. For the management of surface run-off, rain water harvesting plan will be proposed. The total harvested rainfall is 15,126.3 Cum [(4.41.0 Ha x 0.98 x 0.35) + (0.3 Ha x 0.98 x 0.35)]. 10% will be evaporated and the remaining 13,613.67 Cum. will be harvested in two sumps each of capacity 6900 Cu.m.

	The ground water depletion may occur due to mining activity. Chemicals consisting of nitrate used for blasting may pollute the surface run off Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours	The ground water table is at a depth of 78m the mining operation will not affect the aquifer. The ultimate pit at the end of the mining operation will be used for rain water storage, the stored water will be used for greenbelt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment. Further, the run-off water will be stored in sumps and after proper treatment; water will be used in the mining operation for dust suppression. Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater
Drainage	Mine drainage is surface water or groundwater that drains from an active or abandoned mine. One of the adverse impacts of mine drainage is it will contaminate the ground water.	As per the approved mining plan the ultimate pit limit is 57 m (BGL) for first five years. The ground water table is reported as 78m BGL. The depth is safe and economic for the quarrying operation. Hence the quarrying operation may not affect the ground water.

Table 4-3 Impact and mitigation measures on air environment

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated. The main source of pollutants arises due to drilling and blasting. 6 Nos. of Tipper will be used for loading and unloading, 2 Nos. of Excavator (0.90 m bucket capacity (with rock breaker attachment) will be used for excavation of the mineral which contributes to the generation of fugitive dust. In addition, blasting will be done using explosives leading to the generation of dust. <u>Effect on Human</u> Adverse effect on human health of working labourers and neighboring villagers like effect on breathing and respiratory system, damage to lung tissue, influenza or asthma.	It is proposed to plant 675 Nos of local species along the haul roads, outer periphery within the lease area to prevent the impact of dust in consultation with Forest department for the plantation of trees (Neem, Magizham, Tamarind, Elandhai and Vilvam) in two tier to combat air pollution and with herbs (Nerium) in between the tree species. Planning transportation routes of the mined-out mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting NH 744 Alternatively, graveled road may be constructed between mine lease area and nearest paved road connectivity. The speed of trucks plying on the haul road will be limited to 20km/hr to avoid generation of dust. The trucks will be covered by tarpaulin. Overloading will be avoided. Personal Protective Equipments (PPEs) like eye goggles, dust mask, leather gloves, safety shoes &boots will be provided to the workers engaged at dust generation points like excavation and loading points.

	Dust generation due to loading and unloading of mineral and due to transportation can also affect the workers as well as nearby villagers <u>Effect on Plants</u> Stomatal index may be minimized due to dust deposit on leaf.	2.5 kLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.

AERMOD Modelling:

Impact Prediction: Impact prediction is a very important phenomenon in evaluating the environmentally potential adverse impacts for any proposed mine project. The impact prediction is always carried out under worst possible conditions so as to mitigate or to eliminate the environmental hazards. These predictions thus calculated are superimposed over the baseline data to calculate the net impact on the environment after the proposed mine Project comes into production.

Air Emissions: The impacts on air environment from a mining activity depend on various factors like production capacity, machinery involved, operations and maintenance of various equipment and vehicle. Apart from these, there will be other activities associated viz transportation of mineral and waste, stocking facilities and dump management within the mine lease area that may contribute to pollution.

The air-borne particulate matter generated by quarrying operations and transportation is mainly PM10 and PM2.5, and emissions of sulfur dioxide (SO2) and oxides of nitrogen (NO2) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Furthermore, the loading, unloading, and transportation of rough stone, as well as wind erosion of the exposed area and movement of light vehicles, will cause pollution within a 500-meter radius of the project area due to quarrying activities. This has a cumulative impact on the ambient air environment around the project area.

Quantitative Estimation of Impacts on Air Environment: An attempt has been made to predict the incremental rise of various ground level concentrations above the baseline status in respect of air pollution due to proposed production of 9,01,561m3 of Rough Stone and 53,474m3 of gravel formation by the open-cast mechanized mining method.

The pollutants released into the atmosphere will disperse in the down wind direction and finally reach the ground at farther distance from the source. The concentration of ground level concentrations mainly depends upon the strength of the emission source and micrometeorology of the study area.

In order to estimate the ground level concentrations due to the emission from the proposed project, EPA approved Industrial Source Complex ISC AERMOD View Model has been employed.

The mathematical model used for predictions on air quality impact in the present study is ISC-AERMOD View-6.8.6. It is the next generation air dispersion model, which incorporates planetary boundary layer concepts.

The AERMOD is actually a modelling system with three separate components:

AERMOD (AERMIC Dispersion Model), AERMAP (AERMOD Terrain Preprocessor) and AERMET (AERMOD Meteorological Preprocessor).

Special features of AERMOD include its ability to treat the vertical in homogeneity of the planetary boundary layer special treatment of surface releases, irregularly shaped area sources, a plume model for the convective boundary layer, limitation of vertical mixing in the stable boundary layer, and fixing the reflecting surface at the stack base.

The AERMET is the meteorological preprocessor for the AERMOD. Input data can come from hourly cloud cover observations, surface meteorological observations and twice-a-day upper air soundings. Output includes surface meteorological observations and parameters and vertical profiles of several atmospheric parameters.

The AERMAP is a terrain preprocessor designed to simplify and standardize the input of terrain data for the AERMOD. Input data include receptor terrain elevation data. Output includes, for each receptor, location and height scale, which are elevations used for the computation of airflow around hills.

Salient features of the AERMOD model are given hereunder:

- ♣ Excavation operations are considered as area sources.
- ♣ Transportation of material on haulage roads has been considered as line source

The predicted ground level concentrations for study period computed using AERMOD model are plotted as isopleths.

Sources of Dust Emission:

The proposed mining is carried out by semi mechanized opencast method. The air borne particulate matter generated by ore handling operations, transportation and screening of ore is the main air pollutant. The emissions of sulphur dioxide (SO2), Oxides of Nitrogen (NOx) contributed by diesel operated excavation/loading equipment and vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions. Based on the various operations involved in the production of minerals, the various emission sources have been identified as given below.

a. Area sources.
b. Line sources.

Extraction of mineral from mine, are considered as area sources. Transportation of material from mining benches to various end points are considered as line sources. The impact of above sources on air environment is discussed below:

The other sources of air pollution are the dust generated during the movement of tippers on the haul road. Water tankers with spraying arrangement will be used for regular water sprinkling on the haul roads to ensure effective dust suppression. The tippers are well maintained so that exhaust smoke does not contribute abnormal values of noxious gases and un-burnt hydrocarbons.

Emission Details:

All the emissions discussed above are quantified for proposed maximum production of is 9,01,561m3 of Rough Stone and 53,474m3 of gravel formation by the open-cast mechanized mining method by the open-cast semi-mechanised mining method. The existing air quality levels are covered in the baseline scenario. Excavation, loading and transportation through tippers are the major sources, which are of significance. Therefore, the emissions considered for modeling are from drilling blasting, excavation & transportation rough stone.

The emissions are computed based on AP-42 emission factors. Operational hours, activity rate, wind speed and moisture content have been considered for estimation of emissions from point and area sources. For line source, apart from operational hours, activity rate, moisture, silt content and vehicle weight have been considered.

Predictions are carried out for the worst-case scenario of simultaneous operation of excavators (area sources) and tippers for transportation from mine pit to loading pit (line sources) over a distance of 500 m.

The number of working days has been taken at 300 days per year with 8 hours of operation/day, hence the concentrations predicted are considered to be the worst case. With control measures, the emissions have been taken at 30% of uncontrolled emissions for handling and 10% of uncontrolled emissions for transportation.

Meteorological Data: The meteorological data recorded continuously during the month of December 2024 – February 2025 on hourly basis on wind speed, wind direction and temperature has been processed to extract the 24- hourly mean meteorological data as per the guidelines of IMD and MoEF for application of AERMOD model. Stability classes computed for the mean hours is based on guidelines issued by CPCB on modelling. Mixing heights representative of the region have been taken from the available published literature.

Summary of Predicted Ground Level Concentrations: Ground level concentrations due to the mining activities have been estimated to know the incremental raise and extent of impact in the study area.

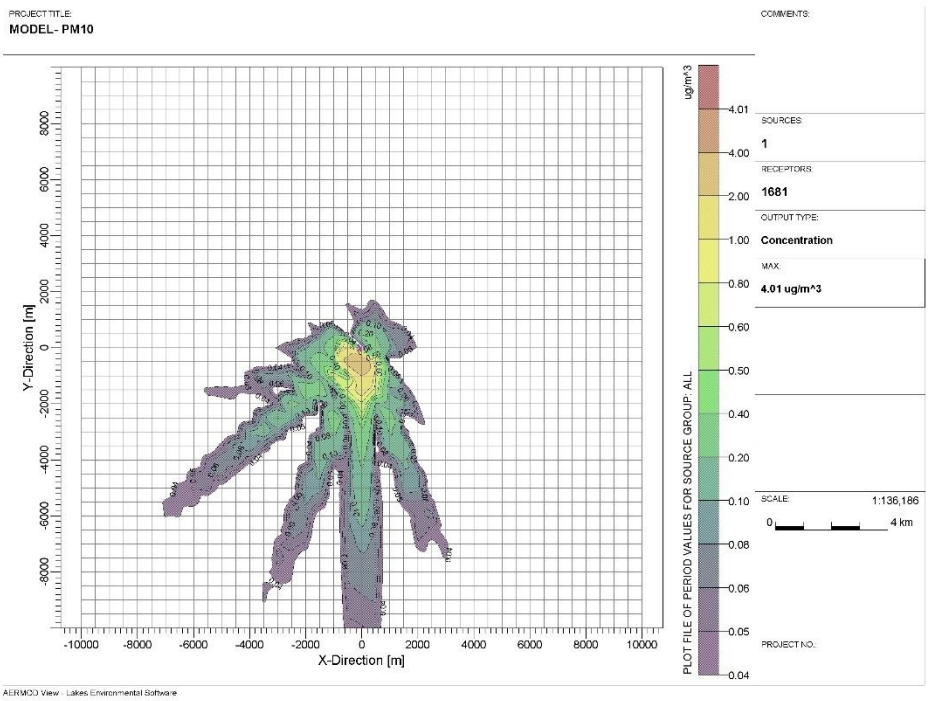


Figure 4-1Isopleth of GLC Prediction for PM10

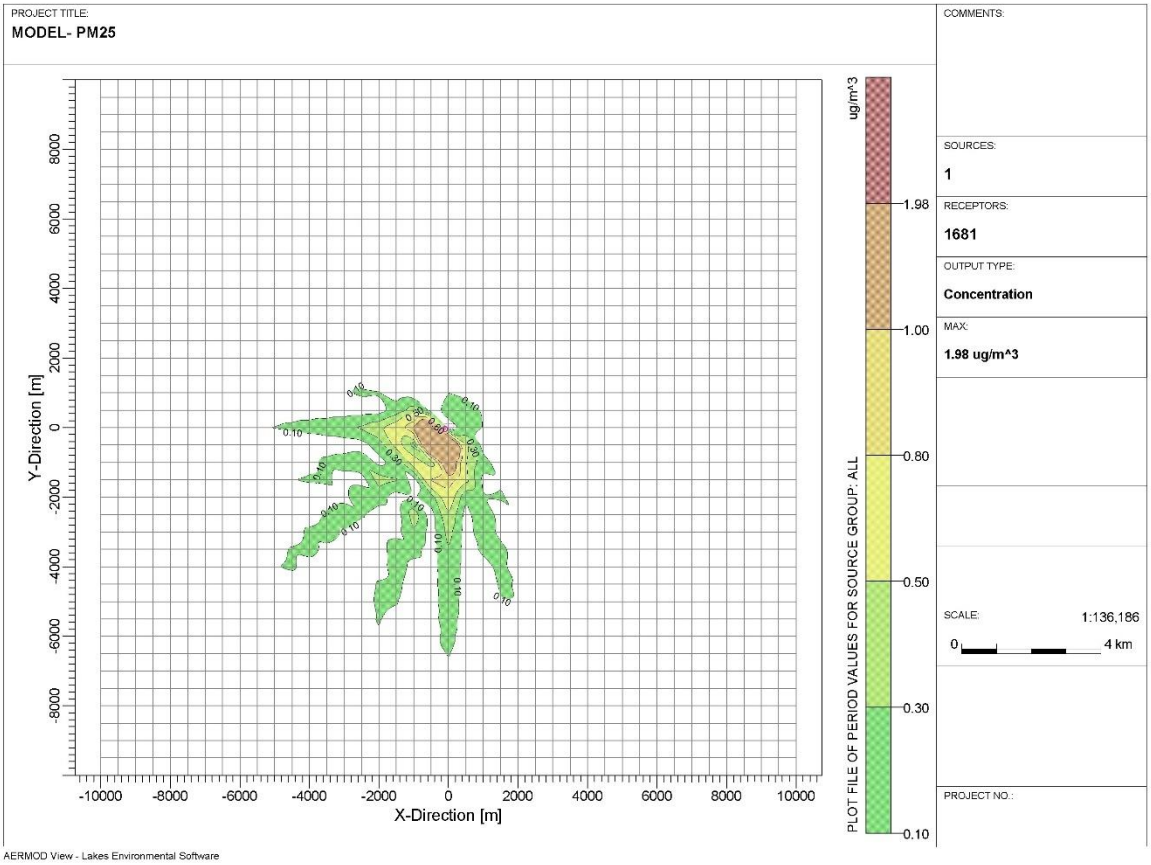


Figure 4-2Isopleth of GLC Prediction for PM2.5

Predicted Ambient Air Quality:

The post project Concentrations of PM10, PM2.5, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No. 4-4 & 4-5

Table 4-4 Concentrations of PM10 after Project Implementation

S. No.	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m^3
1.	Project Site	57.6	<1	57.6	100
2.	Poovilangapuram	48.7	<1	48.7	
3.	Echchanda	48.0	<1	48.0	
4.	Karaikandarkulam	43.2	<1	43.2	
5.	Arunachalapuram	45.5	<1	45.5	

6.	Melakalangal	49.4	<1	49.4	
7.	Vellalankulam	52.4	<1	52.4	

Table 4-5 Concentrations of PM2.5 after Project Implementation

S. No.	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m^3
1.	Project Site	27.4	<1	27.4	60
2.	Poovilangapuram	18.5	<1	18.5	
3.	Echchanda	19.2	<1	19.2	
4.	Karaikandarkulam	17.8	<1	17.8	
5.	Arunachalapuram	17.5	<1	17.5	
6.	Melakalangal	19.6	<1	19.6	
7.	Vellalankulam	22.2	<1	22.2	

The above result seems that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM10 are within the statutory limits in each case.

Cumulative Environmental Impact Assessment Study:

The cumulative production load of existing and proposed rough stone quarries within cluster is shown in below table.

Description		P1	P2
Name of the Quarry		Thiru. Senthur Pandian	Thiru. S. Subramanian
Geological Resources in m3	Rough stone	25,81,729	23,67,302
	Gravel	2,34,893	77,014
Mineable Reserves in m3	Rough stone	8,99,529	9,01,561
	Gravel	1,89,348	53,474
Five years plan period as in the approved mining plan	Rough stone	8,99,529	9,01,561
	Gravel	1,89,348	53,474
Production per day in m^3	Peak Production	613.8	368.32
Lorry Loads per day in Nos	-	154	153
Employment in Nos		12	34

Proposed Depth in meters		60 m	57 m
Status of the quarry		Existing	Proposed

Based on the above production quantities the emissions due to various activities in all the 2 mines (1 Existing + 1 Proposed) includes various activities like ground preparation, excavation, handling and transport.

Emission Estimation from Cluster

The AERMOD atmospheric dispersion modeling (AERMOD Cloud remote version) is used for assessment of incremental Ground level concentration (GLC) for the cluster area. Area source model taken into consideration taking into consideration of wet drilling and loading of the cluster mines. Further line source model was taken into consideration for transportation through haul road. Baseline meteorological studies were conducted for the period of December 2024 – February 2025. The following sources are considered.

<u>Emission sources & Quantification of the cluster area:</u>

Various point and non-point sources of emissions from Proposed Rough Stone and Gravel Quarry of Thiru. S. Subramanian is quantified and presented below:

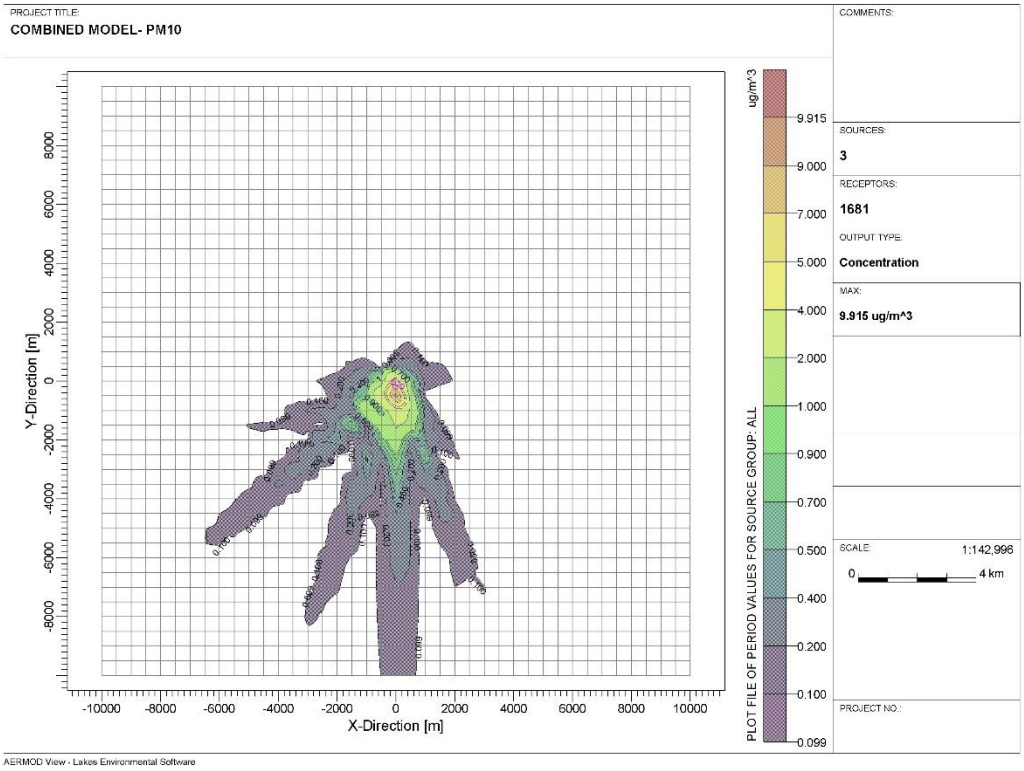


Figure 4-3 Isopleth of GLC Prediction – Cumulative for PM 10

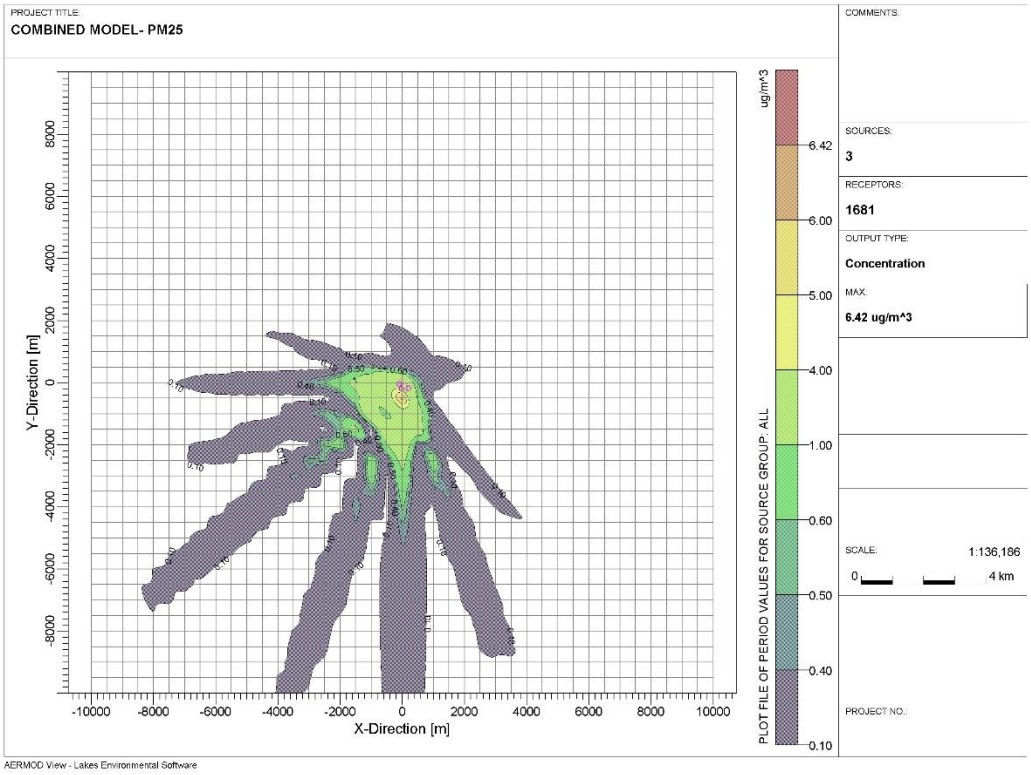


Figure 4-4 Isopleth of GLC Prediction – Cumulative for PM 2.5

Predicted Ambient Air Quality:

The post project Concentrations of PM10, PM2.5, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No. 7-1 & 7-2

Table 4-6 Concentrations of PM 10 after Project Implementation

S. No.	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m^3
1.	Project Site	57.6	<1	57.6	100
2.	Poovilangapuram	48.7	<1	48.7	
3.	Echchanda	48.0	<1	48.0	
4.	Karaikandarkulam	43.2	<1	43.2	
5.	Arunachalapuram	45.5	<1	45.5	
6.	Melakalangal	49.4	<1	49.4	
7.	Vellalankulam	52.4	<1	52.4	

Table 4-7 Concentrations of PM 2.5 after Project Implementation

S. No.	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m^3
1.	Project Site	27.4	<1	27.4	60
2.	Poovilangapuram	18.5	<1	18.5	
3.	Echchanda	19.2	<1	19.2	
4.	Karaikandarkulam	17.8	<1	17.8	
5.	Arunachalapuram	17.5	<1	17.5	
6.	Melakalangal	19.6	<1	19.6	
7.	Vellalankulam	22.2	<1	22.2	

The above results seem that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM10 are within the statutory limits. The mitigation measures undertaken in the mine for control of air pollution are given below.

- Wet drilling will be practiced in drilling operation.
- Water sprinkling will be done in haul roads & loading etc.
- The mines workers are provided with the dust masks.
- DG sets shall be periodically maintained as per manufacturer's specifications.

Table 4-8 Impact & Mitigation measures on Noise Environment and vibration

Aspect	Impact	Mitigation Measures
Loading and unloading, Transportation of the excavated mineral.	Usage of Equipments (Excavator – 82 dBA, Tipper - , Jack Hammer), Machinery and trucks used for transportation will generate noise. Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Number of vehicles will be increased due to the proposed mining activity hence vehicle may collate which may result in unwanted sound and can also cause impact on human health like breathing and respiratory system, damage to lung tissue, influenza or asthma.	• The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. • Awareness will be imparted to the workers once in six months about the permissible noise level and effect of maximum exposure to those levels. Adequate silencers will be provided in all the diesel engines of vehicles. • It will be ensured that all transportation vehicles carry a valid PUC Certificates. • Speed of trucks entering or leaving the mine will be limited to moderate speed (20km/hr) to prevent undue noise from empty vehicles. • The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipment. • It is proposed to plant 1200 Nos. of local species (Neem, Mandharai, Athi, Ashoka and Villam) to reduce the impact of noise in the study area. The development of green belts

		around the periphery of the mine will be implemented to attenuate noise. • The trucks will be diverted on two roads and a District Road to avoid traffic congestion. • Health checkup camps will be organized once in six months. • Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. • Provision of quiet areas, where employees can get relief from workplace noise.
Mining activities such as blasting, drilling and movement of machinery	Though vibration will be only felt by the people working inside the lease area it is usually undesired. Vibration may also cause flyrocks. It may frighten the birds and small insects in the lease area. However, it will be felt only for a short period.	• The DG set will be kept within the acoustic enclosure made by the stone blocks. • Drills will be equipped with sharp bits and wet drilling will be adopted. • A well-planned green belt is proposed for the mining to reduce noise level. • Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured. • Regular maintenance of the machineries and vehicles to reduce the noise level. • Use of ear muffs by the workers with occupational exposure to noise.

		• Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM • Control of fly rock and vibration by maintaining peak particle velocity within the standard as prescribed by the DGMS and MOEF & CC. • Shallow depth jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive. • Supervising blasting by competent and statutory Foreman/ Mines Manager.

4.2.1 Impact on Socio-economic Environment

Aspect	Impact	Mitigation Measures
Proposed implementation of Mining activity	Land acquisition for the implementation of the project may result in loss of assets, which in return will make the PAP to shift, losing their normal routine and livelihood	The proposed project is a Patta land and the land is vacant where there is no human settlement within 300m radius. Hence the project does not involve Rehabilitation and resettlement
Loading and Transportation of the mined-out mineral	The mining activities may cause dust emission, noise pollution thereby causing disturbance to the local habitat	No human activity is envisaged near the project site. The nearest human settlement is observed in Uchipothai, which is 600m away from the project site.
Grazing and Rearing activities in the nearby villages	The Grazing and rearing of local animals like Sheep, Goat and cows is observed in the nearby villages, which	It is proposed to use graveled road and nearest paved road and preferred not to use unpaved roads. In addition to that, the speed of trucks will be limited to 20km/hr to avoid any accidents

	may be affected due to the project as the movement of the vehicles may affect/injure the animals	
Employment opportunity	The project will improve the livelihood of the local people	After the development of the proposed mine, it will improve the livelihood of local people and also provide the direct and indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.
Corporate Environmental Responsibility	The proposed project will help in natural resource augmentation & Community resource development	As a part of CER, Rs. 5,00,000 will be allocated. The detailed agenda, which is to be executed, has been framed. The salient features of the programme are as follows: Provision of Library, Plantation of trees and other developmental facilities to the Panchayat Union Primary School, Uchipothai

Table 4-9 Impact & mitigation measures on Biological Environment

Aspect	Impacts	Mitigation Measures
Site Clearance	Loss of habitat due to site clearance which may lead to ecological disturbance.	The proposed mining lease is already a barren land hence no site clearance is required. Only few shrubs and herbs like parthenium sp., prosopis juliflora were present.
Planting of trees	Development of afforestation in the mine lease area will have a positive impact as the land was initially a barren.	7.5m safety distance will be provided all along the boundary of the mine lease area. This will attract avifauna thus enhancing the existing ecological environment.

Mining activities such as drilling, blasting etc.	The mining activity such as drilling, blasting etc. may affect the fauna due to noise and vibration	Sirens will be blown before blasting in the mines. To reduce noise levels, plantation will be done. Blasting will be carried out only in the allotted time.
	Accidental falling of animals	To prevent entry of animals, the mine lease surrounding area will be properly fenced with barbed wire.

Table 4-10 Impact & mitigation measures on occupational Health and safety

S. No	Aspect	Impact	Mitigation measure
1.	Risk due to the proposed mining	Accidents may occur in the mine area	Proper PPE kit (Safety jacket, Helmet, Safety Shoes, Gloves) etc will be provided to each and every employee in the mine lease concerning the safety of each labor
2.	Screening of Labors	Labors will be checked for health condition before employing them in mining activity	All the labors will be checked and screened for health before employing them After employing them, periodical medical checkups will be held once in every six months
3.	Blasting	Injury to the labours due to the blasting activity	Alarm system in the form of Siren will be engaged in the project site to caution the blasting activity. In addition to that, the blasting activity will be scheduled at particular time – 4.30 P.M to 5.30 P.M (or whenever required) so that the employees will be aware of the activity. Smoking will be banned in the site and sign boards will be displayed in various places at site

5 ANALYSIS OF ALTERNATIVES

5.1 Introduction

Analysis of alternative is a significant aspect in planning and designing any project. Cost benefit analysis should be work out along with other parameters while choosing an alternative in such a way that the production is maximum and the mining operation is environment friendly and cost effective. The mine plan and mine closure plan has been approved prior to submission of the Form-1 and PFR.

ToR issued by the SEIAA-TN vide ToR Identification No. TO25B0108TN5277761N Dated 26.04.2025. The study for alternative analysis involves in-depth examination of site and technology.

5.2 Analysis for Site Alternative

The proposed project is the mining of Rough Stone and Gravel Quarry and is proposed after prospecting the area. In other words, these can be implemented in the mineral available zone. Since the mining block has been allotted in principle by the State Government, there is no case for studying and exploring any other site as an alternative.

5.3 Alternatives for Mining Technologies

The open cast mining could be manual/semi-mechanized/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

Sr. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks
1.	Technology	Opencast semi mechanized mining	Opencast mechanized mining	Opencast mechanized mining is preferred
2.	Employment	Local employment.	Outsource employment	Local employment is preferred Benefits: Provides employment to local people along with financial benefits No residential building/ housing is required.
3.	Labour transportation	Public transport	Private transport	Local labors will be deployed from Uchipothai, Arunachalapuram, Melakalangal, Keelakalangal so they will either reach mine site by bicycle or by foot. Benefits: Cost of transportation of labors will be negligible

4.	Material transportation	Public transport	Private transport	Material will be transported through trucks/trolleys on the contract basis Benefits: It will give indirect employment.
5.	Water	Private Tankers	Ground water	Water will be supplied from private tankers

6 ENVIRONMENTAL MONITORING PROGRAM

6.1 Introduction

This chapter covers the planned environmental monitoring program. It also includes the technical aspects of monitoring the effectiveness of mitigation measures. Monitoring is important to measure the efficiency of control measures. Post project monitoring of environmental parameters is of key importance to assess the status of environment. The monitoring program will serve as an indicator for identifying environmental degradation due to operation of the project and help in selection of appropriate mitigation measures to safeguard the environment.

Regular monitoring is as important as control of pollution since the efficacy of control measures can only be determined by monitoring. The project proponent will carry out the post project environmental monitoring (PPM) and timely compliance report submission to various regulatory authorities.

Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environmental quality. The objectives of monitoring are to: -

- Verify effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Confirm statutory and corporate compliance; and
- Identify unexpected changes.

Table 6-1 Monitoring Schedule during mining

S. No.	Attributes	Parameters	Frequency	Location
1.	Ambient Air Quality at Mine Site & Fugitive Dust Sampling	PM 10, PM 2.5, SO_2, NO_X	Once in a Month	Project Site & Uchipothai
2.	Ground water Quality	Drinking Water Parameters, as per IS - 10500: 2012	Half yearly	Project Site & Uchipothai
3.	Surface Water Quality	Class will be assessed as per the CPCB Guidelines	Half yearly	Project Site & Uchipothai
4.	Soil Quality	(Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	Half yearly	Project Site & Uchipothai
5.	Noise Level Monitoring	Noise level in dB(A) Quarterly/half yearly	Half yearly	Project Site & Uchipothai

6.2 MEASUREMENT METHODOLOGY

Table 6-2 measurement Methodology

Ambient Air Quality	Ambient air quality will be monitored for SO_2, NO_x, PM_{10} and $PM_{2.5}$. The instruments like high volume air samplers and Respirable dust samplers would be used for this purpose. These parameters will be monitored as mentioned in the monitoring schedule previously.
Water Quality	Water quality analysis will be done quarterly and the monitored parameters include pH, Temperature, TDS, etc. as specified by SPCB from time to time.
Noise Monitoring	Noise level will be monitored in working environment mainly noise producing sources over the boundary and around the mining area.
Green Belt and Afforested area	Continuous vigilance and monitoring of green belt will be done for performance and survival rate of the saplings. Watch and ward personnel will properly guard the plantation. Provision will be made for fertilizers application and watering on schedule.
Socio-Economics	Socio-economic of the core and buffer zone details elaborated in Chapter-3.

Reports to be generated

The Project Proponent will maintain records of each test and its interpretation so as to formulate an adequate Environmental Management Plan. The set of records planned to be maintained by Project Proponent are given in below table 6.2.

Table 6-3 Important records to be maintained by PP

S. No.	Particulars
1	Monitoring results for Air, Water & Soil.
2	Records of slope failure, land erosion & drainage.
3	Plantation Records
4	Environmental and related standards/ norms
5	Records pertaining to statutory consents, approvals.
6	Periodic Medical examination (PME) records.
7	Complain register (Environmental pollution)
8	Records on water and electricity consumption
9	Periodic progress records.
10	Environmental Expenses Records

7 ADDITIONAL STUDIES

7.1 General

This chapter covers the details of the additional studies viz. Risk assessment, Disaster Management, Public Hearing, Rehabilitation and resettlement

7.2 Public Consultation

As the proposed mining project falls under 1(a), Category B1 – Cluster Mining, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Thenkasi District. The proceedings of the same will be incorporated in the Final EIA Report

7.3 Risk Assessment and Management

Mining and allied activities are associated with several potential hazards both to the employees and the public at large. A worker in a mine should be able to work under conditions that are adequately safe and healthy. At the same time the environmental conditions should be such as not to impair his working efficiency. The various safeguards to be taken to ensure the safety of the mine and that of employees are provided in the Mines Act, 1952. Risk involves the occurrence or potential occurrence of some accidents consisting of an event or sequence of events. The risk assessment study covers the following:

- Identification of potential hazard areas
- Identification of representative failure cases
- Assess the overall damage potential of the identified hazardous events and the impact zones from the accidental scenarios
- Assess the overall suitability of the site from hazard minimization and disaster mitigation point of view
- Furnish specific recommendations on the minimization of the worst accident possibilities
- Preparation of broad DMP, On-site and Off-site Emergency Plan, which includes Occupational Health and Safety Plan

The complete mining will be carried out under the management control and direction of a qualified mine manager holding a manager's certificate of competency.

Moreover, mining staff will be sent to refresher courses from time to time to keep them alert. However, following natural/industrial hazards may occur during normal operation:

- Accident due to explosives
- Accident due to heavy mining equipment; and
- In order to take care of above hazard/disasters, the following control measures will be adopted.

- All safety precautions and provisions of the Mine Act, 1952, the MMR, 1961 and the Mines Rules, 1955 will be strictly followed during all mining operations
- Entry of unauthorized persons will be prohibited
- Firefighting and first-aid provisions in the mine's 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
- Training and refresher courses for all the employees working in hazardous premises; under mines rules all employees of mines will have to undergo the training at a regular interval working of mine, as per approved plans and regularly updating the mine plans.
- Cleaning of mine faces will be regularly done.
- Handling of explosives, charging and blasting will be carried out by competent persons only.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- Suppression of dust on the haulage roads. Adequate safety equipment will be provided at explosive magazine
- Increasing the awareness of safety and disaster through competitions, posters and other similar drives. For any type of above disaster, a rescue team will be formed by training the mining staff with specialized training.

7.3.1 Identification of hazards in open cast mining

There are various factors, which can cause disaster in the mines. These hazards are as follows: Identification of Hazards in Opencast Mine is given in below,

- Drilling
- Blasting
- Overburden handling
- Heavy Machinery

Drilling:

The drilling is carried out using jack hammers with a diameter of hole is 32-36 mm up to 1.5m long drilling will be utilized. The breakages of drill rods may blast injuring the nearby personnel. These can be easily remedied as follows:

- Maintain and operating the equipment's as per the manufacturer's manual.
- Compressor is kept at a safe distance from the main operation area and operated, so that in the event of any disruption the personnel in the operating area are safe.

Blasting:

Most of the accidents from blasting occur due to the projectiles, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes as a result of certain special features of the local ground. Flying rocks are

encountered during initial and final blasting operations. Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.

The blasting is the predominating method of breaking rocks in various surface and underground mines. At the same time some damaging impacts on environment are evident: noise, gas, dust, fly rock and ground vibration.

The considering factor is most important for safety of natural objects in the vicinity of mining area.

The ground vibration parameters, crucial for safety of endangered objects have a significant correlation with charge weight and distance of blasting.

This study tried to associate the main vibration parameter, particle velocity with blasting parameters and properties of vibration medium.

- Precautionary Measures to Avoid Accidents due to Blasting
- The lessee is advised to store the explosives as per the Indian Explosive act, 1958
- The explosives to be used in mines being a small quantity, the district collector may be approached to keep the stocks not exceeding 5kgs at time or any other quantity permined by the concerned authorities in a portable magazine of S & B types.
- The lessee is advised to engage an authorized explosive agency to carry out proposed control blasting.
- The Proposed Control Blasting time at a day is proposed to 5PM to 6 PM.
- First Aid Box will be keeping ready at all the time.
- Necessary precautionary announcement will be carried out before the proposed Control Blasting operation.

Overburden handling

No overburden will be generated in the proposed project and side burden dump may cause and slides. High side burden dump created at the quarry edge may cause sliding of the side burden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property.

Heavy machinery

Most of the accidents during transport of tippers and other heavy vehicles are often attributable to mechanical failures and human errors.

7.3.2 Precautionary Measures to Prevent Accidents due to Trucks and Dumpers

All transportation within the main working shall be carried out directly under the supervision and control of the management.

The vehicles must be maintained in good condition and checked thoroughly at least once a week by the competent person authorized for the purpose by the Management.

Road signs shall be provided at each and every turning point especially for the guidance of the drivers at the night.

To avoid danger while reversing vehicles especially at the embankment and tipping points, all areas for reversing of lorries should as far as possible be made man free.

A statutory provision of the fences, constant education, training etc. will go a long Way in reducing the incidents of such accidents.

A Load consisting of large rocks must not be over the edge. This is unsafe and may damage equipment.

The movement of the dumpers will be governed under the Code of Traffic rule.

Storage of explosives

There will not be any storage of explosives during the operation of the quarry. The blasting will be done by contractors authorized by the Government.

Safety measures at site

- Adequate care has been taken in deciding the size of the bench for the working as well as ultimate pit.
- Adequate drainage system at the top of the pit and also on the benches shall be made to prevent erosion of the benches.
- The quarries will be protected by garland drains around the periphery for storm water drainage.

7.4 Disaster Management Plan:

7.4.1 Objective

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. For effective implementation of the disaster management plan, it should be widely circulated and personnel training through rehearsals/drills. The objective of the disaster management plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Effect the rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Identify any dead;
- Provide for the needs of relatives;
- Provide authoritative information to the news media;
- 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 effect, it is to optimize operational efficiency to rescue rehabilitation and render medical help and to restore normalcy.

EMERGENCY ORGANIZATION (EO):

It is recommended to setup an emergency organization. A senior executive (mine manager) who has control over the affairs of the mine would be heading the emergency organization. He would be designated as site controller. As per the general organization chart, in the mines, the mines manager would be designated as the Incident Controller (IC). The incident controller would be reporting to the site controller. Each incident controller, for him-self, organizes a team responsible for controlling the incidence with the personnel under his control. Shift In-charge would be the reporting officer, who would bring the incidence to the notice of the incidence controller and site controller. Emergency coordinators would be appointed who would undertake the responsibilities like firefighting, rescue, rehabilitation, transport and provide essential and support services. For this purposes, Security in-charge, personnel department, essential services personnel would be engaged. All these personnel would be designated as key personnel.

In each shift, electrical supervisor, electrical fitters, pump house in-charge and other maintenance staff would be drafted for emergency operations. In the event of power or communication system failure, some of staff members in the mine offices would be drafted and their services would be utilized as messengers for quick passing of communications. All these personnel would be declared as essential personnel.

EMERGENCY COMMUNICATION (EC):

Whoever notices an emergency situation such as fire, growth of fire etc. would inform his immediate superior and Emergency Control Center (ECC). The person on duty in the emergency control center would appraise the site controller. Site Controller verifies the situation from the incident controller of that area or the Shift In-charge and takes a decision about an impending on site emergency. This would be communicated to the entire incident controllers, emergency coordinators. Simultaneously, the emergency warning system would be activated on the instructions of the site controller.

EMERGENCY RESPONSIBILITIES:

The responsibilities of the key personnel are appended below:

Site Controller:

On receiving information about emergency, he would rush to emergency control center and take charge of ECC and the situations which all are given below:

Assesses the magnitude of the situation on the advice of incident controller and decides;

- Whether the affected area needs to be evacuated;

- Whether personnel who are at assembly points need to be evacuated;
- Declares Emergency and orders for operation of emergency siren;
- Organizes announcement by public address system about location of emergency;
- Assesses which areas are likely to be affected, or need to be evacuated or are to be alerted;
- Maintains a continuous review of possible development and assesses the situation in consultation with Incident Controller and other Key Personnel as to whether shutting the mine operation required and if evacuation of persons is required;
- Directs personnel for Rescue, rehabilitation, transport, fire, brigade, medical and other designated mutual support systems locally available, for meeting emergencies;
- Controls evacuation of affected areas, if the situation is likely to go out of control or effects are likely to go beyond the mine boundary, informs to District Emergency Authority, Police, Hospital and seeks their intervention and help;
- Informs the statutory authorities;
- Gives a public statement if necessary;
- Keeps record of chronological events and prepares an investigation report and preserves evidence; and
- On completion of On-Site Emergency and restoration of normalcy, declares all clear and orders for all clear warning.

Incident Controller:

- Assembles the incident control team;
- Directs operations within the affected areas with the priorities for safety to personnel; minimize damage to property and environment and minimize the loss of materials;
- Directs the shutting down the operations and areas likely to be adversely affected by the emergency;
- Ensures that all key personnel help is sought;
- Provides advice and information to the Fire and Security Officer and the Local Fire Services as and when they arrive;
- Ensures that all non-essential workers/staff of the affected areas evacuated to the appropriate assembly points, and the areas are searched for causalities;
- Has regard to the need for preservation of evidence so as to facilitate any inquiry into the cause and circumstances which caused or escalated the emergency;
- Co-ordinates with emergency services at the site;
- Provides tools and safety equipment to the team members;
- Keeps in touch with the team and advise them regarding the method of control to be used; and
- Keeps the Site Controller of Emergency informed of the progress being made.

Emergency Coordinator – Rescue, Fire Fighting

- On knowing about emergency, rushes to ECC;
- Helps the incident Controller in containment of the emergency;
- Ensure fire pumps in operating conditions and instructs pump house operator to ready for any emergency with standby arrangement;
- Guides the firefighting crew i.e. firemen, trained mine personnel and security staff;
- Organizes shifting the firefighting facilities to the emergency site, if required;
- Takes guidance of the Incident Controller for firefighting as well as assesses the requirements of outside help;
- Arranges to control the traffic at the incident area;
- Directs the security staff to the incident site to take part in the emergency operations under his guidance and supervision;
- Evacuates the people in the mine or in the nearby areas as advised by Site Controller;
- Searches for casualties and arranges proper aid for them;
- Assembles search and evacuation team;
- Arranges for safety equipment for the members of this team;
- Decides which paths the evacuated workers should follow; and
- Maintains law and order in the area, and if necessary, seeks the help of police.

Emergency Coordinator – Medical, Mutual Aid, Transport and Communication. In the event of failure of electric supply and thereby internal telephone, sets up communication point and establishes contact with the Emergency Control Center (ECC).

- Organizes medical treatment to the injured and if necessary, will shift the injured to nearby hospitals;
- Mobilizes extra medical help from outside, if necessary;
- Keeps a list of qualified first aiders of the mines and seek their assistance;
- Maintains first aid and medical emergency requirements;
- Makes sure that all safety equipment is made available to the emergency team;
- Assists Site Controller with necessary data and to coordinate the emergency activities;
- Assists Site Controller in updating emergency plan, organizing mock drills verification of inventory of emergency facilities and furnishing report to Site Controller;
- Maintains liaison with Civil Administration;
- Ensure availability of canteen facilities and maintenance of rehabilitation center;
- He will be in liaison with Site Controller/Incident Controller;
- Ensure transportation facility;
- Ensures availability of necessary cash for rescue/rehabilitation and emergency expenditure;

- Controls rehabilitation of affected areas on discontinuation of emergency; and
- Makes available diesel/petrol for transport vehicles engaged in emergency operation.

Emergency Coordinator – Essential Services:

He would assist Site Controller and Incident Controller;
Maintains essential services like Diesel Generator, Water, Fire Water, power supply for lighting;
Gives necessary instructions regarding emergency electrical supply, isolation of certain sections etc. to shift in-charge and electricians; and
Ensures availability of adequate quantities of protective equipment and other emergency materials, spares etc.

GENERAL RESPONSIBILITIES OF EMPLOYEES DURING AN EMERGENCY:

During an emergency, it becomes more enhanced and pronounced when an emergency warning is raised, the workers in-charge, should adopt safe and emergency shut down and attend any prescribed duty as essential employee. If no such responsibility is assigned, he should adopt a safe course to assembly point and await instructions. He should not resort to spread panic. On the other hand, he must assist emergency personnel towards objectives of Disaster Management Plan.

EMERGENCY FACILITIES:

Emergency Control Center (ECC): The Mine Office Block is identified as Emergency Control Center. It would have external Telephone, Fax, and Telex facility. All the Site Controller/ Incident Controller Officers, Senior Personnel would be located here. Also, it would be an elevated place.

The following information and equipment are to be provided at the Emergency:

Control Center (ECC):

- Intercom, telephone;
- Safe contained breathing apparatus;
- Fire suit/gas tight goggles/gloves/helmets;
- Hand tools, wind direction/velocities indications;
- Public address megaphone, hand bell, telephone directories;
- Mine layout, site plan;
- Emergency lamp/torch light/batteries;
- Plan indicating locations of hazard inventories, sources of safety equipment, work road plan, assembly points, rescue location vulnerable zones, escape routes;
- Hazard chart;
- Emergency shut-down procedures;

- Nominal roll of employees;
- List of key personnel, list of essential employees, list of Emergency Coordinators;
- Duties of key personnel;
- Address with telephone numbers and key personnel, emergency coordinator, essential employees; and
- Important address and telephone numbers including Government agencies, neighbouring industries and sources of help, outside experts, population details around the Mine.

Assembly Point:

Number of assemblies depending upon the mine location would be identified wherein employees who are not directly connected with the disaster management would be assembled for safety and rescue. Emergency breathing apparatus, minimum facilities like water etc. would be organized. In view of the size of mine, different locations should be ear marked as assembly points. Depending upon the location of hazard, the assembly points are to be used.

Emergency Power Supply:

Mine facilities are connected to power supply from the SEB. In the event of any grid supply failure, Diesel Generator will be provided at the mine, which is operated as soon as any power failure occurs. Thus water pumps, mine lighting and emergency control center, administrative building and other auxiliary services are connected to emergency power supply. In all the blocks flame proof type emergency lamps would be provided.

Fire Fighting Facilities:

First aid firefighting equipment suitable for emergency should be maintained in each operation areas of the mine as per statutory requirements.

Location of Wind Sock:

On the top of the administration block, windsocks would be installed to indicate direction of wind for emergency escape.

Emergency Medical Facilities:

Stretchers, gas masks and general first aid materials for dealing with chemical burns, fire burns etc. would be maintained in the medical center as well as in the emergency control room. Private medical practitioners help would be sought. Government hospital would be approached for emergency help.

First aid facilities would be augmented. Names of medical personnel, medical facilities in the area would be prepared and updated. Necessary specific medicines for emergency treatment of burns patients and for those affected by toxicity would be maintained.

Breathing apparatus and other emergency medical equipment would be provided and maintained. The help of nearby industrial managements in this regard would take on mutual support basis.

Ambulance:

An ambulance with driver availability in all the shifts, emergency shift vehicle would be ensured and maintained to transport injured or affected persons. Number of persons would be trained in first aid so that, in every shift first aid personnel would be available.

EMERGENCY ACTIONS:

Emergency Warning:

Communication of emergency would be made familiar to the personnel inside the mine and people outside. An emergency warning system would be established.

Evacuation of Personnel:

In the event of an emergency, unconnected personnel have to escape to assembly point. Operators have to take emergency shutdown procedure and escape. Time Office maintains a copy of deployment of employees in each shift. If necessary, persons can be evacuated by rescue teams.

All Clear Signal:

Also, at the end of an emergency, after discussing with Incident Controllers and Emergency coordinators, the Site Controller orders an all-clear signal. When it becomes essential, the site controller communicates to the district emergency authority, police and fire service personnel regarding help required or development of the situation into an Off-Site Emergency

GENERAL:

Employee Information:

During an emergency, employees would be warned by raising siren in specific pattern. Employees would be provided with information related to fire hazards, antidotes and first aid measures. Those who would designate as key personnel and essential employees should be given training to emergency response.

Co-ordination with Local Authorities:

Keeping in view of the nature of emergency, two levels of coordination are proposed. In the case of an On Site Emergency, resources within the organization would be mobilized and in the event extreme emergency local authorities help should be sought.

In the event of an emergency developing into an offsite emergency, local authority and District emergency Authority (normally the Collector) would be appraised and under his supervision, the Off Site Disaster Management Plan would be exercised. For this purpose, the facilities that are available locally, i.e. medical, transport, personnel, rescue accommodation, voluntary organizations etc. would be mustered. Necessary rehearsals and training in the form of mock drills should be organized.

Mutual Aid:

Mutual aid in the form of technical personnel, runners, helpers, special protective equipment, transport vehicles, communication facility etc. should be sought from the neighbouring industrial management's.

Mock Drills:

Emergency preparedness is an important aspect of planning in Industrial Disaster Management. Personnel would be trained suitably and prepared mentally and physically in emergency response through carefully planned, simulated procedures. Similarly, the key personnel and essential personnel should be trained in the operations.

Important Information

Important information such names and addresses of key personnel, essential employees, medical personnel, transporters address, address of those connected with Off Site Emergency such as Police, Local Authorities, Fire Services, District Emergency Authority should be prepared and maintained.

The Unit Head is in charge for disaster management and monitors all activities related to disaster management/risk assessment in case of any such situations.

Care and maintenance during temporary discontinuance:

In case, of any temporary closure or discontinuous of mining operations, the following steps are proposed.

a. Notice to be served to all concerned authority.

b. The mining pit area shall be covered by temporary fencing.

c. Watchman will be posted round the clock to prevent any unauthorized or inadvertent entry of public.

d. Works on stabilization of dumps to provided vegetal cover would be taken up.

e. Construction of garland or retaining walls around the dumps will be attempted.

f. Watering of plants in the afforested area will be considered.

g. All safety precautions shall be taken care off as per rule.

7.5 Progressive Mine Closure Plan

There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of the life of lease will be fenced to prevent inherent entry of public and cattles. Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle. Drilling will be carried out by wet drilling mode to control the dust propagation into the air. Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.

7.6 Slope Stability Study

The proposed quarry is a very small quarry and the production is also less. Opencast Semi-mechanized mining with a bench height of 5m and bench width of 5m and 45° Slope is proposed. The depth of mining is proposed as 57m (BGL), which is the ultimate pit limit. Also, there is no overburden since the entire mined out material will be utilized.

As far as technical factors are concerned, the following precautionary measures will be adopted:

- ♣ Strict adherence to DGMS norms
- ♣ Frequent inspection by Mines-in-charge/Mines Manager

7.7 Natural Resource Conservation

There are no natural resources within the premises. The conservation strategies for energy will be followed in the proposed mine lease area. The pollutants of the mine will be minimized by adopting appropriate mitigation measures as mentioned Chapter 4 to prevent the effects on nearest water bodies. No surface runoff from the project site will be let into the nearby waterbody.

7.8 Reclamation and Rehabilitation:

It is a fresh mining lease applied area. Reclamation and rehabilitation will be carried out at the end of the life of the mine. The mined-out pit is proposed to be used as small reservoir for storing much needed rainwater at the end of the life of the mine when the mine reaches its ultimate pit limit. Since the surrounding areas are dry and experiences low rainfall, any amount of storage of water will be beneficial for recharging the groundwater in the adjacent areas. Along the permanent roads and vacant places, afforestation is being carried out at present. Before closure of the mine, barbed fencing wire will be constructed to prevent inadvertent entry of cattle and human beings. A watchman (Security guard) will be posted around the clock to prevent inherent entry of public and cattle which are growing in and around the area

8 PROJECT BENEFITS

8.1 General

This chapter covers the benefits accruing to the locality, neighbourhood, region and nation as a whole. It brings out the details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

8.2 Improvements in the physical infrastructure

The opening of the proposed project will enhance the following physical infrastructure facilities in the adjoining areas:

a. Market: Generating useful economical resource for construction. Due to demand supply chain, excavated mineral (Rough stone & Gravel) will be sold in the market in the affordable price.

b. Infrastructure: The excavated rough stone and gravel will be used for Laying Roads, Building & Construction Projects, Bridges.

c. Enhancement of Green Cover & Green Belt Development: As a part of reclamation plan, native tree species will be planted along the safety boundary (0.67.5 Ha) of the mine lease area. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 675 numbers of native species along with some fruit bearing and medicinal trees during the mining plan period.

8.3 Improvements in the Social Infrastructure

The mining in the area will create rural employment. During site visit, it has been observed that the economic conditions of the villages in the study area is quite normal. After the development of the proposed mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The rough stone and gravel for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, Rs. 8 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programme are as follows:

Provision of Library, Plantation of trees and other developmental facilities to the Panchayat Union Primary School, Uchipothai

8.4 Employment potential – Skilled; Semi-skilled and unskilled

The proposed project will create direct and indirect employment within nearby areas, depending upon the availability of skilled and unskilled manpower. During mining, about 34 people will be employed.

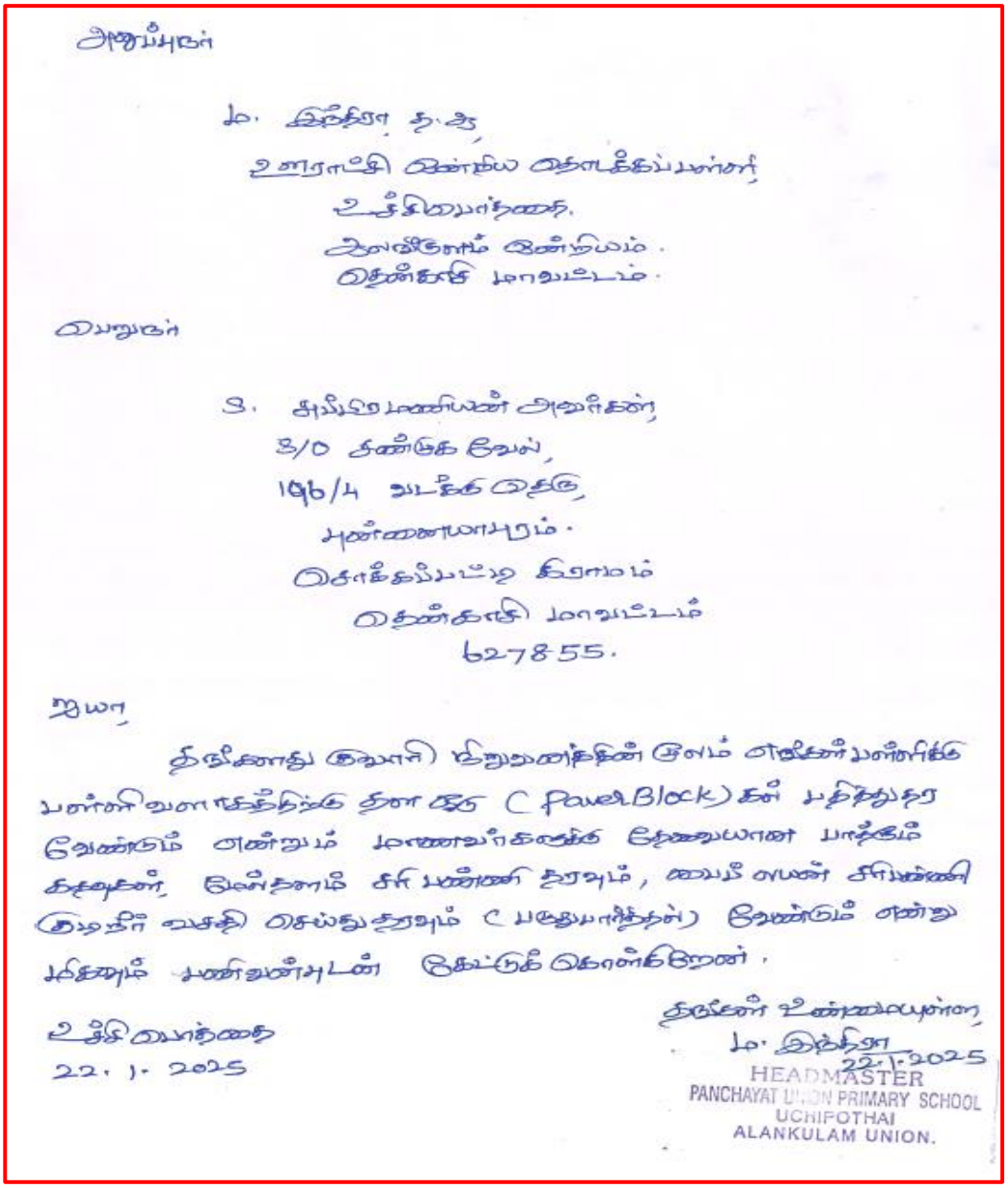
8.5 Other tangible benefits

As mentioned above, the project will have employment & trade opportunities with the inception of the quarrying activities. Thus, these considerable employment & trade opportunities will eventually result in appreciable economic benefits to the local people & businesses/contractors.

8.5.1 Corporate Social Responsibility

The CER funds will be utilised for the following activities to Panchayat Union Primary School, Uchipothai

S. No.	Proposed CER Activities	Cost in Lakhs
1	♣ Plantations inside and outside the school premises ♣ Laying of Paver Block ♣ Providing doors to the toilets, refurbishing the roof, repairing pipelines and providing RO system ♣ Providing books to the library ♣ Maintenance of the toilets for the entire lease period	10.00
	Total CER Cost	10.00



அனுப்புநர்

ம. இந்திரா த.ஆ,
ஊராட்சி ஒன்றிய தொடக்கப்பள்ளி,
உச்சிமலைப்புதூர்.
ஆலங்குளம் ஒன்றியம்.
தென்காசி மாவட்டம்.

பெறுநர்

இ. தங்கமணியன் அவர்கள்,
த/பெ தண்டுக ரேவல்,
196/4 மடத்து தெரு,
புன்னையாபுரம்.
தொகுக்கப்பட்ட கிராமம்
தென்காசி மாவட்டம்
627855.

ஐயா,

தங்களது குவாரி கிறுமனைக்கின் ரூபம் எங்கள் பள்ளிக்க பள்ளி வளாகத்திற்க்க தான சுற்று (Fence Block) கள் பதித்துதர வேண்டும் என்றும் மாணவர்களுக்கு தேவையான பாத்தும் கதவுகள், மின்சாரம் சீர் பண்ணி தரவும், மைய எண் சீரமைத்து தடையீர் வசதி செய்துதரவும் (பழுதுபார்த்தல்) வேண்டும் என்று மிகவும் பணிவன்புடன் கேட்டுக் கொள்கிறேன்.

தங்கள் உண்மையுள்ள,
ம. இந்திரா
22.1.2025

உச்சிமலைப்புதூர்
22.1.2025

HEADMASTER
PANCHAYAT UNION PRIMARY SCHOOL
UCHIPOTHAI
ALANKULAM UNION.

Figure 8-1 Copy of letter from Panchayat Union Primary School, Uchipothai

9 ENVIRONMENTAL COST BENEFIT ANALYSIS

As per EIA Notification 2006 (amended from time to time), this chapter of the 'Environmental Cost Benefit Analysis' is applicable only if it is recommended at the Scoping stage. However, as per the standard TORs awarded by the (EAC), the Environmental Cost Benefit Analysis is not asked for and hence has not been prepared

10 ENVIRONMENTAL MANAGEMENT PLAN

10.1 Introduction

This chapter will provide information about Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP for the entire mining phase. This chapter will also describe the proposed post-monitoring scheme for effective implementation of the mitigation measures.

10.2 Administrative and Technical Setup

The project proponent has taken extensive measures to delineate the environmental monitoring plan for compliance of various environmental regulations. The Environment Management Plan (EMP) will consist of all mitigation measures for each component of the environment due to the activities increased during the entire life cycle to minimize adverse environmental impacts resulting from the activities of the project.

Since this is a very small quarry, the mines in-charge will take care of all environment related aspects. He will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level. The action plan for monitoring consists of monitoring of following environmental components.

- 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.

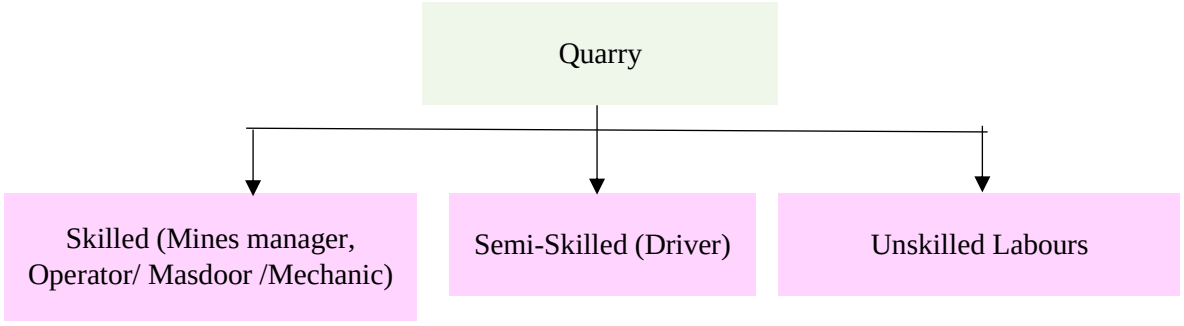


Figure 10-1 Organization Chart

Table 10-1Detailed Environmental Management Plan

S. No	Impacts on Environment	Activity /Aspect	Anticipated impacts	Mitigation measures
1.	Air	Fugitive emissions during operation activity	Due to quarrying activity, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.	Trees will be planted along the safety distance of the Mine Lease area. Water will be sprinkled in the site as dust suppression measure. Sharp drill bits will be used for drilling and regrinding will be done periodically to minimize the generation of dust. Wet drilling to suppress the dust emission from drill machine
			Blasting of explosive may result in increase of nitrogen oxides, which may get diluted by the wind	Controlled blasting and optimization of use of explosive energy will help in reducing the above emissions
		During Loading	Dust emission during loading operation	Latest loading equipment like hydraulic excavators of large capacity will be used with dumpers. This reduces the number of buckets to fill from height and thus comparatively less dust generation
		During transportation	Dust emission during transportation	All the haulage roads including the main ramp from crusher to mines pit will be kept wide, leveled, compacted and properly maintained and watered regularly during the shift operation to prevent generation of dust due to movement of dumpers, and other vehicles.
				Periodic air quality survey will be carried out to monitor the changes consequent upon mining activities as per the norms of TNPC Board.
2.	Water	Wastewater generation	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labors	Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater

		Surface water runoff due to rain	Improper management of surface runoff may pollute the nearest waterbody	Storm water drains will be provided. Rainwater harvesting pits will be proposed to capture the surface run-off
3.	Noise	Mining activities like drilling, blasting, loading and transportation	Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Apart from Mining activities like drilling, blasting may generate noise	Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas
4	Vibration	Ground Vibration and Fly Rock Control	The quarrying activity such as drilling and blasting may cause ground vibration, which in turn can disturbance to the local public	Controlled blasting using delay detonators will be carried out to maintain the PPV value well within the prescribed standards of DGMS. Drilling and blasting will be carried under the supervision of qualified persons.
4.	Land	Improper management of Storm water Runoff	Storm water Runoff may result in Soil Erosion	Garland drainage of 1m x 1m will be provided to avoid storm water run- off.
4.	Social Responsibility	Mining workers	Unhygienic site sanitation facilities may cause health damage to workers.	The objective is to ensure health and safety of the workers with effective provisions for the basic facilities of sanitation, drinking water, safety of equipments or machinery etc. The following will be done in the site ✓ By complying with the safety procedures, norms and guidelines (as applicable) as outlined in the National Building Code of India, Bureau of Indian Standards. ✓ Provide adequate number of decentralized latrines and urinals ✓ Providing Septic tank along with Soak pit arrangement ✓ Providing First Aid room, conducting frequent health checkups to labor and conducting free medical camps ✓ Providing safety helmet, Gloves, Jacket & Boots

				✓ Providing measures to prevent fires. Firefighting extinguishers and buckets of sand will be provided in the construction site
6.	Building materials resource conservation	Building Material consumption	Use of farfetched construction materials than the locally available construction materials may lead to over exploitation of natural resources & increase in carbon footprint.	• Use of locally available construction materials.

10.3 Environmental Policy

- The Project Proponent has stipulated a well-defined Environmental policy by which the lessee is committed to conducting business with a strong environmental conscience towards the community, customers, and employees. The Environment policy is given as below.
- The Environment policy of "Rough Stone and Gravel Quarry of Thiru. S. Subramanian is that the rules and commitment are driven towards conservation of the environment.
- The lessee is committed to efficient use of natural resources based on the reduce, recycle and reuse method.
- The project is committed to the identification of possible impacts and will take the necessary management steps to mitigate the impacts.
- Environment performance will be regularly monitored and reported for continual improvement of our environment and health performance.

Table 10-2 Budgetary allocation

Activities	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	0.22	0.22
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	5.00	0.25
	Muffle blasting – To control fly rocks during blasting	0.00	0.05
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	1.00	0.20
	No overloading of trucks/tippers/tractors	0.00	0.05
	Stone carrying trucks will be covered by tarpaulin	0.00	0.10
	Enforcing speed limits of 20 km/hr within ML area	0.12	0.01
	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.05
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	0.00	0.88
	Installing wheel wash system near gate of quarry	0.20	0.05
Sub-Total (A)		**6.54**	**1.86**
Noise Environment	Provision for Portable blaster shed	0.30	0.02
Sub-Total (B)		**0.30**	**0.02**

Waste Management	Provision for domestic waste collection and disposal through authorized agency	0.20	0.10
	Installation of dust bins	0.05	0.02
Sub-Total (C)		**0.25**	**0.12**
Mine Closure	Plantation inside ML area (550 Nos.)	0.68	0.14
Sub-Total (D)		**0.68**	**0.14**
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	0.05	0.01
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	0.00	0.50
	Workers will be provided with Personal Protective Equipment's	0.34	0.03
	Health checkup for workers will be provisioned	0.00	0.17
	First Aid facility Provision	0.00	0.04
	Signage & boards for safety precautions	0.05	0.01
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles / HEMMs. Flaggers will be deployed for traffic management	0.44	0.01
	Installation of CCTV cameras in the mines and mine entrance	0.15	0.02
Sub-Total (E)		**1.03**	**0.80**
Grant Total (A+B+C+D+E)		**8.80**	**2.94**

Total EMP Cost for 5 years is 25.04 lakhs

i.e., Rs.8.80 Lakhs of Capital Cost + Rs.16.25 Lakhs of Recurring Cost

(For 5 Years)

11 SUMMARY AND CONCLUSION

11.1 Prelude

This chapter gives the overall summary of the proposed Rough Stone and Gravel Quarry at S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District (Cluster Area: 8.67.5 Ha).

11.2 Project Overview

Table 11-1 Project Overview

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1.</td><td>Proponent Name</td><td>Thiru. S. Subramanian</td></tr>
<tr><td>2.</td><td>Proposed project</td><td>Rough Stone & Gravel Quarry of Thiru. S. Subramanian</td></tr>
<tr><td>3.</td><td>Extent</td><td>4.41.0 Ha and the cluster area within 500 m radius including the proposed mine is 8.67.5 Ha > 5 Ha</td></tr>
<tr><td>4.</td><td>Location</td><td>S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu</td></tr>
<tr><td>5.</td><td>Co-ordinates of the project site</td><td>
<table>
<tr><th>S. No.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>5.</td><td>09° 02' 11.42"N</td><td>77° 29' 32.60"E</td></tr>
<tr><td>6.</td><td>09° 02' 20.29"N</td><td>77° 29' 36.64"E</td></tr>
<tr><td>7.</td><td>09° 02' 19.77"N</td><td>77° 29' 41.40"E</td></tr>
<tr><td>8.</td><td>09° 02' 13.67"N</td><td>77° 29' 41.40"E</td></tr>
</table>
</td></tr>
<tr><td>6.</td><td>Topography</td><td>Plain Terrain</td></tr>
<tr><td>7.</td><td>Site Elevation above MSL</td><td>≃ 128 m from above MSL</td></tr>
<tr><td>8.</td><td>Topo Sheet No.</td><td>58 G/08</td></tr>
<tr><td>9.</td><td>Minerals of Mine</td><td>Rough Stone & Gravel</td></tr>
<tr><td>10.</td><td>Proposed production in m^3</td><td>9,01,561 m^3 of Rough Stone and 53,474 m^3 of Gravel</td></tr>
<tr><td>11.</td><td>Ultimate Depth of mining</td><td>57m (BGL)</td></tr>
<tr><td>12.</td><td>Method of Mining</td><td>Opencast, Semi-Mechanized Mining with a bench height of 5m and bench width of 5m is proposed</td></tr>
<tr><td>13.</td><td>Drilling/Blasting</td><td>Drilling and controlled Blasting is proposed</td></tr>
<tr><td>14.</td><td>No. of Working days</td><td>300 Days</td></tr>
<tr><td>15.</td><td>Water requirement & Source</td><td>5.5 kLD and will be sourced from local vendors</td></tr>
<tr><td>16.</td><td>Manpower</td><td>34 Nos.</td></tr>
<tr><td>17.</td><td>Project Cost</td><td>Rs. 124 Lakhs</td></tr>
<tr><td>18.</td><td>Mining Plan Approval</td><td>Mining Plan approved by Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc.No.M1/177/2024, dated 26.12.2024</td></tr>
</table>

19.	Safety Zone	Out of 4.41.0 Ha, 0.67.5 Ha will be maintained as a Safety Zone during mining operations.
20.	Ground water level	78 m BGL

Table 11-2 Environmental Settings of the Project

S. No.	Particulars	Details
1.	Nearest Highway	(NH-744) Tenkasi – Tirumangalam – 16 km (NW) (SH-41) Tirunelveli - Sankarankovil Road – 11.5 km (NE)
2.	Nearest Railway Station	Pambakovil Shandy – 12.2 km (NW)
3.	Nearest Airport	Tuticorin – 67.8 km, SE
4.	Nearest Port	Tuticorin - 72 km, SE
5.	Nearest Village	Melakalangal – 2.11m, NE
6.	Water bodies	Odai - 256m (NE) Odai - 280m (W) Karisalkulam Kanmoi - 354m (SE)
7.	Reserved Forest	Uthumalai R.F - 8.17 km (SE)
8.	Eco Sensitive Zone and Wildlife Sanctuary (Notified)	Nellai Wildlife Sanctuary – 17.11 km (NW)
9.	Archaeological important places	Nil within 10 km radius
10.	Defense Installations	Nil within 10 km radius
11.	Nearest Port	Nil within 10 km radius
12.	Seismic Zone	Nil within 10 km radius

11.3 Baseline Status

Season: Post-Monsoon

Period of Collection: December 2024 – February 2025

Number of Monitoring Locations

Parameters	No. of Monitoring Locations
Meteorology	01
Ambient Air Quality	07
Surface Water Quality	02

Ground Water Quality	07
Ground Water Level	02
Noise Level	07
Soil Quality	07

Meteorological Parameters

Parameters	Min. Value	Max. Value	Mean Value
Temperature (°C)	17	35.9	27.3
Wind Speed (m/s)	1	8.8	2.9
Relative Humidity (%)	33.9	98.1	71.8
Solar Radiation (W/m^2)	144.38	164.9	152.3

Rainfall Data:

	Total rainfall (mm)	No. of Rainy Days	Average annual rainfall (mm)
Rainfall	1.1	55	815

Predominant wind direction during monitoring period: North East

Ambient Air Quality

Core Zone	Pollutant	Unit	Min	Max	Mean	Standards
Core Zone	PM10	Micro Gram per Meter Cube	45.0	69.0	57.6	100
Core Zone	PM2.5	Micro Gram per Meter Cube	21.4	32.8	27.4	60
Core Zone	SO2	Micro Gram per Meter Cube	5.1	7.4	6.3	80
Core Zone	NOx	Micro Gram per Meter Cube	7.9	11.6	9.3	80

Buffer Zone	Pollutant	Unit	Min	Max	Mean	Standards
Buffer Zone	PM10	Micro Gram per Meter Cube	38.5	59.2	48.9	100
Buffer Zone	PM2.5	Micro Gram per Meter Cube	17.5	28.4	22.9	60
Buffer Zone	SO2	Micro Gram per Meter Cube	3.7	7.7	5.7	80
Buffer Zone	NOx	Micro Gram per Meter Cube	6.8	12.6	9.7	80

Ground Water Quality

Buffer Zone	Pollutant	Unit	Observed Value		Standard Desirable Limits	Standard Permissible Limits
			From	To		
Buffer Zone	pH	-	7.31	8.10	6.5	8.5
Buffer Zone	TDS	Micro Gram per Litre	366	840	500	2000
Buffer Zone	Total Hardness	Micro Gram per Litre	201	442	200	600
Buffer Zone	Chlorides	Micro Gram per Litre	120	268	250	1000
Buffer Zone	Fluoride	Micro Gram per Litre	0.36	0.62	1	1.5
Buffer Zone	Iron	Micro Gram per Litre	0.05	0.13	0.3	No relaxation

Core Zone	Pollutant	Unit	Observed Value		Standard Desirable Limits	Standard Permissible Limits
			From	To		
Core Zone	pH	-	7.53	7.53	6.5	8.5
Core Zone	TDS	Micro Gram per Litre	140	140	500	2000
Core Zone	Total Hardness	Micro Gram per Litre	62.2	62.2	200	600
Core Zone	Chlorides	Micro Gram per Litre	45.3	45.3	250	1000
Core Zone	Fluoride	Micro Gram per Litre	0.27	0.27	1	1.5
Core Zone	Iron	Micro Gram per Litre	0.13	0.13	0.3	No relaxation

Ground Water Level (Phreatic Surface)

motoring Location	Range of Water Table Pre-monsoon Season (in m below ground level)		Range of Water Table Post-Monsoon Season (in m below ground level)	
Buffer Zone	**From (Pre-monsoon)**	**To (Pre-monsoon)**	**From (post-monsoon)**	**To (post-monsoon)**
Buffer Zone	**74**	**75**	**77**	**78**

motoring Location	Range of Water Table Pre-monsoon Season (in m below ground level)		Range of Water Table Post-monsoon Season (in m below ground level)	
CORE ZONE	From (Pre-monsoon)	To (Pre-monsoon)	From (Post-monsoon)	To (Post-monsoon)
CORE ZONE	74	75	77	78

Noise Level

Monitoring Location	Category	Observed Noise Level(dB(A))				Prescribed Standard(dB(A))	
Buffer Zone		Day Time Level		Night Time Level		Day Time Level	Night Time Level
		From	To	From	To		
Buffer Zone	Residential area	46.1	52.1	38.6	41.9	55	45
Monitoring Location	Category	Observed Noise Level(dB(A))				Prescribed Standard(dB(A))	
Buffer Zone		Day Time Level		Night Time Level		Day Time Level	Night Time Level
		From	To	From	To		
Core	Industrial area	53.1	53.1	40.6	40.6	75	70

Soil Quality

Monitoring Location	Soil Texture	Particle Size Distribution (%)			Water Holding Capacity (%)	Porosity (%)
		Sand	Silt	Clay		
Buffer Zone	Clay	6.26	46.38	51.14	40	43.8
Monitoring Location	Soil Texture	Particle Size Distribution (%)			Water Holding Capacity (%)	Porosity (%)
		Sand	Silt	Clay		
Core Zone	Loam	2.53	50.75	46.73	42	28.6

Chemical Properties

Monitoring Location	Criteria Parameter	Observed Value		Unit	Permissible Standard
Buffer Zone		From	To		
Buffer Zone	Phosphorus	0.8	4.20	mg	-

Monitoring Location / Buffer Zone	Criteria Parameter	Observed Value From	Observed Value To	Unit	Permissible Standard
Buffer Zone	Potassium	226	539	mg	-
Buffer Zone	Nitrogen	124	320	mg	-

Monitoring Location / Core Zone	Criteria Parameter	Observed Value From	Observed Value To	Unit	Permissible Standard
Core Zone	Phosphorus	4.20	4.20	mg	-
Core Zone	Potassium	404	404	mg	-
Core Zone	Nitrogen	320	320	mg	-

11.4 Anticipated Impacts and mitigation measures

The potential impacts and appropriate mitigation measures are listed below:

Table 11-3Anticipated impacts & suggestive mitigation measures

S. No.	Potential Impact	Mitigation Measures
1.	The main impact in the air environment is dust emission during various mining activities such drilling, blasting, excavation, loading and transportation. The dust emission may affect the quality of ambient air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health	Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions. To control the emissions regular preventive maintenance of equipment will be carried out on contractual basis. Plantation will be carried out along approach roads & mine premises.

2.	Waste water will be generated due to mining activity and from other domestic activities. These may contaminate the ground water leading to ground water. The mining activity may affect the ground water table	No waste water will be generated from the mining activity of minor minerals as the project only involves lifting of over burden from mine site. The wastewater generated from the domestic activity will be disposed off safely through the proposed septic tank. Mining will not intersect ground water table. Hence the water table will not be impacted due to the proposed project
3.	Noise will be generated in the mine area during various mining activities such as blasting, drilling, excavation. During transportation of the mined-out mineral, there may be noise generation due to the movement of vehicles. This may impact the health condition of the workers by creating headache	Periodical monitoring of noise will be done. No other equipment except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site. Noise generated by this equipment shall be intermittent and does not cause much adverse impact. Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrests dust.
4.	Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste	he 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.
5.	During mining activities, there are chances of workers getting health issues or may be prone to accidents	Dust masks will be provided as additional personal protection equipment to the workers working in the dust prone area. Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation. Worker's health related problem if any, will be properly addressed.

11.5 Environmental Monitoring program

A monitoring programme for all the physical environment, which includes Ambient Air Quality, Surface & Ground Water & Wastewater Quality and Noise as per CPCB/MoEF&CC/Tamil Nadu Pollution Control Board (TNPCB) shall be maintained.

11.6 Disaster Management Plan

No high-risk accidents are anticipated as it is small scale mechanized Quarry with essential light machinery. The area is not prone for landslides, seismic activities, subsidence, floods, inundation etc. As there are no rivers and habitation in

the vicinity of probable disaster from the mine lease area. Elaborate description in respect of Risk Assessment and disaster Management plan are detailed in Chapter – 7.

11.7 Project benefits

The proposed project benefits the local community by providing them employment opportunity. Total 34 Nos. will be employed in the proposed quarrying activity. It also provides indirect job opportunity to many people, thereby improving the standard of living. Quarrying activity produces materials gravel, rough stone, sand which are used in construction and other industries, thereby contributing to the economic development of the local region. CER fund of Rs. 5 Lakhs will be used for the development of school in the study area.

11.8 Conclusion

To carry out the EIA study, 10km buffer zone was considered around the proposed site. Studies were conducted within the buffer zone, to obtain the information regarding the existing status of environment, for predicting the impacts if any due to proposed expansion activity and EMP regarding the project.

The studies done on different environmental parameters mandated by CPCB/ IS10500:2012/NAAQMS for noise, water, soil and air.

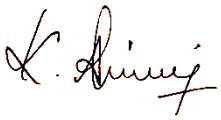
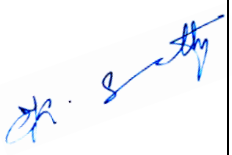
Appropriate models and techniques were used to predict the impact of the proposed project and to minimize impacts at every level of development, mitigation measures were suggested.

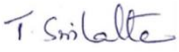
It can be concluded on a positive note that after the implementation of the mitigation measures and environmental management plans, the proposed project would result in minimal and controlled impacts during the operational phase.

12 DISCLOSURE OF CONSULTANT

In order to assess the potential environmental impacts due to the proposed *Rough Stone and Gravel Quarry at S. F. No. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/1 over an extent of 4.41.0 Ha in Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District (Cluster Area: 8.67.5 Ha)*, the project proponent has engaged M/s. Global Mining Solutions, Salem to undertake EIA study. The nature of consultancy service rendered covers terrestrial environmental assessment.

Table 12-1 Declaration of Experts

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and Date
1	*AP*	*Dhanalakshmi Ramanathan*	*Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation measures for air pollution.* *Period: December 2024 to February 2025.*	
2	*WP*	*Abirami Kaliaperumal*	*Assessment of existing water quality, impact of the project on surface and ground water quality, suggested mitigation measures for minimizing the impact.* *Period: December 2024 to February 2025*	
3	*SHW*	*Ramadoss N*	*Assessment of waste generated from the project, suggested waste management practices.* *Period: December 2024 to February 2025*	
4	*SE*	*Sarasvathy K*	*Baseline SE studies. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan.* *Period: December 2024 to February 2025*	

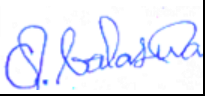
5	*EB*	*Saravanan S*	*Baseline data collection of related to ecology of the area.* *Period: December 2024 to February 2025*	
6	*HG*	*Ravinthiran N*	*Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area.* *Period: December 2024 to February 2025*	
7	*AQ*	*Srilatha Thiruveedhula*	*Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.* *Period: December 2024 to February 2025*	
8	*NV*	*Dhanalakshmi Ramanathan*	*Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.* *Period: December 2024 to February 2025*	
9	*LU*	*Srilatha Thiruveedhula*	*Preparation of land use map based on satellite imagery. Land use classification and analysis. Impact prediction of the project on the surrounding land environment.* *Period: December 2024 to February 2025*	

10	*RH*	*S.V. Prashant*	*Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the worker.* *Period: December 2024 to February 2025*	
11	*SC*	*Shisupal Sing*	*Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil.* *Period: December 2024 to February 2025*	
12	*GEO*	*Valliappan Meyyappan*	*Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area.* *Period: December 2024 to February 2025*	

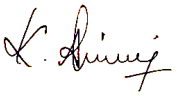
TM- EC

S.No	Name of TM (EC)	Sector(s) proposed	Approved (to work under)	Period of involvement	Type of work	Signature
1.	Abirami Kaliyaperumal	1	Manikandan Manickam	*Period: December 2024 to February 2025*	Associated with EIA Coordinator in overall preparation of Draft EIA/EMP report.	

TM- FAE:

S. No	Name of TM (FAE)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature
1	Kamaraj S	LU	Srilatha Thiruveedhula	Involved in Final EIA Report a Team Member In overall EIA Preparation	Associated with Experts in preparing Land use map based on satellite imagery, Land use classification and analysis, Impact prediction on surrounding land environment.	
		HG	Ashok Kumar Rajagopal	*Period: December 2024 to February 2025*	Associated with Experts in studying hydrogeological pattern of study area, Studying ground water and the impact of the project on ground water	
2	B.J.Sampatkkumar	SE	Saraswathy K	*Period: December 2024 to February 2025*	Assisted by the Expert in preparation of socio-economic report.	
		SC	Shishupal Singh	*Period: December 2024 to February 2025*	Assisted by the Expert in interpretation of soil sampling and their quality involved in the project.	
3	Mownica Balaji	NV	Dhanalakshmi Ramanathan	*Period: December 2024 to February 2025*	Associated with the expert team in suggesting control measures for noise and Ground Vibration.	
		AP	Dhanalakshmi Ramanathan		Associated with expert team in assessing existing air quality, impact of the project on ambient air and suggesting mitigation measures for air pollution	
4	Balasubramani G	NV	Dhanalakshmi Ramanathan	*Period: December*	Associated with the expert in selection of base line	

				2024 to February 2025	monitoring stations, Review of Noise quality results, Review of emission sources – drilling, blasting, excavation and transportation, Identification of impacts on environment, identification of remedial measures and input to EIA preparation	
		Geo	Valliappan Meyyappan		Associated with the expert in preparing Geological map.	
5	Suresh Mani	LU	Srilatha Thiruveedhula	*Period: December 2024 to February 2025*	Associated with Experts in preparing Land use map based on satellite imagery, Land use classification and analysis, Impact prediction on surrounding land environment.	M. Suresh
		HG	Ashok Kumar Rajagopal		Associated with Experts in studying hydro-geology pattern of study area, studying water and the impact of the project on ground water.	
6	Asan Ali S	NV	Srilatha Thiruveedhula	*Period: December 2024 to February 2025*	Associated with the expert in monitoring and analysis of blast induced ground vibration in order to develop the site-specific equation for its prediction, monitoring of fly rocks & air blast (noise), preparation of SOP's for the safety blasting practice in the mines.	S. Asan ali
		Geo	Valliappan Meyyappan		Associated with the Qualified Person & Experts in preparing Geological map, assessing stability of quarry slope faces and dump, management plan for mine stability and after use of mining quarry and geological	

					features of the area during mine plan preparation.	
7	Prabu M	Geo	Valliappan Meyyappan	*Period: December 2024 to February 2025*	Associated with Experts and involved in Field Investigations, Mapping /Geo-referencing	
8	Abirami Kaliyaperumal	RH	S V Prashant	*Period: December 2024 to February 2025*	Involved with Expert team and involved in identification of Risk / Hazards and Safety Measures for various activity	
9	Dhanalakshmi Ramanathan	AQ	Srilatha Thiruveedhula	*Period: December 2024 to February 2025*	Involved with Expert team and involved in calculating air emission values using Meteorological data and Providing inputs for running modelling (ISCT3, AERMOD).	
10	Manikandan Manickam	AP	Ramadoss N	*Period: December 2024 to February 2025*	Associated with expert team in assessing existing air quality, impact of the project on ambient air and suggesting mitigation measures for air pollution	
		WP	Abirami Kaliyaperumal		Associated with Identification of the source of water, impact and suggesting suitable mitigation measures for water pollution	

ANNEXURE-1

File No: 11900
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **26/04/2025**

To,

Thiru.S.Subramanian,
S/o. Thiru.Shanmugavel, No. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District., TENKASI, TAMIL NADU, 627855
subu23@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,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Proposed Rough stone and Gravel Quarry of Thiru.S.Subramanian submitted to Ministry vide proposal number SIA/TN/MIN/522675/2025 dated 07/02/2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5277761N
(ii) File No.	11900
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Proposed Rough stone and Gravel Quarry of Thiru.S.Subramanian
(viii) Name of Company/Organization	SUBRAMANIAN SHANMUGAVEL
(ix) Location of Project (District, State)	TENKASI, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) 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 22.04.2025 The minutes of the

meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

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

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

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

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

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

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

Copy To

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. Monitoring Cell, IA Division, Ministry of Environment, Forests &CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
5. The District Collector, Tenkasi District.
6. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Standard Conditions:

S. No	Terms of Reference
1.1	**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.

S. No	Terms of Reference
	6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **Agriculture & Agro-Biodiversity** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 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:

S. No	Terms of Reference
	a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

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

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

S. No	Terms of Reference
	confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic 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

S. No	Terms of Reference
	kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
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

S. No	Terms of Reference
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report

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

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

SEAC SPECIFIC CODNITIONS:

1. The project proponent, **Thiru. S. Subramanian** has applied for Terms of Reference for the Proposed Rough stone and Gravel Quarry over an extent of 4.41.00 He (Patta land) in S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11, Melakalangal Village, V.K. Pudhur Taluk, Tenkasi District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
3. As per mining plan, the lease period is for 5 years, the mining plan is valid for 5 years and annual peak production shall not exceed 1,82,780 m^3 of rough stone & 39,538 m^3 of Gravel for an ultimate depth of mining of 57 m BGL.

Based on the presentation and details furnished by the project proponent, SEAC decided to **grant Terms of Reference (TOR) with Public Hearing** subject to the following conditions, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

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) towards 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. Since waterbodies are situated nearby, the PP shall carry out the hydrological and hydrogeological studies including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies.

4. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.
5. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 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.
6. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
7. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.
8. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
9. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding villages and structures.
10. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.
11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

SEAC SPECIFIC CODNITIONS:

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
   (i) Original pit dimension
   (ii) Quantity achieved Vs EC Approved Quantity
   (iii) Balance Quantity as per Mineable Reserve calculated.
   (iv) Mined out Depth as on date Vs EC Permitted depth
   (v) Details of illegal/illicit mining
   (vi) Violation in the quarry during the past working.
   (vii) Quantity of material mined out outside the mine lease area

(viii) Condition of Safety zone/benches

(ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.

2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.
3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.
4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.
8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as

blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.

10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
    - Highest production achieved in any one year
    - Detail of approved depth of mining.
    - Actual depth of the mining achieved earlier.
    - Name of the person already mined in that leases area.
    - If EC and CTO already obtained, the copy of the same shall be submitted.
    - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with

justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.

19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.

26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.

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

    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.

SEIAA SPECIFIC CONDITIONS:

The Authority noted that the subject was placed in the 540th meeting of SEAC-2 held on 20.03.2025. After detailed discussions, the Authority accepts the recommendation of SEAC-2 and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity of 9,01,561 m^3 of Rough Stone & 53,474 m^3 of Gravel up to the depth of 57m BGL** as per

the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-2 & normal conditions & the conditions mentioned in Annexure of this minutes.

A. STANDARD TERMS OF REFERENCE

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

to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

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

site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

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

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should

also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

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

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

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post

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

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

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

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

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

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

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

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

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

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

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible,

quantitative dimensions may be given with time frames for implementation.

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

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

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

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

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

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

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

    a) Executive Summary of the EIA/EMP Report

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

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

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

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

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

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

    h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of

MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

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

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

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, “A” register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.

11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment

and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
b. All documents may be properly referenced with index, page numbers and continuous page numbering.
c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.
    - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
    - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
    - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

ANNEXURE-2

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

ANNEXURE 1

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Rc.No.M1/177/2024, Dated. 18.12.2024

Sub: Minerals and Mines - Minor Minerals - Application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, for quarrying and transportation of Roughstone and Gravel - over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District - Precise area communicated – Mining Plan - Environmental Clearance – Called for - Regarding.

Ref:

1. G.O. (Ms) No.169, Industries (MMC-1) Department dated. 04.08.2020.
2. Quarry lease application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, dated. 30.08.2024.
3. The Revenue Divisional Officer, Tenkasi, Letter No. RDOTKS/3837/ 2024-A2, dated. 08.12.2024.
4. Inspection report of Assistant Director of Geology and Mining, Tenkasi, dated. 17.12.2024.

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street, Punnaiahpuram, Chokkampatti, Kadayanallur Taluk,Tenkasi District has preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

(0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi have furnished their reports in the reference 3rd and 4th cited respectively and recommended for grant of quarry lease over an extent of 01.15.50 hectares subject to certain conditions.

3. Based on the recommendations of The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi, the quarry lease application preferred by the applicant Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for grant of quarry lease for quarrying and transportation of Roughstone and Gravel is considered to grant of quarry lease for a period of 5 years and precise area is hereby communicated over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District under Amended Rule 19 (1) and 41 (4) Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the following conditions.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

I. A Safety distance to 7.5 meters shall be provided to all along the boundaries of applied area.

II. A safety distance of 10 meters should be maintained to Government poramboke lands in SF.No.15 (Boostri paarai) on Southern side of the applied area.

III. No hindrance shall be caused to the adjoining pattadar's lands while carrying out quarrying operations and transportation of minerals.

IV. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority (SEIAA).

4. In view of the above, you are hereby directed to submit mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval of the Assistant Director of Geology and Mining, Tenkasi within a period of 90 days from the date of receipt of this notice as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

5. You are further directed to produce Environmental Clearance obtained from the State Level Impact Assessment Authority (SEIAA) as required under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease for quarrying Roughstone and Gravel in respect of the precise area communicated.

18/12/24

Assistant Director,
Geology and Mining,
Tenkasi.

18/12/24

ANNEXURE-3

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Rc.No.M1/177/2024, Dated. 18.12.2024

Sub: Minerals and Mines - Minor Minerals - Application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, for quarrying and transportation of Roughstone and Gravel - over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District - Precise area communicated – Mining Plan - Environmental Clearance – Called for - Regarding.

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1. G.O. (Ms) No.169, Industries (MMC-1) Department dated. 04.08.2020.
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4. Inspection report of Assistant Director of Geology and Mining, Tenkasi, dated. 17.12.2024.

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street, Punnaiahpuram, Chokkampatti, Kadayanallur Taluk,Tenkasi District has preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7

(0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi have furnished their reports in the reference 3rd and 4th cited respectively and recommended for grant of quarry lease over an extent of 01.15.50 hectares subject to certain conditions.

3. Based on the recommendations of The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi, the quarry lease application preferred by the applicant Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for grant of quarry lease for quarrying and transportation of Roughstone and Gravel is considered to grant of quarry lease for a period of 5 years and precise area is hereby communicated over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District under Amended Rule 19 (1) and 41 (4) Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the following conditions.

I. A Safety distance to 7.5 meters shall be provided to all along the boundaries of applied area.

II. A safety distance of 10 meters should be maintained to Government poramboke lands in SF.No.15 (Boostri paarai) on Southern side of the applied area.

III. No hindrance shall be caused to the adjoining pattadar's lands while carrying out quarrying operations and transportation of minerals.

IV. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority (SEIAA).

4. In view of the above, you are hereby directed to submit mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval of the Assistant Director of Geology and Mining, Tenkasi within a period of 90 days from the date of receipt of this notice as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

5. You are further directed to produce Environmental Clearance obtained from the State Level Impact Assessment Authority (SEIAA) as required under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease for quarrying Roughstone and Gravel in respect of the precise area communicated.

18/12/24

Assistant Director,
Geology and Mining,
Tenkasi.

18/12/24

APPROVAL MINING PLAN

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

MINING PLAN FOR MELAKALANGAL ROUGH STONE & GRAVEL QUARRY

(Prepared under rule 19(1), 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959)

LOCATION OF THE QUARRY LEASE APPLIED AREA

STATE	:	TAMIL NADU
DISTRICT	:	TENKASI
TALUK	:	V.K.PUDHUR
VILLAGE	:	MELAKALANGAL
S.F.NOS	:	16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 AND 19/11
EXTENT	:	4.41.00Ha

ECO-FRIENDLY

SUSTAINABILITY

SAFETY

FOR
APPLICANT

Thiru.S.Subramanian,
S/o.Thiru.Shanmugavel,
No.196/4, North Street,
Chokkampatti Village, Kadayanallur Taluk,
Tenkasi District.

PREPARED BY

C.Natarajan, M.Sc., M.Phil.,
Qualified Person
No.93/36-E2, Subramaniyar Kovil Street,
Omalur Taluk, Salem District,
Tamil Nadu, PIN-636 455.
Mobile:97502 23535-94446 54520.

(PPE)

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

S.Subramanian,
S/o.Thiru.Shanmugavel,
No.196/4, North Street,
Chokkampatti Village, Kadayanallur Taluk,
Tenkasi District.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 4.41.00hectares of Patta lands in S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State has been prepared by

C.Natarajan, M.Sc.,M.Phil.,
Qualified Person

I request the Assistant Director, Department of Geology and Mining, Tenkasi District to make further correspondence regarding modifications of the Mining Plan with the said Qualified Person on this following address.

C.Natarajan, M.Sc.,M.Phil.,
Qualified Person
No.93/36E2, Subramaniyar Kovil Street,
Omalur Taluk, Salem District,
Tamil Nadu, Pin-636 455.
Mobile: 97502 23535 &94446 54520.

I hereby undertake that all modifications so 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 building on me in all respects.

Signature of the Applicant

S.Subramanian

Place: Tenkasi
Date: 18.12.2024

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

S.Subramanian,
S/o.Thiru.Shanmugavel,
No.196/4, North Street,
Chokkampatti Village, Kadayanallur Taluk,
Tenkasi District.

DECLARATION

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 4.41.00hectares of Patta lands in S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Signature of the Applicant

S.Subramanian

Place: Tenkasi
Date: 18.12.2024

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

C.Natarajan, M.Sc.,M.Phil.,

Qualified Person

No.93/36E2, Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin-636 455.

Mobile:97502 23535 & 94446 54520.

CERTIFICATE

This is to certify that, the provisions of under rules 41 & 42 as Amended in under Tamil Nadu Minor Mineral Concession Rules, 1959, have been observed in the Mining Plan for the grant of **Rough Stone and Gravel** quarry lease over an extent of 4.41.00hectares of Patta lands in S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State applied by Thiru.S.Subramanian, for fresh quarry lease.

Wherever specific permission / exemptions / relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central Governments for granting such permissions etc.

Certified

Signature of Qualified Person.

C.Natarajan, M.Sc., M.Phil.,

Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,
Qualified Person

Place: Salem

Date: 19.12.2024

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

C.Natarajan, M.Sc.,M.Phil.,
Qualified Person
No.93/36E2, Subramaniyar Kovil Street,
Omalur Taluk, Salem District,
Tamil Nadu, Pin-636 455.
Mobile:97502 23535 & 94446 54520.

CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone and Gravel** quarry over an extent of 4.41.00hectares of Patta lands in S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State for Thiru.S.Subramanian, covers all the provisions of Mines Act, Rules, and Regulations etc., made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Certified
Signature of Qualified Person.

C.Natarajan, M.Sc., M.Phil.,
Qualified Person
C.NATARAJAN M.Sc.,M.Phil.,
Qualified Person

Place: Salem
Date: 19.12.2024

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

CERTIFICATE

Ccrtificd that I, C.Natarajan, residing at No.93/36 E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin Code-636 455. I am a Post graduate in Geology (M.Sc., Geology) from Annamalai university and more than five years of experience in mining Field.

Rule 15(1)(a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016 stipulates the eligibility for preparing Mining Plans as *"(1)(a) a post graduate degree in Geology granted by a university established" and (1)(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 (1)(a) and (1)(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 in respect of Rough Stone and Gravel quarry lease applied for an extent of 4.41.00hectares of Patta land in S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, by Thiru.S.Subramanian, for a period of Five years. Since the Mining Plan is prepared as per the provisions contained in Rule 15(1) (a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016, the same may be approved by the Competent Authority.

C.Natarajan, M.Sc.,M.Phil.,
Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,
Qualified Person

Place: Salem
Date: 19.12.2024

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

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MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

Annexure

S. No.	Description	Annexure No.
1.0	Precise Area Communication letter issued by the Assistant Director, Department of Geology and Mining,	I
2.0	Copy of FMB	II
3.0	Copy of village map	III
4.0	Copy of Patta	IV
5.0	Copy of Adangal	V
6.0	Copy of A Register	VI
7.0	Copy of Consent Document	VII
8.0	Copy of Identity Proof	VIII
9.0	Copy of QP Certificate	IX

LIST OF PLATES

S. No.	Description	Plate No.
1.0	Location Plan	I
2.0	Environmental Plan	I-A
3.0	Satellite imagery map	I-B
4.0	Topo sketch of Quarry lease applied area for 10Km Radius	I-C
5.0	Key Plan	I-D
6.0	Quarry lease & Surface plan	II
7.0	Topography and Geological Plan & Sections	III
8.0	Mineable Plan & Sections	IV
9.0	Yearwise Development, Production Plan & Sections	V
10.0	Conceptual Plan & Sections	VI

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

MINING PLAN FOR MINOR MINERALS

ROUGH STONE AND GRAVEL

Over an extent of 4.41.00hcctarcs of Patta land in S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District, Tamil Nadu State.

(PREPARED UNDER RULE 19(1), 41 and 42 OF TNMMCR 1959)

1.0 Introduction and Executive Summary;

1. The present Mining Plan is prepared for Thiru.S.Subramanian, S/o. Thiru.Shanmugavel, residing at no. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District.
2. The application was processed by the Assistant Director, Department of Geology and Mining, Tenkasi, and passed an order vide Rc.No. M1/177/2024, dated 18.12.2024 directing the applicant to produce approved Mining Plan under Rule 41(5) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and Environmental Clearance Certificate under Rule 42 from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease to quarry **Rough Stone and Gravel** over an extent of 4.41.00 hectares of Patta lands in S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District of Tamil Nadu State for a period of five years.
3. Accordingly, Mining Plan is prepared under the provisions of rule 19(1), 41 and 42 as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating following the conditions imposed in the precise area communication letter.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

i) A safety distance 7.5 meters shall be provided to all along boundaries of applied area.

ii) A safety distance 10 meters should be maintained to government poramboke land in S.F.No.15 (Boostri paarai) on southern side of the applied area.

iii) No hindrance shall be caused to the adjoining pattadar's lands while carrying out quarrying operation and transportation of minerals.

iv) Environment clearance should be obtained State Level Environmental Impact Assessment Authority (SEIAA).

4. Geological Resources is estimated at 23,67,302m^3 of Rough stone and 77,014m^3 of gravel formation and Mineable Reserves is estimated at 9,01,561m^3 of Rough Stone and 53,474m^3 of gravel formation and after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.

5. The production schedule is proposed production of 9,01,561m^3 of Rough Stone and 53,474m^3 of gravel formation for the period of five years.

6. The applicant ensured that, child labours under 18 years of age will not be engaged for quarrying operation.

7. The applicant ensure that will appoint should have valid certified persons (Mines Manager, Foreman, Mate) during quarrying operation.

8. Environmental parameters,

i) The area does not attract the Forest Conservation Act, 1980 as there is no forest around 8.0Kms radius.

ii) There is no interstate boundary around 10Kms radius.

iii) There is no wild life animal sanctuary within 10Kms radius from the project site area under the Wildlife (Protection) Act, 1972.

Therefore the project seeks clearance only from State Level Environmental Impact Assessment Authority (SEIAA).

9. Environmental measures to be adopted shall be,

i) Dust Control at source while drilling and blasting,

ii) Dust suppression at loading point and transport haul roads,

iii) Noise Control in blasting, control of fly rock missiles and vibration by doing peak particle velocity with in standard as prescribed by the DGMS and MOEF.

iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.

v) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.

vi) Mining near major fracture zones if any should be avoided to control ground water fluctuation in the adjacent agricultural lands.

vii) Emission test of vehicles should be in tack to maintain minimum emission level of flue gases.

viii) Noise level should not exceed 80db and the vehicles should use only permitted Air Horn while on road near residential areas.

ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhere to.

x) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.

EXECUTIVE SUMMARY:

a.	Name of the Village Panchayat	:	Melakalangal
b.	Name of the Panchayat Union	:	Alangulam
c.	The proposed total Minable Reserves	:	9,01,561m^3 of Rough Stone, 53,474m^3 of gravel formation
d.	The proposed quantity of reserves (level of production) for Five years to be mined is(Recoverable reserves)	:	9,01,561m^3 of Rough Stone, 53,474m^3 of gravel formation
e.	Total extent of the area	:	4.41.00Ha
f.	Proposed Period of mining	:	Five Years
g.	Existing depth	:	8m (maximum) below ground level
h.	Proposed Depth of mining	:	57m (maximum) below ground level for the proposed mining plan.

i.	Method of mining/level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m is proposed.
j.	Types of Machineries used in the quarry	:	Machineries like Tractor mounted compressor attached with Jack hammers, Excavators are proposed to deploy for quarrying operation.
k.	Cost of the Project A. Fixed Assets Cost B. Operational Cost C. EMP Cost		Rs. 29,46,000 /- Rs. 82,50,000/- Rs. 6,50,000/- Total Project cost=**Rs. 1,18,46,000 /-**

l. The area applied for lease is bounded by twenty four corners and the coordinates are clearly marked in plate no II.

Corners	Co- ordinates		Distance between the corners
	Latitude	Longitude	
1	09° 02' 11.42"N	77° 29' 32.60"E	1-2 = 8.8m
2	09° 02' 11.70"N	77° 29' 32.62"E	2-3 = 40.2m
3	09° 02' 13.01"N	77° 29' 32.64"E	3-4 = 5.8m
4	09° 02' 13.07"N	77° 29' 32.82"E	4-5 = 48.0m
5	09° 02' 14.62"N	77° 29' 32.64"E	5-6 = 40.0m
6	09° 02' 14.77"N	77° 29' 33.94"E	6-7 = 1.4m
7	09° 02' 14.81"N	77° 29' 33.94"E	7-8 = 26.2m
8	09° 02' 14.94"N	77° 29' 34.78"E	8-9 = 47.2m
9	09° 02' 16.44"N	77° 29' 34.56"E	9-10 = 40.4m
10	09° 02' 16.58"N	77° 29' 35.88"E	10-11 = 2.8m
11	09° 02' 16.51"N	77° 29' 35.93"E	11-12 = 24.8m
12	09° 02' 16.70"N	77° 29' 36.72"E	12-13 = 3.4m
13	09° 02' 16.81"N	77° 29' 36.74"E	13-14 = 73.2m
14	09° 02' 19.19"N	77° 29' 36.59"E	14-15 = 4.4m
15	09° 02' 19.21"N	77° 29' 36.73"E	15-16 = 33.2m
16	09° 02' 20.29"N	77° 29' 36.64"E	16-17 = 6.8m
17	09° 02' 20.32"N	77° 29' 36.86"E	17-18 = 23.8m
18	09° 02' 20.20"N	77° 29' 37.63"E	18-19 = 13.2m
19	09° 02' 19.77"N	77° 29' 37.69"E	19-20 = 113.4m
20	09° 02' 19.77"N	77° 29' 41.40"E	20-21 = 82.2m
21	09° 02' 17.09"N	77° 29' 41.27"E	21-22 = 106.2m
22	09° 02' 13.67"N	77° 29' 41.40"E	22-23 = 50.0m
23	09° 02' 13.32"N	77° 29' 39.80"E	23-24 = 154.0m
24	09° 02' 11.59"N	77° 29' 35.07"E	24-1 = 77.6m

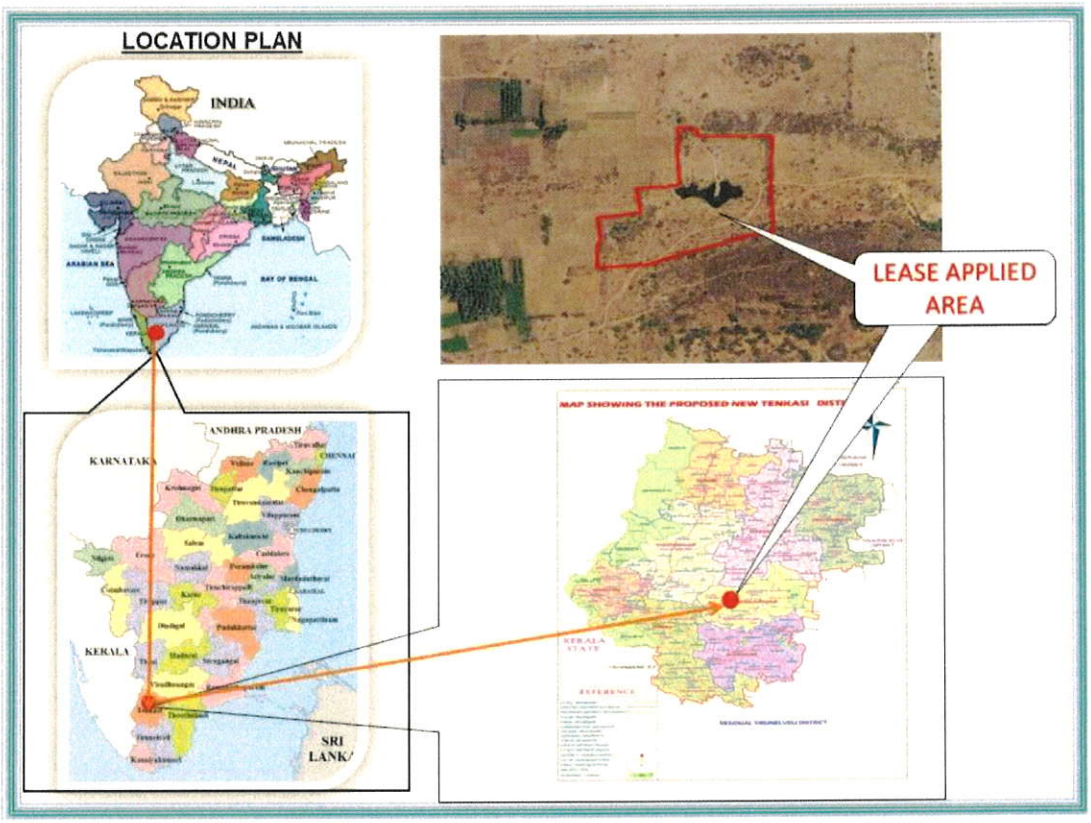
MINING PLAN APPROVED By Assistant Director of Geology & Mining Tenkasi Dist.

2.0	**General Information**:			
2.1	a.	Name of the Applicant	:	Thiru.S.Subramanian,
	b.	Address of the Applicant with phone No and e-mail id if any	:	S/o. Thiru.Shanmugavel, No. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District. Pin Code – 627 855 Cell No.: 88707 02608
	c.	Status of the Applicant	:	Individual
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone and Gravel.
	b.	Precise area communication letter No.	:	Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc. No. M1/177/2024, dated 18.12.2024.
	c.	Period of permission / lease granted	:	The Assistant Director, Department of Geology and Mining, Tenkasi, has grant of lease period for **five years.**
	d.	Name and Address of the QP preparing Mining Plan	:	**C.Natarajan, M.Sc.,M.Phil.,** **Qualified Person** No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin-636 455. Mobile: 97502 23535 & 94446 54520.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

3.0 Location:

S.No		Details of the Area:
1	Corner Coordinates	Latitude :09°02'11.42"N to 09°02'20.32"N Longitude :77°29'32.60"E to 77°29'41.40"E
2	Toposheet Number	58 G/08
3	The altitude of the area	128m (MSL)
4	Extent	4.41.00Ha
5	Survey Nos	16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11
6	Village	Melakalangal
7	Taluk	V.K.Pudhur
8	District	Tenkasi
9	State	Tamil Nadu



MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

a.	Classification of the Area (Ryotwari / poramboke / others)	:	Patta land
b.	Ownership / Occupancy of the Applied area (Surface rights)	:	It is patta land registered in the namc of Thiru.Senthilkumar vide patta no. 1622, the applicant has obtained consent from the pattadar, Please refer annexure no.IV & VII.
c.	Toposheet No. with Latitude and Longitude	: : :	Topo Sheet No: 58 G/ 08 Latitude :09°02'11.42"N to 09°02'20.32"N Longitude :77°29'32.60"E to 77°29'41.40"E
d.	Existence of Public Road / Railway line if any nearby the area and approximate distance	:	There is an existing road from the area leads to Melakalangal - Echantha village road on east side of the area The Nearest Railway line is Tenkasi to Sankarankovil line which is about 12.5Km on northwest side of the area.

SATELLITE IMAGERY OF THE LEASE APPLIED AREA

TOPOGRAPHICAL VIEW OF THE LEASE APPLIED AREA

Fig. Location of the lease Applied Area

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

PART - A

4.0 Geology and Mineral Reserves:

4.1	a.	Topography	:	➢ The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is noticed below 2m (avg) Gravel formation and sloping towards southeastern side of the area, the altitude of the area is above 128m (maximum) from MSL. ➢ No major river is found nearby the lease applied area. ➢ Water table is found at a depth of 78m in summer and 75m in rainy seasons. ➢ Temperature of the area is reported to be 18^{0}C to a maximum of 42^{0}C during summer. ➢ Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons.
	b.	General Geology of the Area	:	The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high grade metamorphic rock. The strike of the Charnockite formation is N40^{0}E –S40^{0}W with dipping towards SE70^0. The general geological succession of the area is given as under.

				AGE — **ROCK TYPE** Recent - Gravelly soil Unconformity Archaean - Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss
4.2		Details of Exploration already carried out if any	:	No exploration was carried out, as the Rough stone formations are clearly visible from existing quarry pit.
4.3	a.	Estimation of Reserves	:	The Geological and Recoverable reserves are estimated by cross sectional method. Totally five sections have been drawn, two section drawn length wise as (X-Y), and another three sections drawn width wise as (A-B), (C-D) (E-F) to cover maximum area considered for lease. The Plans and Sections have been drawn with a scale of 1:1000 and 1:500 respectively. Please refer plate No.III.

a. Geological Resources

The quarrying is restricted up to a depth of 57m (maximum) below ground level only. Availability of Resources is given below.

Table No-1

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel formation in m^3	Geological Resources of Rough stone in m^3
XY-AB	I	97	146	2	28324	28324	
	II	97	146	5	70810		70810
	III	97	146	5	70810		70810
	IV	97	146	5	70810		70810
	V	97	146	5	70810		70810
	VI	97	146	5	70810		70810
	VII	97	146	5	70810		70810
	VIII	97	146	5	70810		70810
	IX	97	146	5	70810		70810
	X	97	146	5	70810		70810
	XI	97	146	5	70810		70810
	XII	97	146	5	70810		70810
	Total					**28324**	**778910**
XY-CD	I	57	105	2	11970	11970	
	II	14	105	5	7350		7350
	III	14	105	1	1470		1470

	III	57	204	4	46512		46512
	IV	57	204	5	58140		58140
	V	57	204	5	58140		58140
	VI	57	204	5	58140		58140
	VII	57	204	5	58140		58140
	VIII	57	204	5	58140		58140
	IX	57	204	5	58140		58140
	X	57	204	5	58140		58140
	XI	57	204	5	58140		58140
	XII	57	204	5	58140		58140
	Total					**11970**	**578592**
XY-EF	I	60	204	2	24480	24480	
	II	60	204	5	61200		61200
	III	60	204	5	61200		61200
	IV	60	204	5	61200		61200
	V	60	204	5	61200		61200
	VI	60	204	5	61200		61200
	VII	60	204	5	61200		61200
	VIII	60	204	5	61200		61200
	IX	60	204	5	61200		61200
	X	60	204	5	61200		61200
	XI	60	204	5	61200		61200
	XII	60	204	5	61200		61200
	Total					**24480**	**673200**
X1Y1-EF	I	102	60	2	12240	12240	
	II	102	60	5	30600		30600
	III	102	60	5	30600		30600
	IV	102	60	5	30600		30600
	V	102	60	5	30600		30600
	VI	102	60	5	30600		30600
	VII	102	60	5	30600		30600
	VIII	102	60	5	30600		30600
	IX	102	60	5	30600		30600
	X	102	60	5	30600		30600
	XI	102	60	5	30600		30600
	XII	102	60	5	30600		30600
	Total					**12240**	**336600**
Grand Total						**77014**	**2367302**

Gravel Formation : 77,014m^3

The Geological Resources of Rough stone : 23,67,302m^3

b. <u>Already excavated</u>

The area has been quarried in earlier operation the existing pit dimension are given below.

Table No-2

Pit No	length (Max) in(m)	Width (Max) in (m)	Depth (Max) in (m)
I	98	40	8m below ground level

c. Available Mineable Reserve

The available mineable reserve calculated by deducting 7.5m and 10m safety distance and bench loss.

Table No 3

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel in m^3	Mineable Reserves of Rough stone in m^3
XY-AB	I	89	129	2	22962	22962	
	II	86	123	5	52890		52890
	III	81	113	5	45765		45765
	IV	76	103	5	39140		39140
	V	71	93	5	33015		33015
	VI	66	83	5	27390		27390
	VII	61	73	5	22265		22265
	VIII	56	63	5	17640		17640
	IX	51	53	5	13515		13515
	X	46	43	5	9890		9890
	XI	41	33	5	6765		6765
	XII	36	23	5	4140		4140
	Total					**22962**	**272415**
XY-CD	I	14	88	2	2464	2464	
	II	14	82	5	5740		5740
	III	14	72	1	1008		1008
	III	57	171	4	38988		38988
	IV	57	161	5	45885		45885
	V	57	151	5	43035		43035
	VI	57	141	5	40185		40185
	VII	57	131	5	37335		37335
	VIII	57	121	5	34485		34485
	IX	57	111	5	31635		31635
	X	57	101	5	28785		28785
	XI	57	91	5	25935		25935
	XII	52	81	5	21060		21060
	Total					**2464**	**354076**
XY-EF	I	49	196	2	19208	19208	
	II	46	193	5	44390		44390
	III	41	188	5	38540		38540
	IV	36	183	5	32940		32940
	V	31	178	5	27590		27590
	VI	26	173	5	22490		22490
	VII	21	168	5	17640		17640
	VIII	16	163	5	13040		13040
	IX	11	158	5	8690		8690
	X	6	148	5	4440		4440
	Total					**19208**	**209760**

X1Y1-EF	I	85	52	2	8840	8840	
	II	79	49	5	19355		19355
	III	69	44	5	15180		15180
	IV	59	39	5	11505		11505
	V	49	34	5	8330		8330
	VI	39	29	5	5655		5655
	VII	29	24	5	3480		3480
	VIII	19	19	5	1805		1805
	Total					**8840**	**65310**
Grand Total						**53474**	**901561**

The available mineable reserve is computed as 9,01,561m^3 of Rough stone and 53,474m^3 of Gravel formation upto a depth 57m (maximum) below ground level only.

5.0 Mining:

5.1	Method of Mining	:	1. Opencast method of semi mechanized mining with 5.0m height 5m width of the bench. 2. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom[possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.
5.2	Mode of Working	:	The rough stone is proposed to quarry 5m bench height, 5m width with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy buyers. 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.

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			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 buyers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining.
5.3	Proposed bench height & Width	:	Quarrying of Rough Stone is proposed bench height of 5m and bench width of 5m.
5.4	Details of Overburden / Mineral Production proposed for the first 5 years.	:	The overburden in the form of Gravel, after the excavation of Gravel and Rough stone will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low lying areas.

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The Yearwise Production and Development Table

Table No –4

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel in m^3	Mineable reserve of Rough stonc in m^3
I	XY-AB	I	89	129	2	22962	22962	
		II	86	123	5	52890		52890
		III	81	113	5	45765		45765
	XY-CD	I	14	88	2	2464	2464	
		II	14	82	5	5740		5740
		III	14	72	1	1008		1008
		III	57	171	4	38988		38988
	XY-EF	I	36	196	2	14112	14112	
		II	36	193	5	34740		34740
Total							**39538**	**179131**
II	XY-EF	I	13	196	2	5096	5096	
		II	10	193	5	9650		9650
		III	41	188	5	38540		38540
		IV	36	183	5	32940		32940
	X1Y1-EF	I	85	52	2	8840	8840	
		II	79	49	5	19355		19355
		III	69	44	5	15180		15180
		IV	59	39	5	11505		11505
	XY-CD	IV	57	161	5	45885		45885
	XY-AB	IV	14	103	5	7210		7210
Total							**13936**	**180265**
III	XY-AB	IV	62	103	5	31930		31930
		V	71	93	5	33015		33015
	XY-CD	V	57	151	5	43035		43035
		VI	10	141	5	7050		7050
	XY-EF	V	31	178	5	27590		27590
		VI	26	173	5	22490		22490
	X1Y1-EF	V	49	34	5	8330		8330
		VI	39	29	5	5655		5655
Total								**179095**
IV	XY-CD	VI	47	141	5	33135		33135
		VII	57	131	5	37335		37335
		VIII	40	121	5	24200		24200
	XY-AB	VI	66	83	5	27390		27390
		VII	61	73	5	22265		22265
	XY-EF	VII	21	168	5	17640		17640

		VIII	16	163	5	13040		13040
	X1Y1-EF	VII	29	24	5	3480		3480
		VIII	19	19	5	1805		1805
Total								**180290**
V	XY-CD	VIII	17	121	5	10285		10285
		IX	57	111	5	31635		31635
		X	57	101	5	28785		28785
		XI	57	91	5	25935		25935
		XII	52	81	5	21060		21060
	XY-EF	VIII	56	63	5	17640		17640
		IX	51	53	5	13515		13515
		X	46	43	5	9890		9890
		XI	41	33	5	6765		6765
		XII	36	23	5	4140		4140
		IX	11	158	5	8690		8690
		X	6	148	5	4440		4440
Total								**182780**
Grand Total							**53474**	**901561**

The applicant has proposed to carry out 9,01,561m³ of Rough stone and 53,474m³ of Gravel formation upto a depth of 57m (maximum) below ground level for the period of five years.

5.5		Machineries to be used		
	a.	Drilling	:	It is proposed to use following machineries for quarrying rough stone

S.No	Type	Nos	Dia Hole mm	Make	Motive power
1	Jack hammer	10	32	Atlas Copco	Compressed air
2	Compressor	3	-	Atlas Copco	Diesel Drive

	b.	Loading	:	Excavator of 0.90m³ bucket capacity (with Rock breaker attachment) (2No).
	c.	Transportation	:	Tipper 6Nos (5/10Ts) capacity.

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<table>
<tr><td>5.6</td><td></td><td>Disposal of Overburden</td><td>:</td><td>The overburden in the form of Gravel, after the excavation gravel will be directly loaded into tipper to the needy buyers for road project and construction works for filling and leveling of low lying areas.</td></tr>
<tr><td>5.7</td><td></td><td>Brief Note on Conceptual Mining Plan for the entire lease period</td><td>:</td><td>Conceptual Mining Plan is prepared with an object of five years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc.
Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc.
Ultimate Pit dimension is given as under,
<table>
<tr><th colspan="4">Ultimate Pit dimension</th></tr>
<tr><th>Pit No</th><th>Length (max) in (m)</th><th>Width (Avg) in (m)</th><th>Depth(max) in(m)</th></tr>
<tr><td>I</td><td>248</td><td>149</td><td>57</td></tr>
</table>
Afforestation has been proposed on all along the boundary barrier by planting trees.
All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.</td></tr>
</table>

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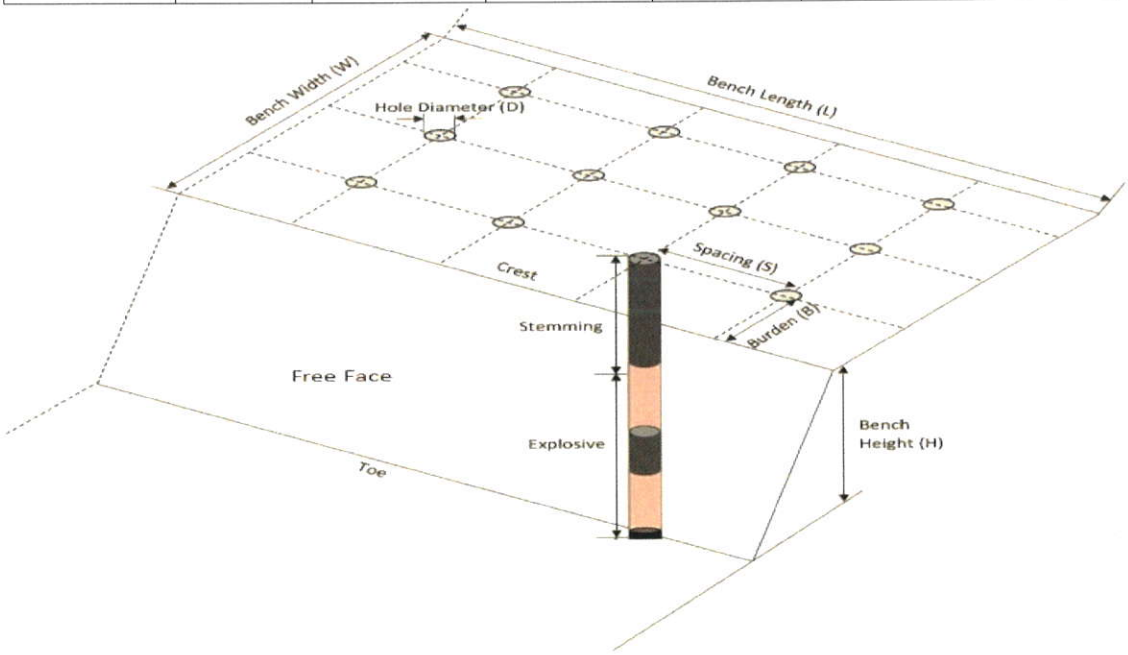
6.0 Blasting:

6.1	Blasting Pattern	:	The massive formation shall be broken into pieces of portable size by drilling and blasting using jack hammers and shot hole blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 Tonnes per K.g of explosives. Blasting parameters are as follows.

Diameter of the hole	Spacing	Depth	Burden for hole	Pattern of hole	Inclination of hole
32-36mm	0.6m	1 to 1.5m	0.6m	Zig Zag	70^0 from the horizontal



6.2	Types of Explosives	:	Small dia, 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.

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6.3	Measures proposed to minimize ground vibration due to blasting	:	➢ Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. ➢ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock.

Number of holes	:	520
Powder factor	:	6Ts/Kg of explosives
Total explosive required	:	260Kg slurry explosives
Charge / hole	:	0.5Kg
Blasting time	:	12-2 Pm

6.4	Storage of Explosives and safety measures to be taken while blasting.	:	➢ The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager. ➢ ***The applicant ensure that will appoint the Mate (Should have Valid Blaster Certificate) during Blasting Operation.***

7.0 Mine Drainage:

7.1	Depth of Water table	:	The ground water table is reported as 78m below ground level. In the proposed mining plan only 57m (below ground level) depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. Hence the quarrying operation may not affect the ground water.
7.2	Arrangement and Places where the mine water is finally proposed to be discharged	:	The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.P.Motor. The quality of water is potable and it is not contaminated with any hazardous things. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water stored in the old pit will also be used for plantation purposes

8.0	**Other Permanent Structures**:		
8.1	Habitations / Village	:	There are no habitations within a radius of 300m.
8.2	Power lines (HT/LT)	:	There are no HT/LT power lines passing within a radius of 50m.
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc.,)	:	There is seasonal odai passing on east and west side of the area and is 260m and 270m of the area, There is Tank situated on South side and is 310m away from the lease applied area.
8.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 300m.
8.5	Road (NH, SH, Village Road etc)	:	The National Highway (NH-744) Tenkasi – Tirumangalam is about 16km on northwest side of the area. The State Highway (SH-41) Tirunelveli - Sankarankovil is about 11.5Km on Northeastern side of the area.
8.6	Places of Worship	:	There are no Places of Worship within a radius of 50m.
8.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	There is no Reserved Forest / Wild Life Sanctuary etc., within a radius of 1Km.
8.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	:	There are No inter State border within a radius of 10Kms.
8.9	Any Other Structures	:	Nil

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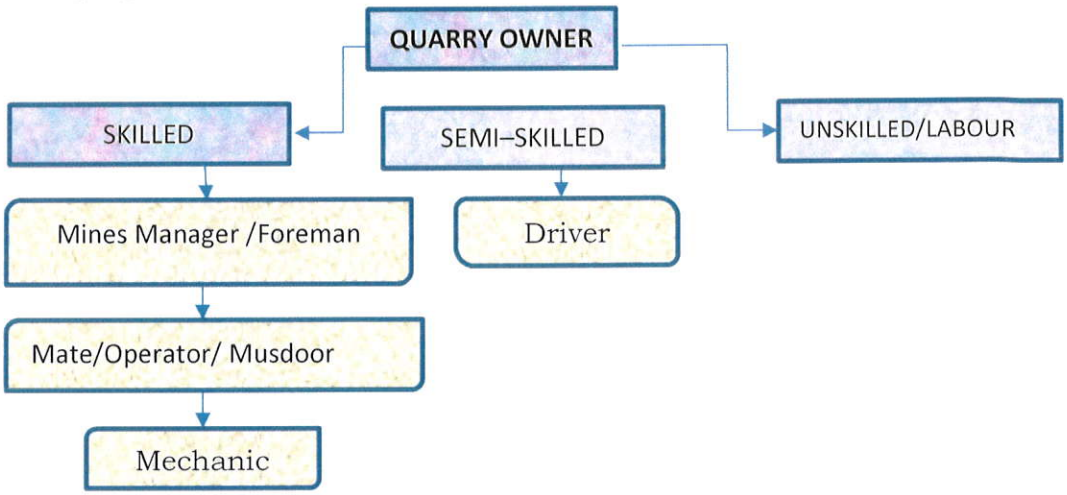
9.0 Employment Potential & Welfare Measures:

9.1 Employment Potential (Management & Supervisory personal)

The proposed organization chart



1.	Skilled	Mines Manager	1 No.
		Foreman / Mate	2 No.
		Operator	12 No.
		Mechanic	1 No.
2.	Semi–skilled	Driver	6 No.
3.	Unskilled	Labours	12Nos
		Total =	34Nos

Allowing 10% absentee, the no. of men of roll will be around 31.

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

- **It is been ensured that, child labours under 18 years of age will not be engaged for quarrying operation.**
- **Necessary life insurance policies will be taken by the applicant to all the employees up to the end of the lease period.**

9.2		Welfare Measures		
	a.	Drinking Water	:	Packaged drinking water is available from the nearby approved water vendors in Melakalangal village which is about 1.2km on southeast side of the area.

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	b.	Sanitary facilities	:	Semi-permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1960.
	c.	First Aid Facility	:	First aid kits are kept in Mines office room, in case of such eventualities thc victim will be given first aid immediately at the site and injured person will be taken to the hospital. Hospital is available at distance of 10 Km (SW) in Surandai the competent and Statutory foreman/ permit manager will be in charge of first aid.
	d.	Labour Health	:	As per Mines Rule, Periodic medical examination related to occupational health safety will be conducted to all the workers in applicant's own cost.
	e.	Precautionary safety measures to the Labourers:		
		Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc., have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation. Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and systematic quarrying operation.		

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PART – B

10.0 Environmental Management Plan:

10.1	Existing Land Use Pattern	:	1. The area is exhibits almost plain topography covered by Gravel formation. 2. Quarrying operation is proposed up to a depth of 57m below ground level for the proposed mining plan period. 3. Fluctuation of Water table in this area is in between 78m and 75m during a year. 4. This region receives the average annual rainfall of 800mm to 900mm. The surrounding area is practiced by the seasonal cultivation. The existing land use pattern is given as under.

Table No-4

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	3.70.50
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.02.00
4.	Green Belt	Nil	0.67.50
5.	Unutilized	4.41.00	Nil
	Total =	**4.41.00**	**4.41.00**

10.2	Water Regime	:	Water table in this area is noticed at a depth of 78m and presently, in the proposed mining plan only 57m (below ground level) depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. hence, it will not affect the ground water depletion of this area.
10.3	Flora and Fauna	:	Except acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.
10.4	Climatic conditions	:	Generally subtropical climatic condition prevails throughout the year and there is no sharp variation in climate. This District receives rain both in south west and north east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18°C during winter and to a maximum of 42°C during the summer.

<table>
<tr><td>10.5</td><td>Human Settlement</td><td>:</td><td>The nearest habitations with the population is given as under.
Table No-5
<table>
<tr><th>S. No</th><th>Name of the Village</th><th>Approximate distance & Dircction from lease applied area</th><th>Approximate population</th></tr>
<tr><td>1.</td><td>Periyasamiyar puram</td><td>2.0km - NE</td><td>800</td></tr>
<tr><td>2.</td><td>Andarkulam</td><td>1.7km - NW</td><td>400</td></tr>
<tr><td>3.</td><td>Melakalangal</td><td>1.2Km – SE</td><td>1200</td></tr>
<tr><td>4.</td><td>Uchipothai</td><td>0.6Km-SW</td><td>300</td></tr>
</table></td></tr>
<tr><td>10.6</td><td>Plan for Air, Dust Suppression</td><td>:</td><td>Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. Wet drilling and dust extractor arrangements will be provided to drilling units so as to control raise of dust from the site of drilling. Operators, those exposed directly to such conditions will be provide such protective equipment like mask, ear plug, helmet, gloze etc., as per the Mines Act.</td></tr>
<tr><td>10.7</td><td>Plan for Noise Control</td><td>:</td><td>Quarrying of Rough Stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. Nowhere the noise level should exceed the permissible limit of 80db during the quarry working hours.</td></tr>
<tr><td>10.8</td><td>Environmental Impact Assessment Statement Describing Impact on mining on the next Five years</td><td>:</td><td>The mining plan proposed is for a small production of Rough stone without involving deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned, anyhow environmental impact studies will be conducted as per EIA notification issued by MOEF.</td></tr>
</table>

10.9	Proposal for Waste Management	:	There is no waste anticipated in this rough stone quarry operation.
10.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	:	In the proposed mining plan 57m (below ground level) depth has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit (for this lease period) of 57m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle.
10.11	Program for Afforestation	:	The 7.5m and 10m safety distance along the lease boundary has been identified to be utilized for afforestation Appropriate native species of Neem/Pungan trees will be planted in the first year. Nearly 6750Sqm area is proposed to use under afforestation by planting 810nos of Neem/Pungan trees during first year with an anticipated survival rate of 80%. The Quarry landuse, layout and afforestation plan is shown in Plate No.III.
10.12	Proposed Financial Estimate / Budget for (EMP) Environment Management		
	A. Fixed Asset Cost:		
	1. Land Cost (600000/1Ha)=	:	Rs. 26,46,000
	2. First aid room and accessories	:	Rs.1,00,000
	3. Labour Shed		Rs.1,00,000
	4. Sanitary Facility		Rs.1,00,000
	Total=		**Rs. 29,46,000 /-**
	B. Operational Cost:		
	1. Machineries	:	Rs.80,00,000-
	2. Fencing cost	:	Rs. 2,50,000
	Total	**:**	**Rs.82,50,000/-**

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	C.EMP Cost:	:	Budget Provision for the entire quarrying period. Air Quality Sampling = Rs. 40,000/- Water Quality Sampling = Rs. 40,000/- Noise Monitoring = Rs. 20,000/- Ground vibration test = Rs. 20,000/-
	Expenditure 1. Drinking water facility 2. Sanitary Arrangements 3. Safety kids 4. Water sprinkling 5. Afforestation **Total=**	: : : : : :	Rs.1,50,000/- Rs. 50,000/- Rs. 50,000/- Rs. 1,50,000/- Rs. 1,30,000/- **Rs. 6,50,000/-**
	Total Project Cost (A+B+C)	:	**Rs. 1,18,46,000 /-**
	CSR Cost(2% of Total Project Cost)	:	**Rs. 2,36,920/-**

11.0 Mine Closure Plan:

11.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of the life of lease will be fenced to prevent inherent entry of public and cattles.
11.2	Measures to be under taken on mine closure as per Act & Rules	:	Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.
11.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	Mitigation measures: Drilling will be carried out by wet drilling mode to control the dust propagation into the air. Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

12.0 Any Other Details Intend to Furnish by the Applicant:

(i) Permission will be obtained from the District Mines Office to extract the Rough Stone from the Boundary barriers and for slopes.

(ii) Carc and precautionary measures will be taken for the safety of workers as per Rules and Acts.

(iii) The applicant will endeavor every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.

(iv) The Mining Plan is prepared by incorporating the conditions stipulated in the precise area communication issued and relevant mining laws in force.

(v) Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

Prepared by

C.Natarajan, M.Sc.,M.Phil.,
Qualified Person

C.NATARAJAN M.Sc.,M.Phil.,
Qualified Person

Place : Salem
Date : 19.12.2024

This Mining Plan is approved Subject to the Conditions / Stipulation indicated in the Mining Plan Approval

Letter Roc. No: M1/177/2024

Dated : 26.12.2024

26/12/24

Assistant Director
Dept. of Geology and Mining
Tenkasi

26/12/24

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

ANNEXURE 1

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Rc.No.M1/177/2024, Dated. 18.12.2024

Sub: Minerals and Mines - Minor Minerals - Application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, for quarrying and transportation of Roughstone and Gravel - over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District - Precise area communicated – Mining Plan - Environmental Clearance – Called for - Regarding.

Ref:

1. G.O. (Ms) No.169, Industries (MMC-1) Department dated. 04.08.2020.
2. Quarry lease application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, dated. 30.08.2024.
3. The Revenue Divisional Officer, Tenkasi, Letter No. RDOTKS/3837/ 2024-A2, dated. 08.12.2024.
4. Inspection report of Assistant Director of Geology and Mining, Tenkasi, dated. 17.12.2024.

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street, Punnaiahpuram, Chokkampatti, Kadayanallur Taluk,Tenkasi District has preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

(0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi have furnished their reports in the reference 3rd and 4th cited respectively and recommended for grant of quarry lease over an extent of 01.15.50 hectares subject to certain conditions.

3. Based on the recommendations of The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi, the quarry lease application preferred by the applicant Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for grant of quarry lease for quarrying and transportation of Roughstone and Gravel is considered to grant of quarry lease for a period of 5 years and precise area is hereby communicated over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District under Amended Rule 19 (1) and 41 (4) Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the following conditions.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

I. A Safety distance to 7.5 meters shall be provided to all along the boundaries of applied area.

II. A safety distance of 10 meters should be maintained to Government poramboke lands in SF.No.15 (Boostri paarai) on Southern side of the applied area.

III. No hindrance shall be caused to the adjoining pattadar's lands while carrying out quarrying operations and transportation of minerals.

IV. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority (SEIAA).

4. In view of the above, you are hereby directed to submit mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval of the Assistant Director of Geology and Mining, Tenkasi within a period of 90 days from the date of receipt of this notice as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

5. You are further directed to produce Environmental Clearance obtained from the State Level Impact Assessment Authority (SEIAA) as required under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease for quarrying Roughstone and Gravel in respect of the precise area communicated.

18/12/24

Assistant Director,
Geology and Mining,
Tenkasi.

18/12/24

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

ANNEXURE II

அனுமைப்படிவ எண் 23

மாவட்டம். திருநெல்வேலி கட்டபொம்மன்

எண். 65

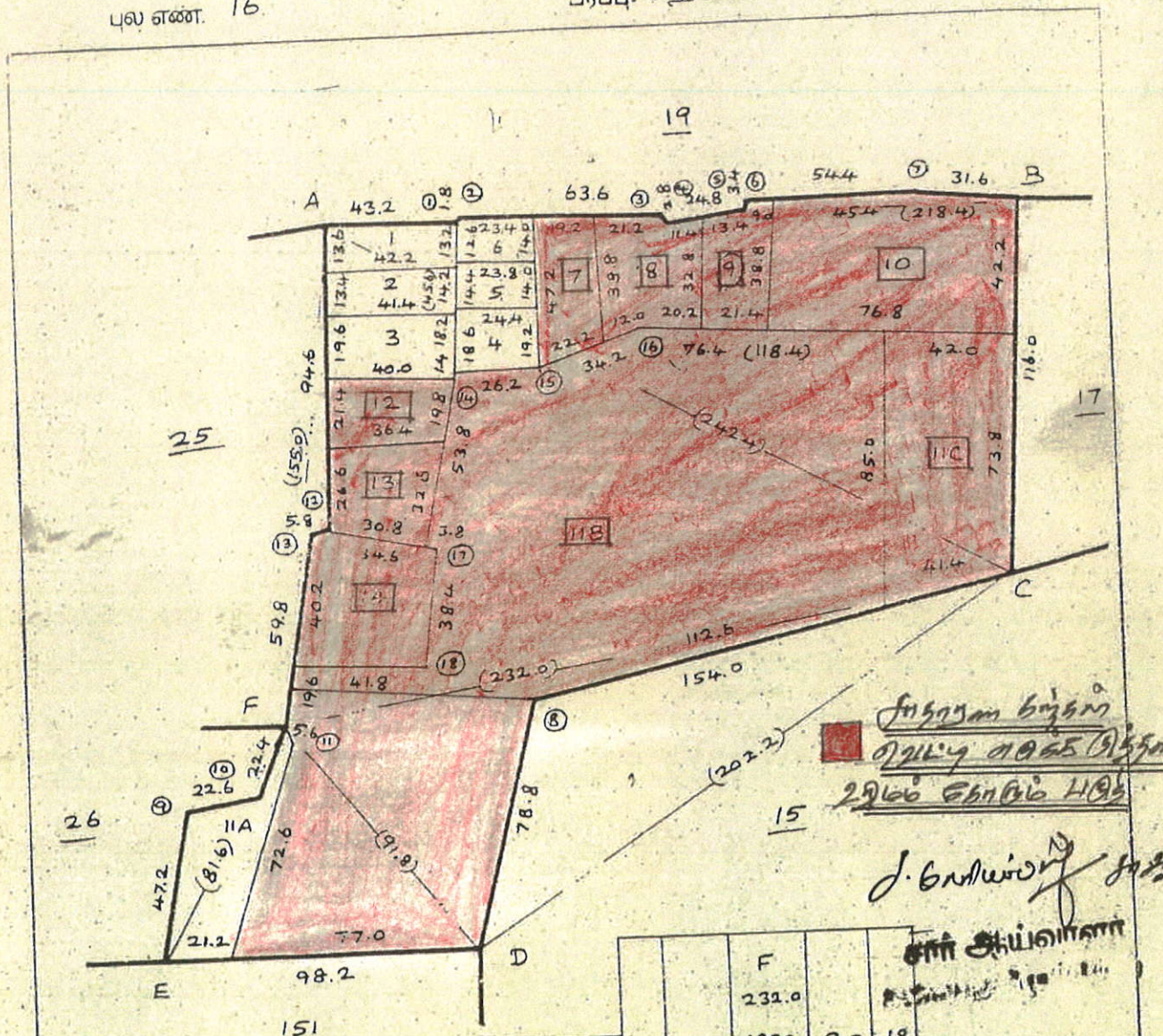
கிராமம்

பெயர். மேல கலிங்கல்

வட்டம் வீரகேரளம்புதூர்

புல எண். 16.

பரப்பு: ஹெக்டேர் 3 ஏர். 65.5.



சாதாரண கற்கள்
எடுப்பு எல்லை குறிக்கப்பட்டுள்ள
பகுதி தொகும் பகுதி

J. சொலையப்பன் தாஸ்.
சார் ஆய்வாளர்

											F			
											232.0			
											185.2	9.0	18	
											174.2	45.6	17	
											C			
											242.4			
										B	104.6	192.4		
										16	16.2	103.2		
												80.4	9.4	15
												57.6	21.8	14
												A		
												F		
												155.0		
												C		
										13	3.2	95.4		
												∴		
8	53.6	∴ 57.8					∴							
		D			12	8.8	94.0							
		B					A							
		218.4					F							
7	3.0	187.6					81.6							
6	0.6	133.4					77.0	3.0	11					
		132.8	3.0	5			58.8	2.0	10					
		107.8	3.2	4	9	15.6	45.0							
		107.0	0.6	3			E							
		43.2	1.0	2			C							
							202.2							
1	0.8	43.2					∴							
		A												

151

வரைந்தவர்: C. அருள்ராஜ் 10.11.92.

அளவு. 1மி.மீ : 2000 மி.மீ

வருவாய் உதவி ஆட்சியர்
வீரகேரளம்புதூர்.

LEASE APPLIED AREA

மாவட்டம். திருநெல்வேலி கட்டபொம்மன்

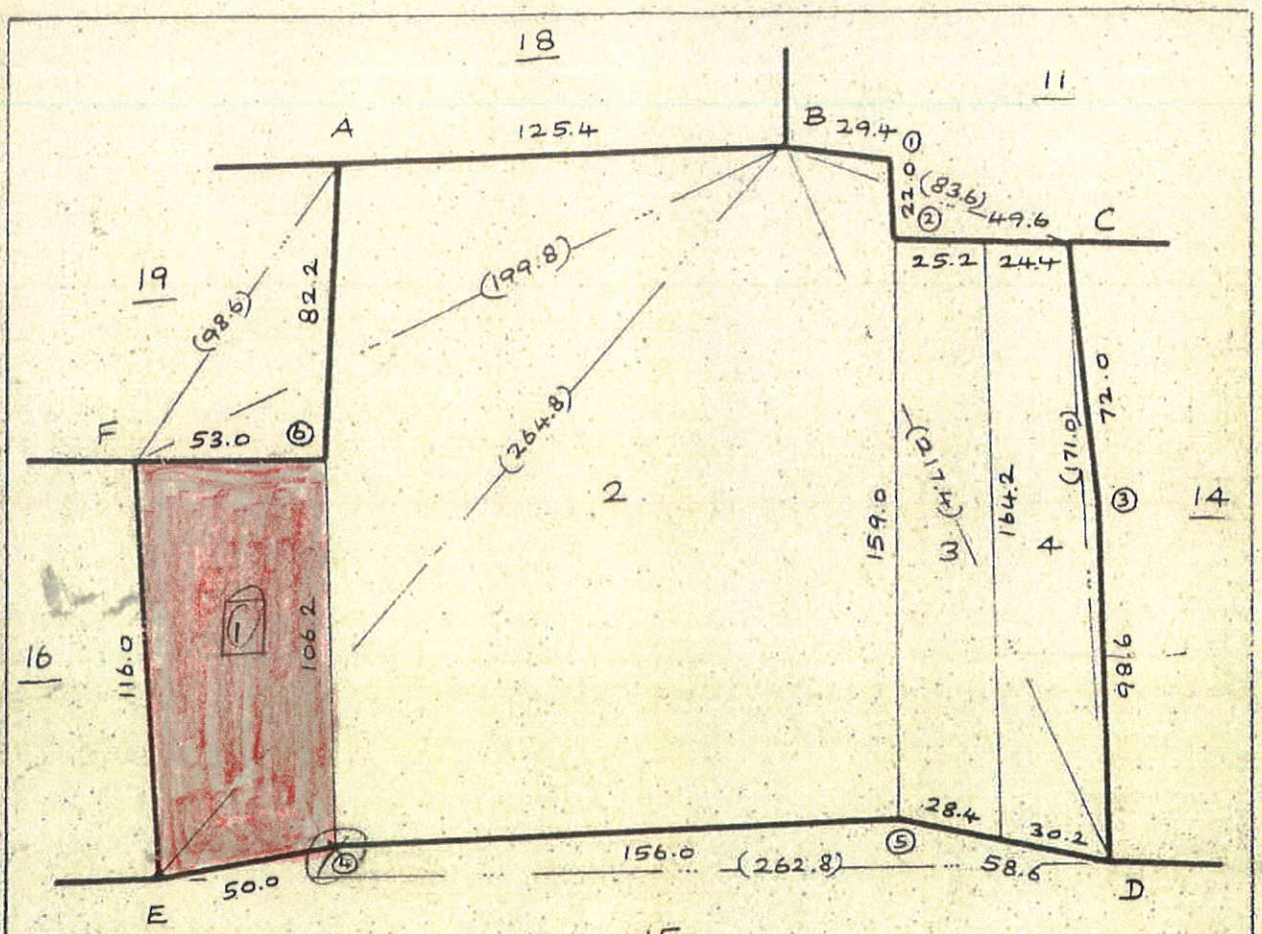
வட்டம். வீரகேரளம்புதூர்

எண்.

கிராமம்

பெயர். மேலகலிங்கல்

புல எண். 17 பரப்பு: ஹெக்டேர் 4 ஏர். 35-5



சாதாரண கற்கள் வெட்டி எடுக்க பேரூராட்சி உரிமம் கோரும் பகுதி

		E							
		264.8					D		
		181.6	81.8	F			262.8		
		B			5	13.6	205.8		
		F			4	8.4	49.4		
		98.6					E		
6	440	698					C		
		A					171.0		
		F					98.6	2.8	3
		199.8					D		
		114.4	50.0	A			C		
		B					83.6		
		217.4					36.4	14.4	2
		159.4	60.4	C	1	6.0	28.8		
		D					B		

J. சையத் அலி
சார் ஆய்வாளர்

வருவாய் வட்டாட்சியர்
வீரகேரளம்புதூர்.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

வரைபு:
19.11.92.

அளவு. 1 கி.மீ : 2000 கி.மீ

LEASE APPLIED AREA

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

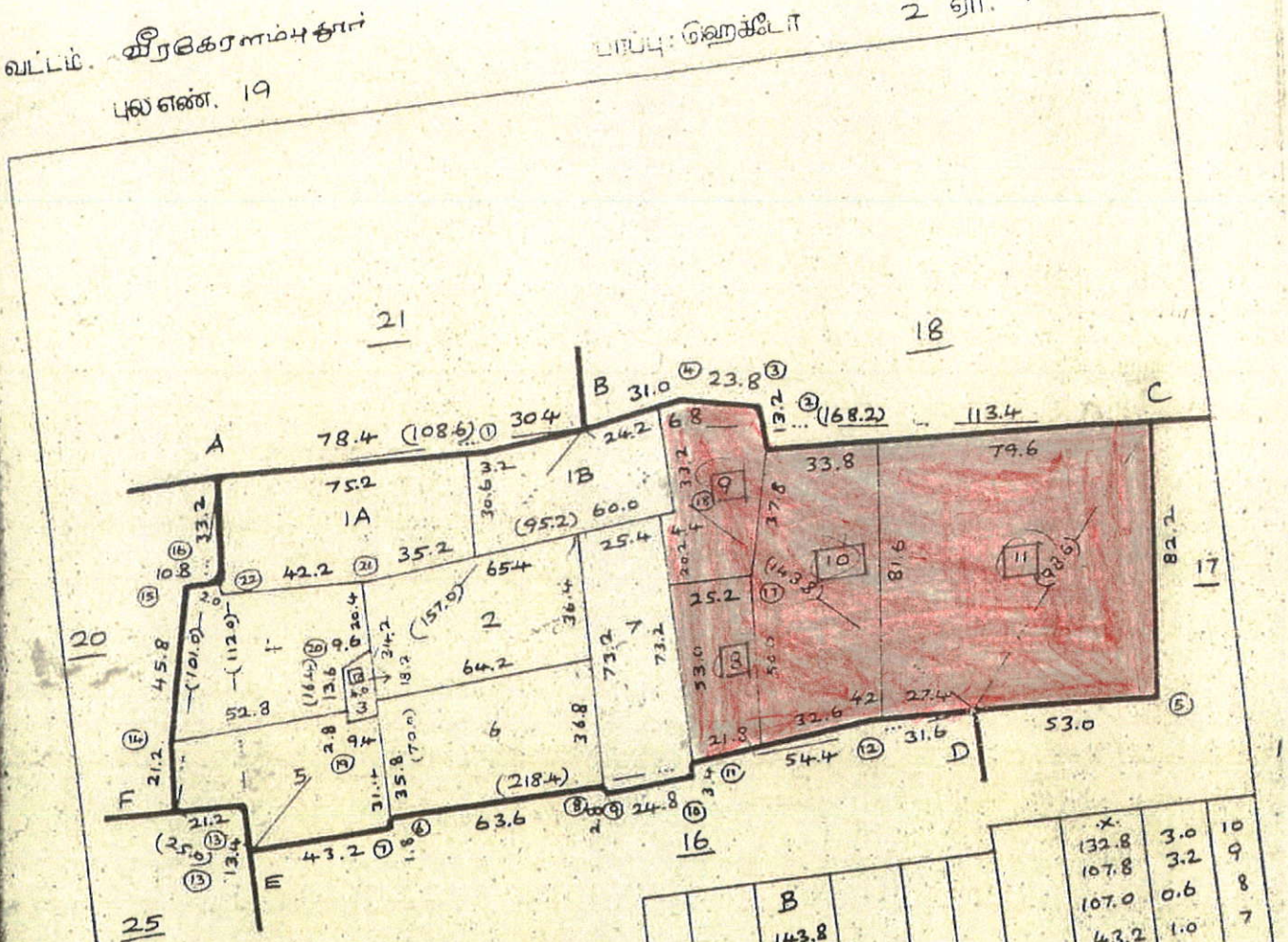
மாவட்டம். திருநெல்வேலி கட்டபொம்மன்

கிராமம் { எண்.
பெயர். இலந்தகுளிங்கல்

வட்டம். வீரகேரளம்புதூர்

புல எண். 19

பரப்பு: ஹெக்டேர் 2 ஏர்.



சாதாரண கற்கள் வெட்டு எடுக்க குத்தகை உரிமம் கோரும் பகுதி

		A									
		112.0									
22	2.0	76.2									
F	21.4	13.4									
		E									
		B									
		157.0									
21	23.6	82.2									
A	77.8	81.0									
1	8.2	62.0									
1	5.2	59.4									
20	11.8	59.0									
19	0.4	47.0									
		E									

		B									
		143.8									
18	4.0	106.2									
17	5.6	76.6									
		D									
		A									
		101.0									
		68.0	5.2	16	5	440					
15	5.4	66.4									
14	3.6	21.0									
		F									
		25.0									
		7.6	11.2	13							
		E									
		D									
		218.4									
12	3.0	187.6									
11	0.6	133.2									
		.x.									

		.x.									
		132.8	3.0	10							
		107.8	3.2	9							
		107.0	0.6	8							
		43.2	1.0	7							
6	0.8	43.2									
		E									
		D									
		98.6									
		69.8									
		C									
		B									
		168.2									
		138.6	.6	4							
		115.0	6.6								
2	6.8	112.8									
D	84.4	51.6									
		C									
		B									
		108.6									
		78.4	2.8								
		A									

அளவு. 1 மி.மீ : 2000 மி.மீ

LEASE APPLIED AREA

வரைவு:
வெ. அருணாச்சலம்
11.11.92

கருவாய் வட்டாட்சியர்
வீரகேரளம்புதூர்.

MINING PLAN APPROVED
By
Director

ANNEXURE IV

ANNEXURE IV

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tenkasi Dist.

தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : தென்காசி வட்டம் : வீரகேரளம்புதூர்

வருவாய் கிராமம் : மேலக்கலங்கல் பட்டா எண் : 1622

உரிமையாளர்கள் பெயர்

1. சண்முகவேலு மகன் செந்தில்குமார்

புல எண்	உ.பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
16	10	0 - 33.00	0.30	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	11B	1 - 99.00	1.92	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	11C	0 - 31.50	0.29	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	12	0 - 7.50	0.07	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	13	0 - 9.00	0.08	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	14	0 - 15.50	0.14	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	7	0 - 9.00	0.08	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	8	0 - 10.00	0.09	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	9	0 - 7.50	0.07	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
17	1	0 - 55.00	0.50	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	10	0 - 31.50	0.63	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	11	1 - 64.50	1.30	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	6	0 - 23.00	0.46	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	8	0 - 11.00	0.22	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	9	0 - 14.00	0.28	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
4	1A	0 - 25.50	0.51	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
4	1C	0 - 7.00	0.14	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
4	2A	0 - 2.50	0.06	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
		6 - 56.00	7.14					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **34/10/005/01622/50521** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 24-07-2024 அன்று 06:24:53 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1433

ஆம் பசலியில் தேனிகாரி மாவட்டம் விருதுநகர் கிராமக் கணக்கு வட்டம் இலக்கியம்பட்டி

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாருடைய பெரும் எண்ணும் அல்லது அனுபோக தாருடைய பெயர்.	காருபடி யாளரின் பெயர்.	முதல் போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	பரப்பு.	தீர்வை.	ஒரு போகம் அல்லது இரு போகம்.		நிலத்தின் எந்த பகுதி யாரது காருபடியாளரால் பயிரிடப்பட்டுள்ளதோ	எந்த மாதத்தில் பயிர் செய்யப்பட்டது அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடை யான பரப்பு.	உண்மையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விபரக்காரு.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
16	7	0.090	0.08	1622	அரசினில்கொண்						
–	8	0.100	0.09	1622	—ம—						
–	9	0.075	0.07	1622	—ம—						
–	10	0.330	0.30	1622	—ம—						
–	11B	1.770	1.92	1622	—ம—						
–	11C	0.315	0.29	1622	—ம—						
–	12	0.075	0.07	1622	—ம—						
–	13	0.090	0.08	1622	—ம—						
–	14	0.155	0.14	1622	—ம—						
17	1	0.550	0.50	1622	—ம—						
19	6	0.230	0.46	1622	—ம—						
–	8	0.140	0.22	1622	—ம—						
–	9	0.140	0.28	1622	—ம—						
–	10	0.345	0.63	1622	—ம—						
–	11	1.445	1.30	1622	—ம—						
4	1B	0.255	0.51	1622	—ம—						
–	1C	0.070	0.14	1622	—ம—						
–	2A	0.025	0.06	1622	—ம—						
					உண்மையான						

கிராம நிர்வாக அலுவலர்
மேலக்கோவில்பட்டி கிராமம்
வீரகேரளம்புதூர் வட்டம்

380/2 RF III A-10-20,00,000 Cps.-GBP.-MDU.-7-2021.

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.					கிராம அலுவலரின் குறிப்புரை – (1) புலக்களின் பகுதிகளில் பயிரிடப்பட்ட இனங்களில் வர்க்குகள் அமையில். (2) வகைபற்றில் இல்லாத நிலம்–களின் சாகுபடியின் பரப்பு தனியாகவும் (3) முக்கியமாக பாகத்தில் பாய்ச்சல் ஆதாரங்கள் பயிரிடப்பட்டவை எவ்வு பதிவுகளிலுள்ள நிலம்–களுக்கு பிந்தைய மாதங்களில் நீர் பாய்ச்சப்பட்ட விவரங்கள்.	கிடைக்கப்பெறுகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பயிரின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்	பயிர் பாய்ச்சலும், அறுவடை குறித்தவைகளும்.
எந்த மாதத்தில் பயிர் செய்யப்பட்டது அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு.	உண்மையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விபரக்காரு.		(அ) வளம். (ஆ) பயன்ற பயிர் செய்ய இயலாத நிலை. (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலை. (ஈ) பயிரிடத்தக்க தரிசு (உ) நிலையான பல் தனாகளும் பற்றும் இதர மேய்ச்சல் நிலங்களும். (ஊ) விதைக்கப்பட்ட நிகர பாயில் சேர்க்கப்படாத மாயகைப் பயிர்களும் தோப்புகளும். (எ) நடப்பத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்	
(13)	(14)	(15)	(16)	(17)	(18)	(18அ)	(19)
						தேனிகாரி கல்லினை	

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ANNEXURE V

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ANNEXURE V

65. மேலக்கலங்கல் கிராமம்.

1	2	3	4	5	6	7	8	9	10	11
							ரூ. பை.	ஏ.மெ.	ரூ. பை.	
16	1	..	ர	பு	..	8-4	6	0 37	0 14	0 06	143 ப. சண்முகவேலாயுத தேவர்.
	2	..	ர	பு	..	8-4	6	0 37	0 13	0 06	425 அ. வெண்ணிமாலை தேவர்.
	3	..	ர	பு	..	8-4	6	0 37	0 20	0 07	95 பெ. காளியம்மாள்.
	4	..	ர	பு	..	8-4	6	0 37	0 11	0 06	247 க. பண்டாரக்கண்ணு தேவர்.
	5	..	ர	பு	..	8-4	6	0 37	0 09	0 06	71 இ. சந்தசாமித் தேவர்.
	6	..	ர	பு	..	8-4	6	0 37	0 09	0 06	341 ப. மேலவாசு தேவர்.
	7	..	ர	பு	..	8-4	6	0 37	0 22	0 08	295 பி. பெருமாள் தேவர்.
	8	..	ர	பு	..	8-4	6	0 37	0 25	0 09	248 பி. பண்டாரக்கண்ணுத் தேவர்.
	9	..	ர	பு	..	8-4	6	0 37	0 18	0 07	296 பி. பெருமாள்.
	10	..	ர	பு	..	8-4	6	0 37	0 82	0 30	248 பி பண்டாரக்கண்ணு தேவர்.
	11	..	ர	பு	..	8-4	6	0 37	6 02	2 23	568 ப. சண்முக வேலாயுதத் தேவர் (1), ப. சுப்பையா (2), சி. மேலவாசு தேவர் (3).
	12	..	ர	பு	..	8-4	6	0 37	0 18	0 07	248 பி. பண்டாரக்கண்ணு தேவர்.
	13	..	ர	பு	..	8-4	6	0 37	0 22	0 08	332 க. முத்தாயி.
	14	..	ர	பு	..	8-4	6	0 37	0 38	0 14	341 ப. மேலவாசு தேவர்.
									9 03	3 34	
17	1	..	ர	பு	..	8-4	6	0 37	1 36	0 50	185 இ. சுடலைகண்ணு தேவர்.
	2	..	ர	பு	..	8-4	6	0 37	7 18	2 66	248 பி. பண்டாரக்கண்ணு தேவர்.
	3	..	ர	பு	..	8-4	6	0 37	1 02	0 38	250 சி. பண்டாரக்கண்ணு தேவர்.
	4	..	ர	பு	..	8-4	6	0 37	1 20	0 44	248 பி. பண்டாரக்கண்ணு தேவர்.
									10 76	3 98	
18	1	..	ச	தி.த.	..	..	..	..	1 22	..	....
	2	..	ர	பு	..	8-4	6	0 37	10 08	3 73	499 சி. பண்டாரக்கண்ணுத் தேவர் (1), சி. மேலவாசகத் தேவர் (2), சி. சுப்பையாத் தேவர் (3), சி. மேலவாசகத் தேவர் (4).
									11 30	3 73	
19	1	..	ர	பு	..	7-3	4	0 81	1 06	0 86	186 இ. சுடலைகண்ணு தேவர்.
	2	..	ர	பு	..	7-3	4	0 81	0 55	0 45	247 க. பண்டாரக்கண்ணு தேவர்.
	3	..	ர	பு	..	7-3	4	0 81	0 04	0 06	569 பி. பெருமாள் (1), பி. பண்டாரக்கண்ணு (2), ப. மேலவாசு தேவர் (3).
	4	..	ர	பு	..	7-3	4	0 81	0 52	0 42	247 க. பண்டாரக்கண்ணு தேவர்.
	5	..	ர	பு	..	7-3	4	0 81	0 48	0 39	341 ப. மேலவாசு தேவர்.
	6	..	ர	பு	..	7-3	4	0 81	0 57	0 46	248 பி. பண்டாரக்கண்ணு தேவர்.
	7	..	ர	பு	..	7-3	4	0 81	0 46	0 37	333 க. முத்தம்மாள் என்கிற முத்தாட்சி.
	8	..	ர	பு	..	7-3	4	0 81	0 27	0 22	293 இ. பெருமாள் தேவர்.
	9	..	ர	பு	..	7-3	4	0 81	0 34	0 28	230 மா. இருமால் தேவர்.
	10	..	ர	பு	..	7-3	4	0 81	0 78	0 63	341 ப. மேலவாசு தேவர்.
	11	..	ர	பு	..	7-3	4	0 81	1 60	1 30	355 ப. ராமசாமி.
									6 67	5 44	
9	1	..	ர	பு	..	4-4	4	0 81	0 31	0 25	185 ப. சுடலைமாடப்ப தேவர்.
	2	..	ர	பு	..	4-4	4	0 81	0 34	0 28	184 ஊ. சுப்பையா தேவர்.

வருவாய் கோட்டாட்சியர்
வீரகேரளம்புதூர்.

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1	2	3	4	5	6	7	8	9	10	11	12
16	IIA							0.13.0	0.12	264. சி. அப்பாவுப் தேவர்	
	IIB							1.99.0	1.92	639. ப. கண்டுகு வேலாயுத தேவர்@ சு. குருவைகளை தேவர்@ சு. கொர்ணம்மாள்@	
	IIC							0.31.5	0.29	887. மே. கடற்கரை வேல் தேவர்	
								2.43.5	~~0.33~~ 1.33		
19	IA							0.25.5	0.51	314. கா. பெரியகாளித் தேவர்	
	IB							0.17.5	0.35	343. வெ. மாடப்பத் தேவர்	
								0.43.0	0.86		
20	2A							0.09.5	0.19	315. தி. பெரிய காளி தேவர்	
	2B							0.04.5	0.09	205. சு. சுப்பையாத் தேவர்	
								0.14.0	0.28		

உண்மைக்கே!
கிராம நிர்வாக அலுவலர்
5, மேலகருவாக்கல் கிராமம்
வீரகேரளம்புதூர் வட்டம்

Prepared by
S Ravi
21/1/86

Checked
3/3/86.

1	2
16	1 ..
	2 ..
	3 ..
	4 ..
	5 ..
	6 ..
	7 ..
	8 ..
	9 ..
	10 ..
	11 ..
	12 ..
	13 ..
	14 ..
17	1 ..
	2 ..
	3 ..
	4 ..
18	1 ..
	2 ..
19	1 ..
	2 ..
	3 ..
	4 ..
	5 ..
	6 ..
	7 ..
	8 ..
	9 ..
	10 ..
	11 ..
0	1 ..
	2 ..

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ANNEXURE ५५

தமிழ்நாடு தமிழ்நாடு TAMILNADU

BF 206869

19.08.2024.

கோ.மலர்க்கொடி
முத்திரைத்தாள் விற்பனையாளர்
[illegible]

தி. செந்தில்குமார், கரையாளனூர்.
சி. சுப்பிரமணியன், புன்னையாபுரம்

குத்தகை ஆவணம்

19.08.2024

தென்காசி மாவட்டம், வீரகேரளம்புதூர் தாலுகா, குறிச்சாம்பட்டி கிராமம், மஜரா கரையாளனூர் ஊரில், நடுத்தெருவில், கதவுஎண் 3/75 நீர் வீட்டில் வசித்து வரும் திரு.மு.சண்முகவேலு அவர்கள் குமாரர் சுமார் 35 வயதுள்ள திரு.ச.செந்தில்குமார்-1 நபராகவும் (குத்தகைவிடுபவர்) (ஆ.எண்.3851 1138 3202)

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

13/24 1986

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தமிழ்நாடு தமிழ்நாடு TAMILNADU

BF 206870

19.08.2024.

சி. செந்தில்குமார், கூரையாளர்

சி. சுப்பிரமணியன், புன்னையாபுரம்

கோ.மலர்க்கொடி
முத்திரைத்தாள் விற்பனையாளர்
மானூர்

..2..

தென்காசி மாவட்டம், கடையநல்லூர் தாலுகா, சொக்கம்பட்டி கிராமம் மஜரா புன்னையாபுரம் ஊரில், வடக்கு தெருவில், கதவுஎண் 4/196 நீர் வீட்டில் வசித்து வரும் திரு.சண்முகவேல் அவர்கள் குமாரர் சுமார் 41 வயதுள்ள திரு.சுப்பிரமணியன்-2 நபராகவும் (குத்தகைபெறுபவர்) (ஆ.எண்.4485 3135 2047)

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1956

வது தான் பதிவுசெய்பவர்

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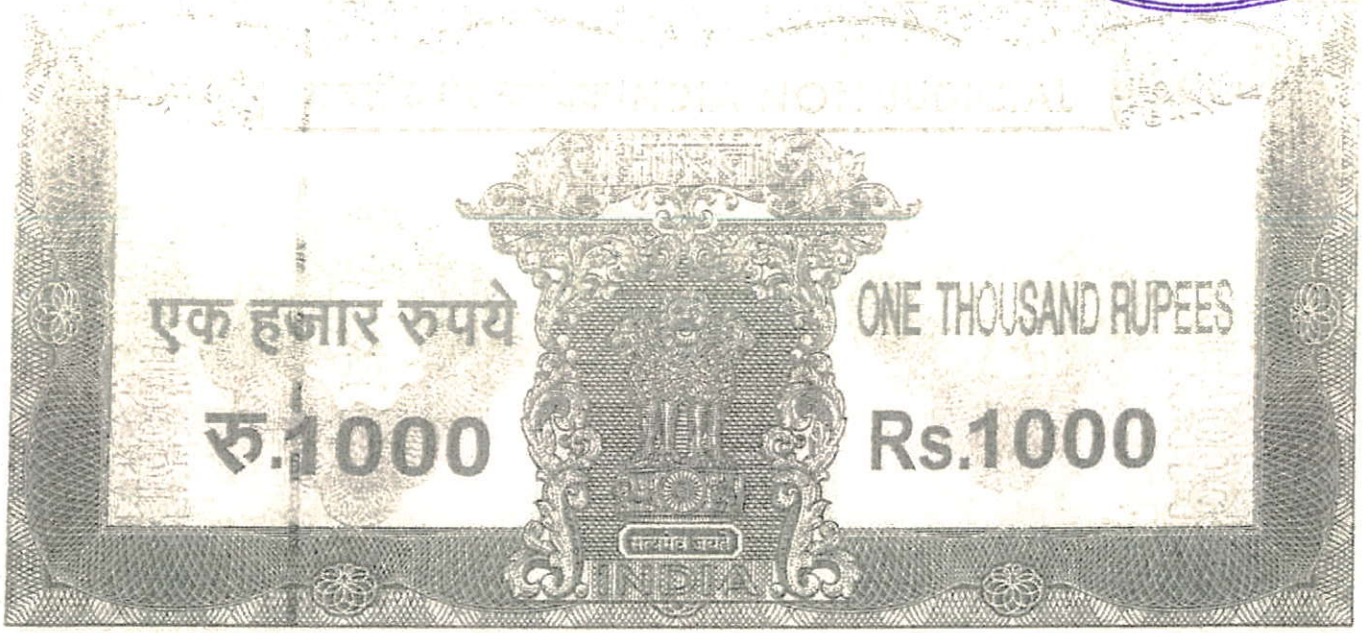

தமிழ்நாடு तमिलनाडु TAMILNADU

BF 206871

19.08.2024.

கோ.மலர்க்கொடி
முத்திரைத்தாள் விற்பனையாளர்
ஊத்துமலை
உரிமம் எண் 9/2009/மா.ப.தென்

சி. செந்தில்குமார், கரையாளனூர்
சி. சிவபிரமணியன், புன்னையாபுரம்

..3..

நம்மில் 1வது நபருக்கு கடந்த 23.05.2024 தேதியில் ஊத்துமலை சார்பதிவகம் ஆவணஎண் 1.1197/2024 நீர் கிரைய பத்திரத்தின் பிரகாரம் சுயார்ஜித்மாய் உரிமைப்பட்டும், பாத்தியப்பட்டும், பட்டா எண் 1622 நீராக நம்மில் 1வது நபரின் பெயரால் தனிப்பட்டா ஏற்பட்டும், பட்டா எண்கள் 858 1217,1478 நீராக கூட்டுப்பட்டா ஏற்பட்டும், நாளதுதேதிவரை நம்மில் 1வது நபரின் தனித்த ஆளுகையிலும், அனுபவத்திலும் இருந்து வருகிற இதன

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1 2024 1956
13
3

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தபசில் சொத்துக்களைப் பொறுத்து நம்மில் 2வது நபருக்கு இந்த குத்தகை ஆவணம்மூலம் சாதாரண கற்கள் மற்றும் கிராவல்மண் எடுக்கும் காரியத்திற்காகவும், - மாண்புமிகு.தென்காசி மாவட்ட ஆட்சித்தலைவர் அவர்களிடம் விண்ணப்பம் செய்து, உரிய உரிமம் பெற்று, தொழில் செய்துவரும் வகைக்காக நாளதுதேதியிலிருந்து வருகிற 20.08.2039 தேதிவரையிலான 15வருடத்திற்கு குத்தகைக்கு கொடுப்பதாக நம்மில் 1வது நபர் ஒப்புக்கொண்டு, வருடம் ஒன்றுக்கு ரூ.25,000/- வீதம் மேற்படி 15வருடத்திற்கும் ரூ.3,75,000/- (ரூபாய்.மூன்றுலட்சத்தி எழுபத்தி ஐந்தாயிரத்திற்கு மட்டும்) நம்மில் 2வது நபரிடமிருந்து நம்மில் 1வது நபர் ரொக்கமாக பெற்று கொண்டுவிட்டபடியால் தபசில் சொத்துக்களைப் பொறுத்து நம்மில் 1வது நபர் மேற்படி வாய்தாகாலம் வரை, தேவையான சாதாரணகற்கள் மற்றும் கிராவல்மண் எடுத்துக்கொள்ளவேண்டியது என்றும், மேற்படி வாய்தாகாலம் முடிந்தபின்பு, தபசில் சொத்துக்களை நல்லநிலைமையில் நம்மில் 2வது நபர், நம்மில் 1வது நபர் வசம் ஒப்படைத்து போகவேண்டியது என்றும், நாம் இருசாராரும் மனப்பூர்வமாக சம்மதித்து கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு இந்தகுத்தகை ஒப்பந்த பத்திரத்தில் நாம் இருவரும் கையெழுத்து செய்துள்ளோம்.

நிபந்தனைகளின் விவரமாவது:

1. குத்தகை சொத்துக்களில் குத்தகை பெறுபவராகிய 2வது பார்ட்டியார் சாதாரண கற்கள் மற்றும் கிராவல் மண் எடுக்கும் காரியத்திற்காக மட்டும் உபயோகித்துக் கொள்ள வேண்டியது.
2. தபசில் சொத்துக்களைப்பொறுத்து மேற்படி குத்தகைகாலம் வரையில், குத்தகை விடுபவராகிய 1வது பார்டியார், எந்தவிதமான தாவா, வில்லங்கம், விவகாரம், நீதிமன்ற பற்றுகை போன்ற இடையூறுகளையும் செய்வதில்லை என்று உறுதியளிக்கிறார்.

குத்தகைவிடுபவர் குத்தகை பெறுபவர்

ஆவணம் 13 ..... 1956 ..... 4 .....

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3. கனிமவளத்துறையின் மூலம் குவாரி உரிமம் பெற்று அரசுக்கு செலுத்தவேண்டிய ராயல்பட்டி, வருமானவரி, விற்பனைவரி, GST வரி மற்றும் அதனை சார்ந்த பிற வரிகள் அனைத்தையும் அரசுக்கு செலுத்தவேண்டியது குத்தகை பெறுபவராகிய 2வது பார்டியாரையே சார்ந்ததாகும். குத்தகை விடுபவராகிய 1வது பார்டிக்கு மேற்படி வரி சம்மந்தப்பட்ட விவகாரங்கள் எதுவும் சம்மந்தமில்லை என்றும், மேற்படி வரிசம்மந்தமான விவரங்கள் எதுவும் நம்மில் 1வது பார்டியை எந்தவிதத்திலும் கட்டுப்படுத்தாது என்றும் நம்மில் 2வது பார்டி உறுதியளிக்கிறார்.
4. தபசில் சொத்துக்களைப்பொறுத்து மராமத்து பணிகள் செய்யவேண்டிய அனைத்து செலவினங்களும், குத்தகைபெறுபவராகிய 2வது பார்டியாரையே சார்ந்தது என்றும்,மேற்படி செலவு சம்மந்தமாக குத்தகை விடுபவராகிய 1வது பார்ட்டியாரை எவ்விதத்திலும் கட்டுப்படுத்தாது.
5. தபசில் சொத்துக்களுக்கு உண்டான அரசுக்கு செலுத்தவேண்டிய நிலவரியை நிலஉரிமையாளராகிய குத்தகை விடுபவராகிய 1வது பார்ட்டியாரே உரிய வகையில் வருடாந்தோரும், நிலவரி பசலி ஆண்டில் வருவாய் செலுத்தி அதற்கான ரசீது பெற்றுக்கொள்ளவேண்டியது.
6. குத்தகை காலம் முடியும்வரை தபசில் சொத்துக்களைப்பொறுத்து குத்தகை விடுபவரும், குத்தகை பெறுபவராகிய நாம் இருவரும் எவ்வித வில்லங்க பாராதினங்களுக்கும் உட்படுத்துவதில்லை என்றும், மனப்பூர்வமாக சம்மதிக்கிறோம்.

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1950

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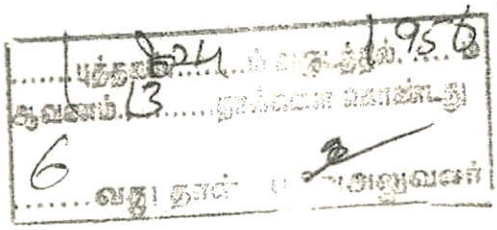
7. குத்தகை காலம் முடிந்தபின்பு தபசில் சொத்துக்களில் எவ்விதமான சாதாரண கற்கள் மற்றும் கிராவல் மண் ஆகிய எதையும், நம்மில் 2வது பார்ட்டி எடுத்து பயன்படுத்தகூடாது என்றும், சொத்துக்களை நல்லநிலைமையில் நம்மில் 1வது பார்ட்டியிடம் ஒப்படைத்து போகவேண்டியது.
8. தபசில் சொத்துக்களைப்பொறுத்து குத்தகை பெறுபவராகிய நம்மில் 2வது பார்ட்டியாருக்கு இந்த ஆவணம் மூலம் குத்தகை வழங்கியுள்ளதை தவிர, வேறு எவருக்கும் உள்குத்தகைக்கு விடவில்லை என்று - குத்தகை விடுபவராகிய நம்மில் 1வது பார்ட்டி உறுதியளிக்கிறார். அதேபோல் குத்தகை பெறுபவராகிய நம்மில் 2வது பார்ட்டியார் வேறு எவருக்கும் தபசில் சொத்துக்களை உள்குத்தகைக்கு விடுவதில்லை என்றும், அவ்விதம் ஏதாகிலும், உள்குத்தகைக்கு விடப்பட்டுள்ளதாக தெரியவந்தால் இந்த குத்தகை ஆவணமானது நம்மில் 2வது பார்ட்டிக்கு செல்லத்தக்கதல்ல. என்றும், குத்தகை பெறுபவராகிய நம்மில் 2வது பார்ட்டியார் உறுதியளிக்கிறார்.
9. இந்த குத்தகை ஆவணத்தைப்பொறுத்து குத்தகை தொகை சம்மந்தமாக மேற்கொண்டு கூடுதலாக - நம்மில் குத்தகை விடுபவராகிய 1வது பார்ட்டியார் குத்தகை பெறுபவராகிய 2வது பார்டியாரிடம் கேட்டு எவ்விதத்திலும் வில்லங்கம் செய்வதில்லை என்றும், உறுதியளிக்கிறார்.

குத்தகைவிடுபவர்

குத்தகைபெறுபவர்



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மேற்க்கண்ட நிபந்தனைகளின்படி நாம் இருபார்ட்டியாரும் நடந்துக்கொள்வோம் என்று மனப்பூர்வமாக சம்மதித்து ஒப்புக்கொண்டும், இந்த குத்தகை ஆவணத்தில் கண்ட சரத்துக்களை எதுவும் நாம் இருவரும் மீறுவதில்லை என்றும், உறுதியளித்து இதில் நாம் இருவரும் கையெழுத்து செய்துள்ளோம்.

தபசில் விவரம்

1) தென்காசி பதிவு மாவட்டம், ஊத்துமலை சார்பதிவகம், வீரகேரளம்புதூர் தாலுகா, **மேலக்கலங்கல் கிராமம்**, ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 4/1A** நீரில் செண்டு 63க்கு ஹெக்டேர் 0.25.50 முழுவதும்

2) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 4/1C** நீரில் செண்டு 17.30க்கு ஹெக்டேர் 0.07.00 முழுவதும்.

3) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 4/2A** நீரில் செண்டு 6.18க்கு ஹெக்டேர் 0.02.50 முழுவதும்.

4) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/10** நீரில் செண்டு 82க்கு ஹெக்டேர் 0.33.00 முழுவதும்.

5) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/11B** நீரில் ஏக்கர் 4 செண்டு 92க்கு ஹெக்டேர் 1.99.00 முழுவதும்.

6) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/11C** நீரில் செண்டு 78க்கு ஹெக்டேர் 0.31.50 முழுவதும்.

குத்தகைவிடுபவர் குத்தகைபெறுபவர்

1956

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7) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட புஞ்சை சர்வே எண் 16/12 நீரில் செண்டு 19க்கு ஹெக்டேர் 0.07.50 முழுவதும்.

8) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/13** நீரில் செண்டு 22க்கு ஹெக்டேர் 0.09.00 முழுவதும்.

9) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/14** நீரில் செண்டு 38க்கு ஹெக்டேர் 0.15.50 முழுவதும்.

10) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/7** நீரில் செண்டு 22க்கு ஹெக்டேர் 0.09.00 முழுவதும்.

11) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/8** நீரில் செண்டு 25க்கு ஹெக்டேர் 0.10.00 முழுவதும்.

12) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/9** நீரில் செண்டு 19க்கு ஹெக்டேர் 0.07.50 முழுவதும்.

13) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 17/1** நீரில் ஏக்கர் 1 செண்டு 36க்கு ஹெக்டேர் 0.55.00 முழுவதும்.

14) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/10** நீரில் செண்டு 79க்கு ஹெக்டேர் 0.31.50 முழுவதும்.

15) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/11** நீரில் ஏக்கர் 4 செண்டு 06க்கு ஹெக்டேர் 1.64.50 முழுவதும்.

குத்தகைவிடுபவர்

குத்தகைபெறுபவர்

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Tenkasi Dist.

16) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட புஞ்சை சர்வே எண் 19/6 நீரில் செண்டு 57க்கு ஹெக்டேர் 0.23.00 முழுவதும்.

17) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1217 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/7** நீரில் செண்டு 46க்கு ஹெக்டேர் 0.18.50ல் தென்பக்கம் செண்டு 22.51க்கு ஹெக்டேர் 0.09.11 முழுவதும்.

18) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 858 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/3** நீரில் செண்டு 4க்கு ஹெக்டேர் 0.01.50ல் இருக்கும் கிணர் 1ல் ஷை கிணர் அடிநிலம், கிணர் ஜலம், கமலை, கமலைகுழி, பத்தநடை தவணைவாய்க்கால் வழிநடை வகையறாக்களிலும் பிரிவின்றி 4ல் 1பங்கு பாத்தியமும்,

19) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/8** நீரில் செண்டு 27க்கு ஹெக்டேர் 0.11.00 முழுவதும்.

20) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/9** நீரில் செண்டு 35க்கு ஹெக்டேர் 0.14.00 முழுவதும்.

21) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1478 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 5/2** நீரில் ஏக்கர் 6 செண்டு 47க்கு ஹெக்டேர் 2.62.00ல் பிரிவின்றி ஏக்கர் 2 செண்டு 47 க்கு ஹெக்டேர் 1.00.00 முழுவதும் தபசில் விவரம் சரி.

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1956

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மேற்படி சொத்து ஆலங்குளம் ஊராட்சி ஒன்றியத்தை சேர்ந்த மேலக்கலங்கல் கிராம பஞ்சாயத்துபோர்டுஆளுகைக்குஉட்பட்டது.

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

சாட்சிகள்:

1)முருகன், த/பெ.மூக்கையா, 1/52,காளிஅம்மன்கோவில் தெரு, ஊத்துமலை.(ஆ.எண்:7778 7315 7192)

2)ஐயப்பன்,த/பெ.முத்தையாபிள்ளை,14/50,ஆர்.சி.பள்ளிமேலத் தெரு,ஊத்துமலை.(ஆ.எண்:2802 8852 4442)

ஆவணம் தயாரித்தவர்

V.M.THAMILARASAN B.A.B.L
ADVOCATE
Enrolment No.1871/2015
1/215(6) V.M.Complex 1st Floor
BharathiNagar, UTHUMALAI-627860
Tenkasi District
Cell No.97504 27131

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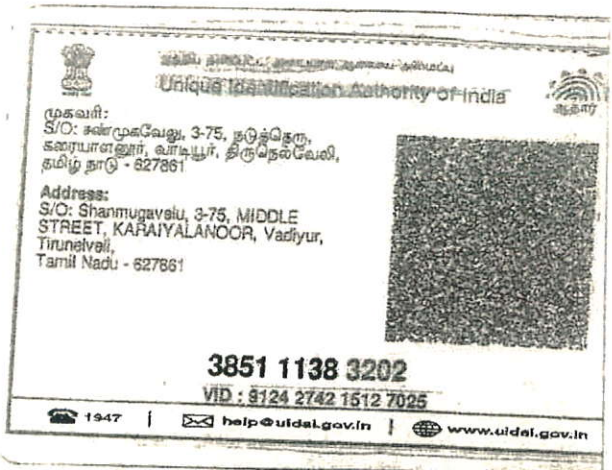
Government of India
Download Date: 14/05/2020
செந்தில்குமார் ச
Santhilkumar S
பிறந்த நாள்/DOB: 10/08/1988
ஆண்/ MALE
Issue Date: 20/08/2017
3851 1138 3202
VID : 9124 2742 1512 7025
எனது ஆதார், எனது அடையாளம்


Unique Identification Authority of India
முகவரி:
S/O: சண்முகவேலு, 3-75, நடுத்தெரு, கரையாளனூர், வாடியூர், திருநெல்வேலி, தமிழ் நாடு - 627861
Address:
S/O: Shanmugavelu, 3-75, MIDDLE STREET, KARAIYALANOOR, Vadiyur, Tirunelveli, Tamil Nadu - 627861
3851 1138 3202
VID : 9124 2742 1512 7025
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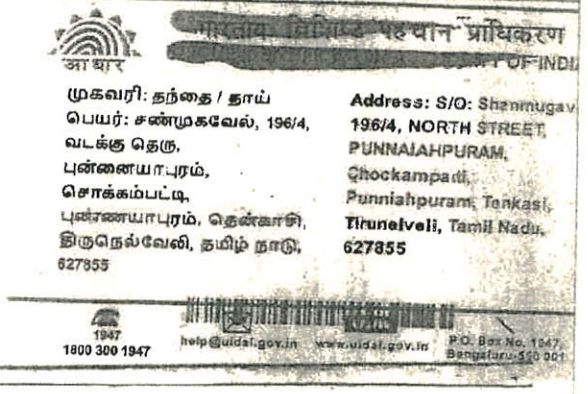
சுப்பிரமணியன்
Subramanian
பிறந்த நாள்/DOB: 10-05-1982
ஆண் / Male
4485 3135 2047
ஆதார் - சாதாரண மனிதனின் அதிகாரம்


आधार
भारत सरकार
GOVT OF INDIA
முகவரி: தந்தை / தாய் பெயர்: சண்முகவேல், 196/4, வடக்கு தெரு, புன்னையாபுரம், சொக்கம்பட்டி, புன்னையாபுரம், தென்காசி, திருநெல்வேலி, தமிழ் நாடு, 627855
Address: S/O: Shanmugav 196/4, NORTH STREET, PUNNAIAHPURAM, Chockampatti, Punniahpuram, Tenkasi, Tirunelveli, Tamil Nadu, 627855
1947
1800 300 1947
help@uidai.gov.in
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P.O. Box No. 1947, Bengaluru-560 001

ஆதார்
ஐயப்பன்
Iyyappan
பிறந்த நாள் / DOB: 08/12/1983
ஆண் / Male
2802 8852 4442
मेरा आधार, मेरी पहचान

AADHAAR
முகவரி: முத்தையா, 14/50, ஆர்.சி பள்ளி மேலத் தெரு, வத்துமலை, வத்துமலை, திருநெல்வேலி, தமிழ் நாடு, 627860
Address: S/O:Muthaiah, 14/50, R.c. School West Street, Uthumalai, Uthumalai, Uthumalai, Tirunelveli, Tamil Nadu, 627860
Print Date: 23/02/2022
2802 8852 4442
1947
help@uidai.gov.in
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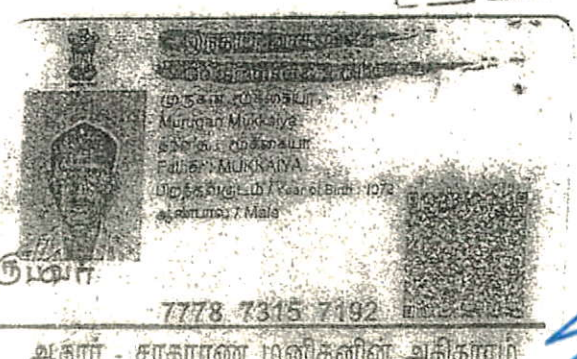
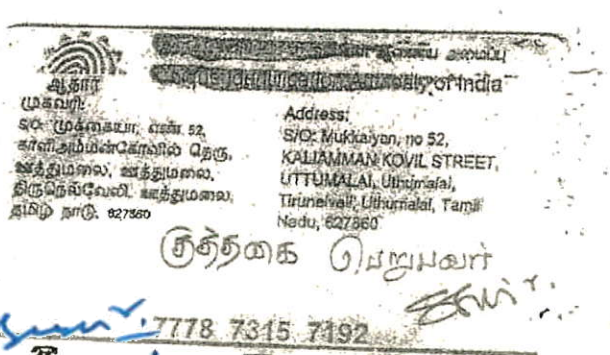

முருகன் முக்கையா
Murugan Mukkaiya
தந்தை: MUKKAIYA
பிறந்த நாள் / Year of Birth : 1972
ஆண்பால் / Male
7778 7315 7192
ஆதார் - சாதாரண மனிதனின் அதிகாரம்


ஆதார்
முகவரி:
S/O: முக்கையா, எண். 52, காளியம்மன்கோவில் தெரு, வத்துமலை, வத்துமலை, திருநெல்வேலி, வத்துமலை, தமிழ் நாடு, 627860
Address:
S/O: Mukkaiyan, no 52, KALIAMMAN KOVIL STREET, UTTUMALAI, Uthumalai, Tirunelveli, Uthumalai, Tamil Nadu, 627860
7778 7315 7192
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1899ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 42வது பிரிவின் கீழான சான்று

2024ம் ஆண்டு வரிசை எண் 1236

3/75, நடுத்தெரு, கரையாளனூர், குறிச்சாம்பட்டி, வீரகேரளம்புதூர், தென்காசி, தமிழ்நாடு, இந்தியா, 627861-ல் வசிக்கும் திரு செந்தில்குமார் என்பவரிடமிருந்து ₹ 755/- (ரூபாய் எழுநூற்று ஐம்பத்தைந்து மட்டும்) இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்.

சார்பதிவாளர் : ஊத்துமலை
நாள்: 19/08/2024

சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு 41ன் படி ஆட்சியர்

2024 ஆம் ஆண்டு ஆகஸ்ட் மாதம் 19ம் தேதி மு.ப. 11:41 மணியளவில் ஊத்துமலை சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ₹ 4,260/- செலுத்தியவர்.

இடது பெருவிரல் 	SENTHIL KUMAR கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி.	
எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல் 	"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:6479673b759e3ad0a74c10aa36d64fb2dbc22d (Details from UIDAI : Senthilkumar S S/O: Shanmugavelu, 10-08-1988, xxxxxxxx3202)	
எழுதி வாங்கியதாக ஒப்புக் கொண்டவர் இடது பெருவிரல் 	"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:196841b343355bb6b346fba34484788ff89589 (Details from UIDAI : Subramanian S/O: Shanmugavel, 10-	

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Tenkasi Dist.

R/ஊத்துமலை/புத்தகம்-1/1956/2024

	05-1982, xxxxxxxx2047)	

2024 ஆம் ஆண்டு ஆகஸ்ட் மாதம் 19ம் நாள்

கா ஷர்மிளா
சார்பதிவாளர்
ஊத்துமலை

R/ஊத்துமலை/புத்தகம்-1/1956/2024 எண்ணாகப் பதிவு செய்யப்பட்டது.

நாள்: 19/08/2024
ஊத்துமலை

கா ஷர்மிளா
சார்பதிவாளர்

.....புத்தகம்2024.....ம் வருடத்தில்19.56.....
ஆவணம்13.....தான்கணை கொண்டது
13.....வது தான் பதிவுசெய்வனர்

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of Geology & Mining
Tenkasi Dist.

ANNEXURE VIII

भारत सरकार

भारतीय विशिष्ट पहचान प्राधिकरण
भारत सरकार
Unique Identification Authority of India
Government of India

आधार

பதிவேட்டு எண்/Enrolment No.: 2040/80271/00100

Subramanian (சுப்பிரமணியன்)

S/O: Shanmugavel, 196/4, NORTH STREET,
PUNNAIAHPURAM, Chockampatti, Tirunelveli,
Tamil Nadu - 627855

Date: 07/08/2016

உங்கள் ஆதார் எண்/ Your Aadhaar No.:

4485 3135 2047

தகவல்

- ஆதார் அடையாளத்திற்கான சான்று, குடியுரிமைக்கு அல்ல.
- அடையாள சான்றை ஆன்லைன் ஆதன்டிகேஷன் மூலமாகப் பெறவும்.
- இது எலக்ட்ரானிக் செயல்முறை மூலம் தயாரிக்கப்பட்ட கடிதமாகும்.

INFORMATION

- Aadhaar is a proof of identity, not of citizenship.
- To establish identity, authenticate online.
- This is electronically generated letter.

Signature valid
Digitally signed by UNIQUE IDENTIFICATION AUTHORITY OF INDIA
Date: 2016.08.07 21:[illegible]:39 IST

எனது ஆதார், எனது அடையாளம்.

1947 | help@uidai.gov.in | www.uidai.gov.in

- ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும்.
- ஆதார் ஆதார் பெறுவதற்கு ஒரே ஒரு முறை மட்டுமே நீங்கள் விண்ணப்பத்தை பூர்த்தி செய்து பதிவு செய்ய வேண்டிய அவசியம் ஏற்படும்.
- தயவுசெய்து உங்களின் சமீபத்தைய புதிய மொபைல் நம்பர் மற்றும் e-மெயில் முகவரியை பதிவு செய்யவும். இதனால் உங்களுக்கு பல்வேறு வசதிகளை பெற்றுக் கொள்ளும் சௌகரியம் கிடைக்கும்.

- Aadhaar is valid throughout the country.
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भारत सरकार
GOVERNMENT OF INDIA

சுப்பிரமணியன்
Subramanian
பிறந்த நாள்/ DOB: 10/05/1982
ஆண் / MALE

4485 3135 2047

எனது ஆதார், எனது அடையாளம்.

AADHAAR
भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

முகவரி:
தந்தை / தாய் பெயர்:
சண்முகவேல், 196/4,
வடக்கு தெரு,
புன்னையாபுரம்,
சொக்கம்பட்டி,
திருநெல்வேலி,
தமிழ் நாடு - 627855

Address:
S/O: Shanmugavel, 196/4,
NORTH STREET,
PUNNAIAHPURAM,
Chockampatti, Tirunelveli,
Tamil Nadu - 627855

4485 3135 2047

[illegible]AADHAAR, MERI PEHACHAN

MINING PLAN APPROVED By Director of Geology & Mining Tenkasi Dist.

ANNEXURE IX

CHETTINAD CEMENT CORPORATION LTD.,

(Regd. Office: RANI SEETHAI HALL BUILDING IV & V FLOORS, 603, ANNA SALAI, MADRAS-600006.)
WORKS OFFICE : PULIYUR.

TELE: PHONE 21144 / 22744 / 21745 KARUR
GRAM "CEMENT" Puliyur C.F.
Telex: 0456-215.
STD Code: 04324

All Correspondences to
Kumararajah Muthiah Nagar,
PULIYUR CEMENT FACTORY POST 639114.
(Karur Taluk, Trichy Dt.)

T.RAJU.,B.E.,
MINES MANAGER & DY.GENERAL MANAGER.

22nd September,1987.

CERTIFICATE.

This is to certify that Mr.C.Natarajan has been working as a Geologist from 14-12-1979 to till date. He has been incharge of supervision of day to day functions in respect of Exploration, Preparation of Geological Plans & Sections, Preparation of Mines Plans, and Quality control and other allied mining activities in the following Pits of our Seethainagar Limestone Mines in Anna District.

Name of the Pit.		Average Raising/day.
1. Alambadi Pit.	-	1,700 T.
2. Mallapuram Pit.	-	900 T.
3. Karikkali Pit.	-	150 T.
Total.	-	2,750 T.

He has got nearly Eight years of total experience in our Mines in the above supervisory capacity.

for CHETTINAD CEMENT CORPORATION LTD.,

(T.RAJU).
Mines Manager & Dy. General Manager.

3209.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

ANNAMALAI UNIVERSITY

Faculty of Science

The Senate of the Annamalai University hereby makes known that E. Natarajan has been admitted to the Degree of Master of Science (by Examination) in Geology, he having been certified by duly appointed Examiners at the examination held in April, 1976, to be qualified to receive the same and that he was placed in the First Class.

Given under the seal of the University.

Annamalainagar
8th December, 1976.

A. Chandrasekha
Vice-Chancellor.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi

PLATE NO: I
DATE OF SURVEY : 18.12.2024

APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY LEASE APPLIED AREA:

S.F.NOS :16/7,16/8,16/9,16/10,16/11B(P),
:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

Q. L. APPLIED. AREA :

TOPO SHEET NO: 58 G/ 08

LATITUDE :09°02'11.42"N to 09°02'20.32"N

LONGITUDE :77°29'32.60"E to 77°29'41.40"E

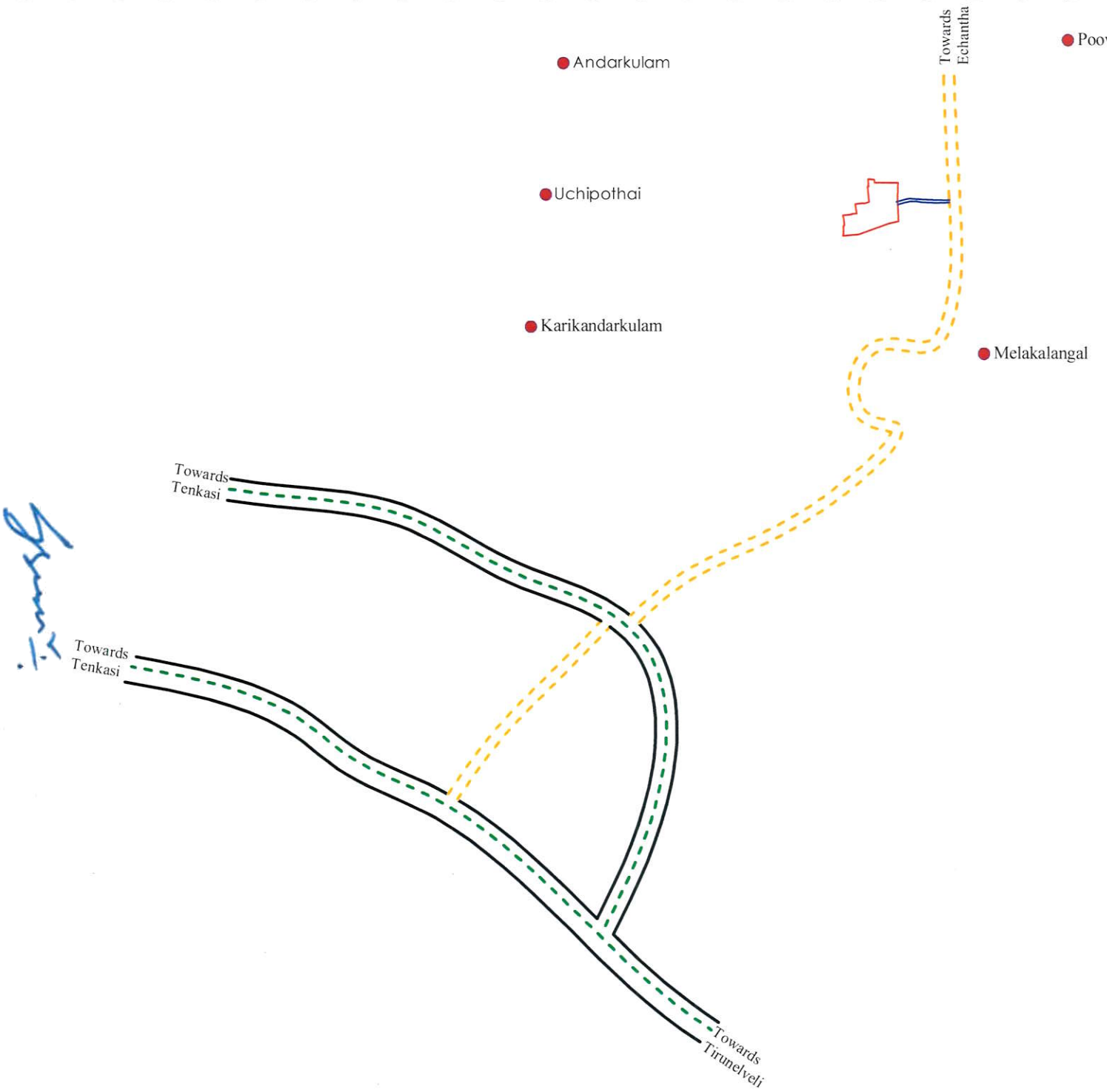
LOCATION PLAN

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

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON



MINING PLAN APPROVED BY Assistant Director of Geology & Mining Tenkasi.

PLATE NO:ID

DATE OF SURVEY : 18.12.2020

APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY LEASE APPLIED AREA:

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:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

- Q.L.APPLIED AREA
- APPROACH ROAD
- PANCHAYAT ROAD
- STATE HIGHWAY
- HABITATIONS

KEY PLAN

Not To Scale

PREPARED BY:

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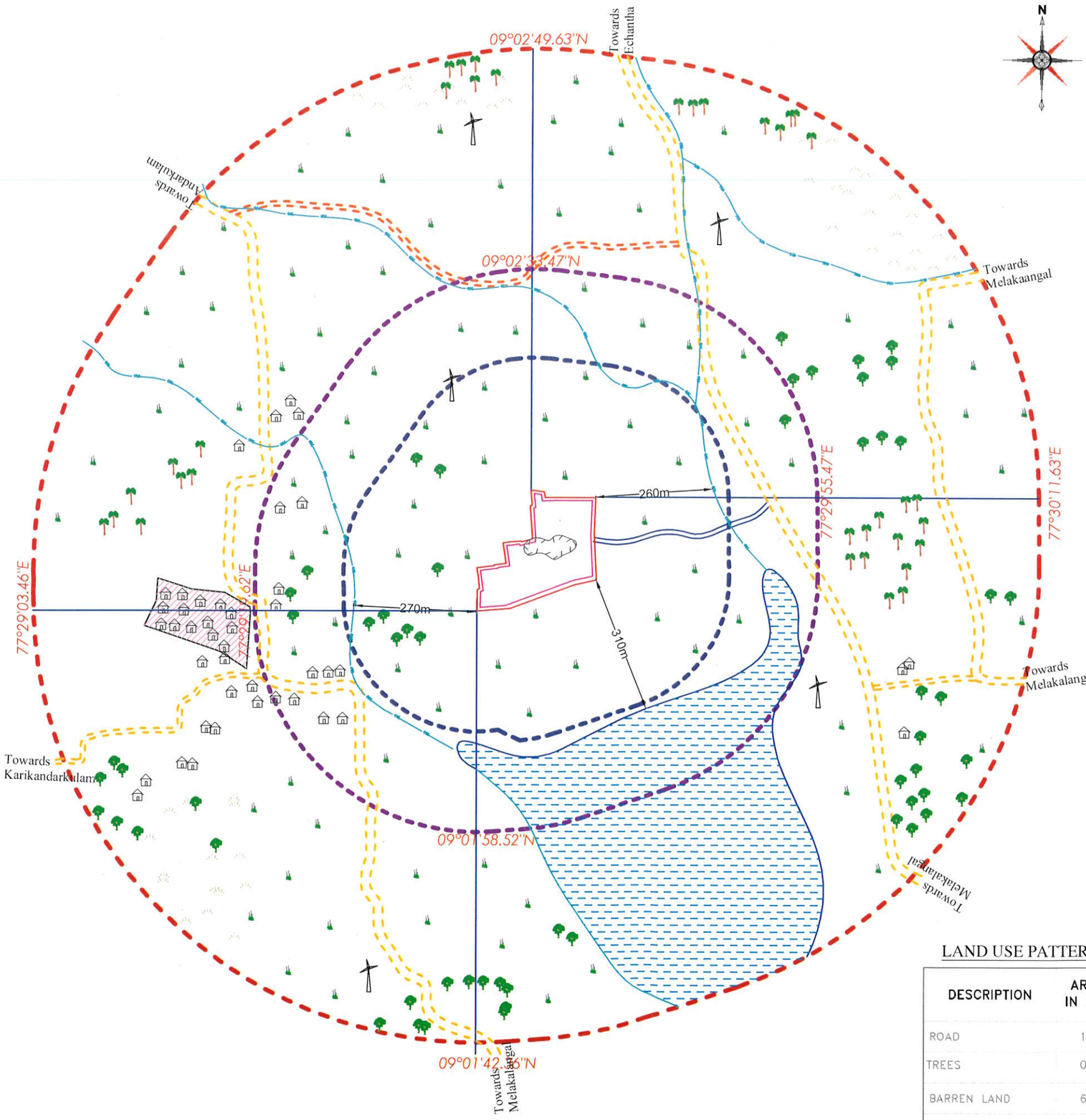
C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

PLATE NO: 1A

DATE OF SURVEY : 18.12.2024



APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tenkasi Dist.

QUARRY LEASE APPLIED AREA:

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:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

TOPO SHEET NO: 58 G/ 08
LATITUDE :09°02'11.42"N to 09°02'20.32"N
LONGITUDE :77°29'32.60"E to 77°29'41.40"E

- Q.L.APPLIED AREA
- 7.5m,&10m SAFETY DISTANCE
- 300M RADIUS
- 500M RADIUS
- 1KM RADIUS
- APPROACH ROAD
- PANCHAYAT ROAD
- CARTRACK
- WIND MILL
- BARREN LAND
- TREES
- SEASONAL AGRICULTURE
- HABITATIONS
- QUARRY PIT
- TANK
- ODAI

LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD	10
TREES	05
BARREN LAND	60
AGRICUTURE LAND	05
HABITATIONS	05
WATER BODIES	15

ENVIRONMENTAL PLAN

SCALE 1: 10,000

PREPARED BY :

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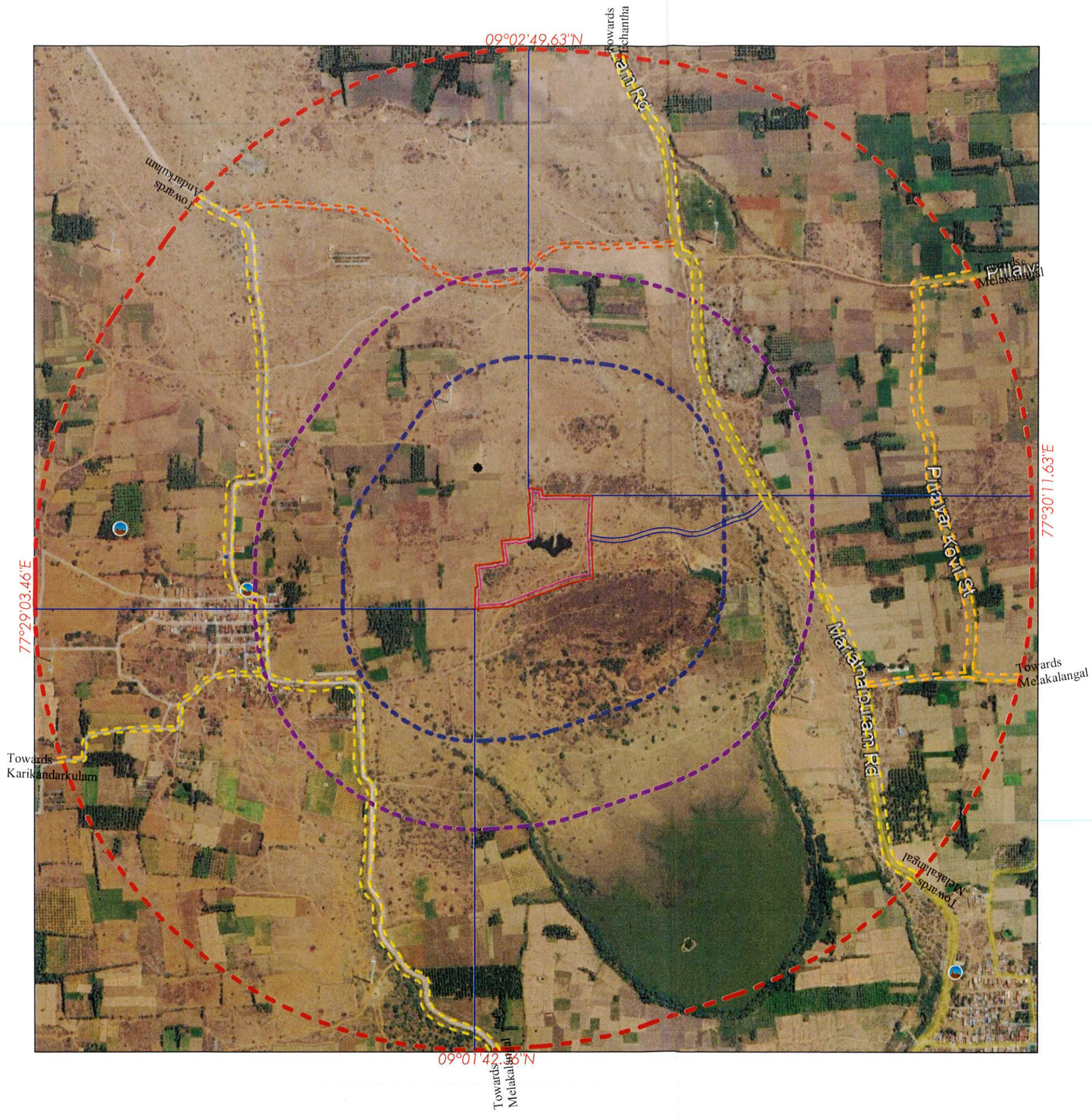
C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON



N

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

PLATE NO: 1B

DATE OF SURVEY : 18.12.2024

APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

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:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

TOPO SHEET NO: 58 G/ 08

LATITUDE :09°02'11.42"N to 09°02'20.32"N

LONGITUDE :77°29'32.60"E to 77°29'41.40"E

Q.L.APPLIED AREA	
7.5m,&10m SAFETY DISTANCE	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
PANCHAYAT ROAD	
CARTRACK	

SATELLITE IMAGERY MAP

SCALE 1: 10,000

PREPARED BY :

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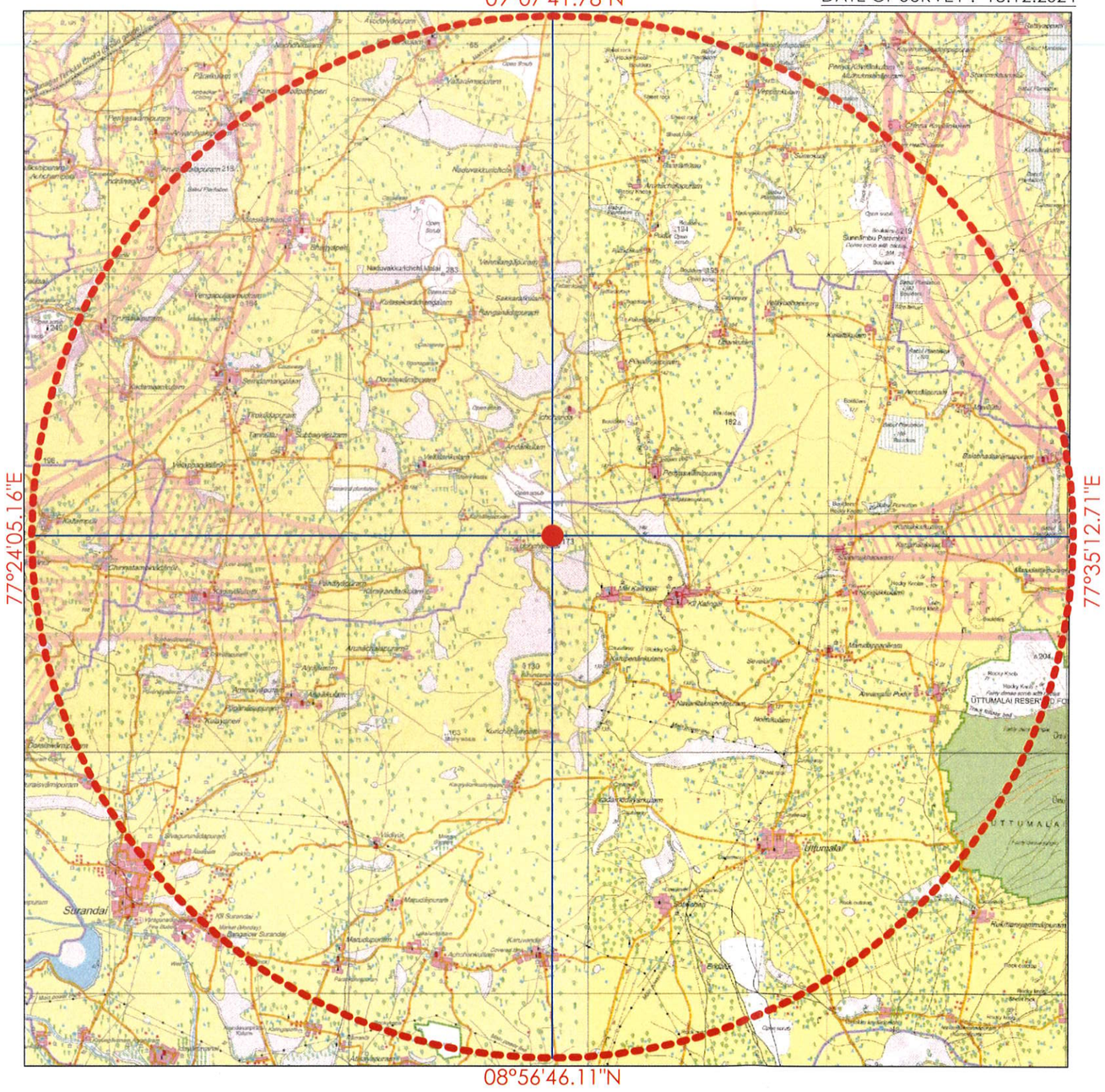
C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

MINING PLAN APPROVED
By
Director
of Geology & Mining
Tenkasi Dist.

PLATE NO-I C

DATE OF SURVEY : 18.12.2024



APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
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KADAYANALLUR TALUK ,TENKASI DISTRICT.

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EXTENT : 4.41.00 Ha,
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TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

TOPO SHEET NO: 58 G/ 08

LATITUDE :09°02'11.42"N to 09°02'20.32"N

LONGITUDE :77°29'32.60"E to 77°29'41.40"E

Q.L.APPLIED AREA

10KM RADIUS

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

PREPARED BY :

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C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	09° 02' 11.42"N	77° 29' 32.60"E
2	09° 02' 11.70"N	77° 29' 32.62"E
3	09° 02' 13.01"N	77° 29' 32.64"E
4	09° 02' 13.07"N	77° 29' 32.82"E
5	09° 02' 14.62"N	77° 29' 32.64"E
6	09° 02' 14.77"N	77° 29' 33.94"E
7	09° 02' 14.81"N	77° 29' 33.94"E
8	09° 02' 14.94"N	77° 29' 34.78"E
9	09° 02' 16.44"N	77° 29' 34.56"E
10	09° 02' 16.58"N	77° 29' 35.88"E
11	09° 02' 16.51"N	77° 29' 35.93"E
12	09° 02' 16.70"N	77° 29' 36.72"E
13	09° 02' 16.81"N	77° 29' 36.74"E
14	09° 02' 19.19"N	77° 29' 36.59"E
15	09° 02' 19.21"N	77° 29' 36.73"E
16	09° 02' 20.29"N	77° 29' 36.64"E
17	09° 02' 20.32"N	77° 29' 36.86"E
18	09° 02' 20.20"N	77° 29' 37.63"E
19	09° 02' 19.77"N	77° 29' 37.69"E
20	09° 02' 19.77"N	77° 29' 41.40"E
21	09° 02' 17.09"N	77° 29' 41.27"E
22	09° 02' 13.67"N	77° 29' 41.40"E
23	09° 02' 13.32"N	77° 29' 39.80"E
24	09° 02' 11.59"N	77° 29' 35.07"E
WGS 84 DATUM		

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

EXISTING PIT DIMENSION
PIT-I L98m(Max)X40m(Avg)XD8m(Max)

PLATE NO-II
DATE OF SURVEY : 18.12.2024

APPLICANT:
THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NOS :16/7,16/8,16/9,16/10,16/11B(P),
:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX
- Q.L. APPLIED BOUNDARY
- 7.5m&10m SAFETY DISTANCE
- TEMPORARY BENCH MARK (T.B.M)
- APPROACH ROAD
- CONTOUR
- SCRUB

QUARRY LEASE & SURFACE PLAN
SCALE 1 : 1000

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

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	09° 02' 11.42"N	77° 29' 32.60"E
2	09° 02' 11.70"N	77° 29' 32.62"E
3	09° 02' 13.01"N	77° 29' 32.64"E
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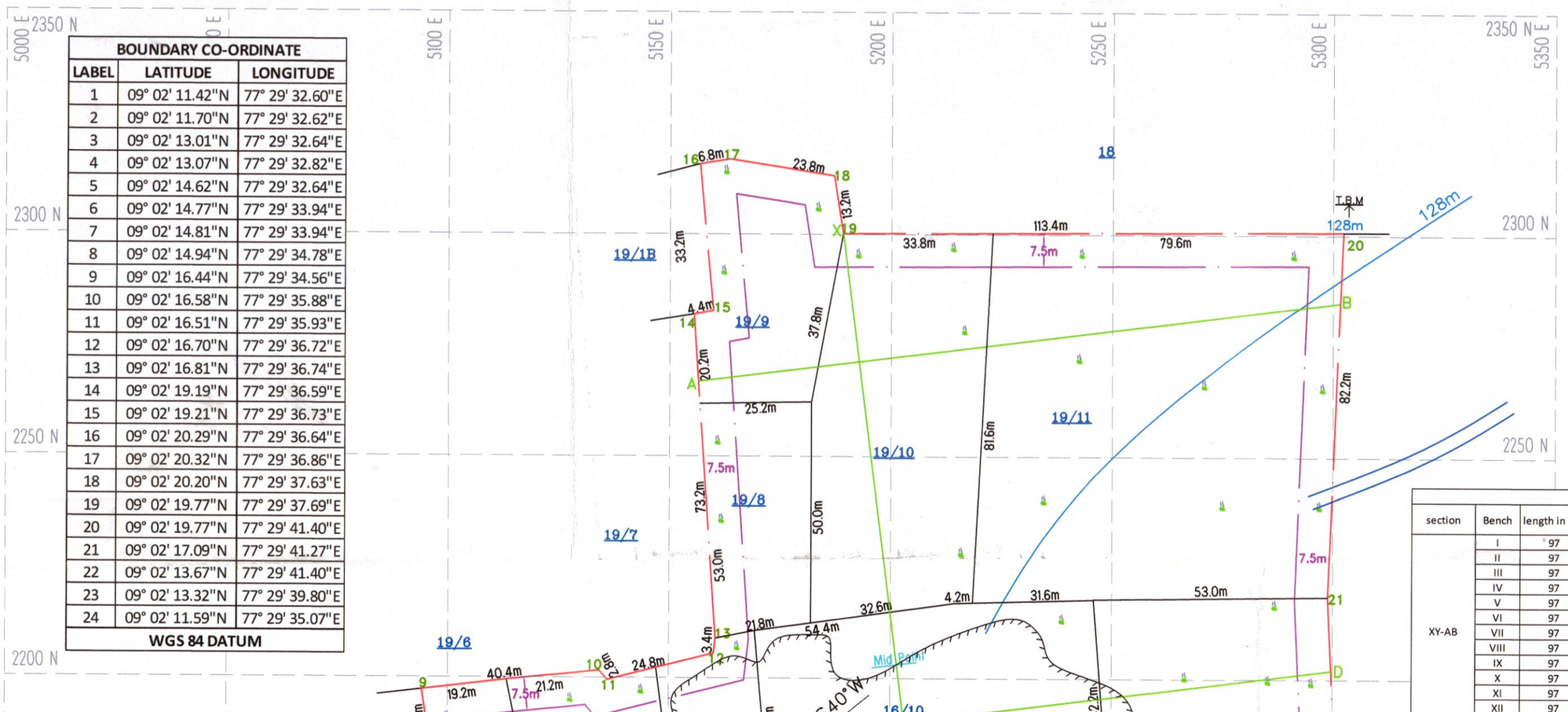
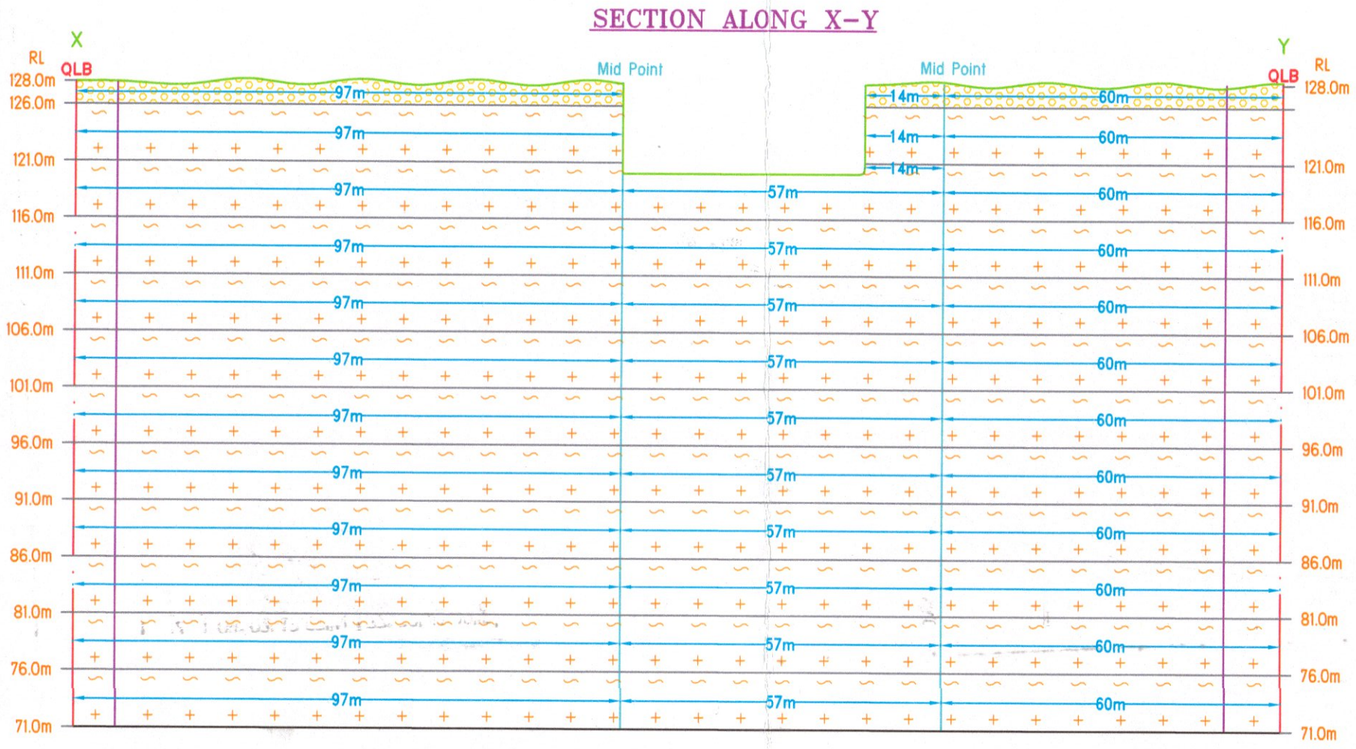
23	09° 02' 13.32"N	77° 29' 39.80"E
24	09° 02' 11.59"N	77° 29' 35.07"E
WGS 84 DATUM		

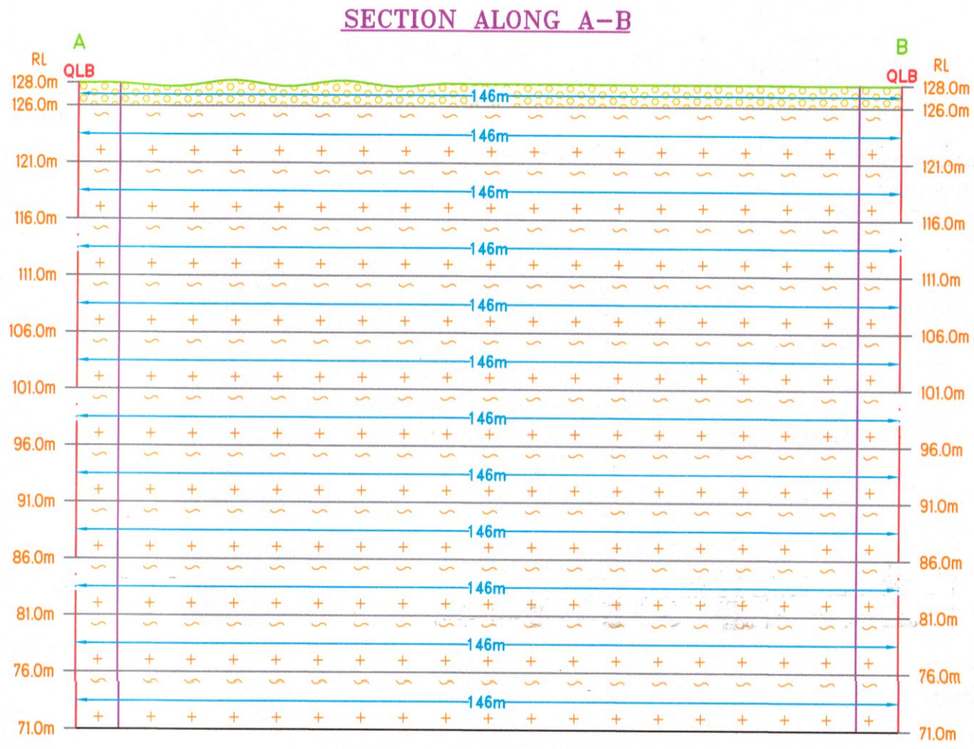


GEOLOGICAL RESERVES							
section	Bench	length in (m)	Width in (m)	Depth in (m)	Volume in m3	Gravel in m3	Geological Resources in m3
XY-AB	I	97	146	2	28324	28324	
	II	97	146	5	70810		70810
	III	97	146	5	70810		70810
	IV	97	146	5	70810		70810
	V	97	146	5	70810		70810
	VI	97	146	5	70810		70810
	VII	97	146	5	70810		70810
	VIII	97	146	5	70810		70810
	IX	97	146	5	70810		70810
	X	97	146	5	70810		70810
	XI	97	146	5	70810		70810
	XII	97	146	5	70810		70810
	TOTAL					28324	778910
XY-AB	I	57	105	2	11970	11970	
	II	14	105	5	7350		7350
	III	14	105	1	1470		1470
	III	57	204	4	46512		46512
	IV	57	204	5	58140		58140
	V	57	204	5	58140		58140
	VI	57	204	5	58140		58140
	VII	57	204	5	58140		58140
	VIII	57	204	5	58140		58140
	IX	57	204	5	58140		58140
	X	57	204	5	58140		58140
	XI	57	204	5	58140		58140
	XII	57	204	5	58140		58140
	TOTAL					11970	578592
XY-AB	I	60	204	2	24480	24480	
	II	60	204	5	61200		61200
	III	60	204	5	61200		61200
	IV	60	204	5	61200		61200
	V	60	204	5	61200		61200
	VI	60	204	5	61200		61200
	VII	60	204	5	61200		61200
	VIII	60	204	5	61200		61200
	IX	60	204	5	61200		61200
	X	60	204	5	61200		61200
	XI	60	204	5	61200		61200
	XII	60	204	5	61200		61200
	TOTAL					24480	673200
XY-AB	I	102	60	2	12240	12240	
	II	102	60	5	30600		30600
	III	102	60	5	30600		30600
	IV	102	60	5	30600		30600
	V	102	60	5	30600		30600
	VI	102	60	5	30600		30600
	VII	102	60	5	30600		30600
	VIII	102	60	5	30600		30600
	IX	102	60	5	30600		30600
	X	102	60	5	30600		30600
	XI	102	60	5	30600		30600
	XII	102	60	5	30600		30600
	TOTAL					12240	336600
GRAND TOTAL						77014	2367302

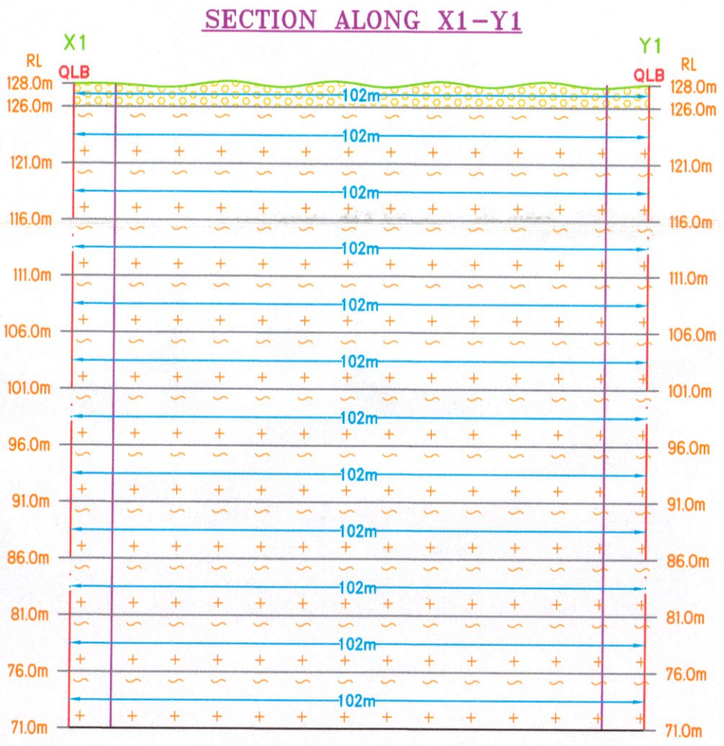
SECTION ALONG X-Y



SECTION ALONG A-B



SECTION ALONG X1-Y1



SECTION ALONG C-D

SECTION ALONG E-F

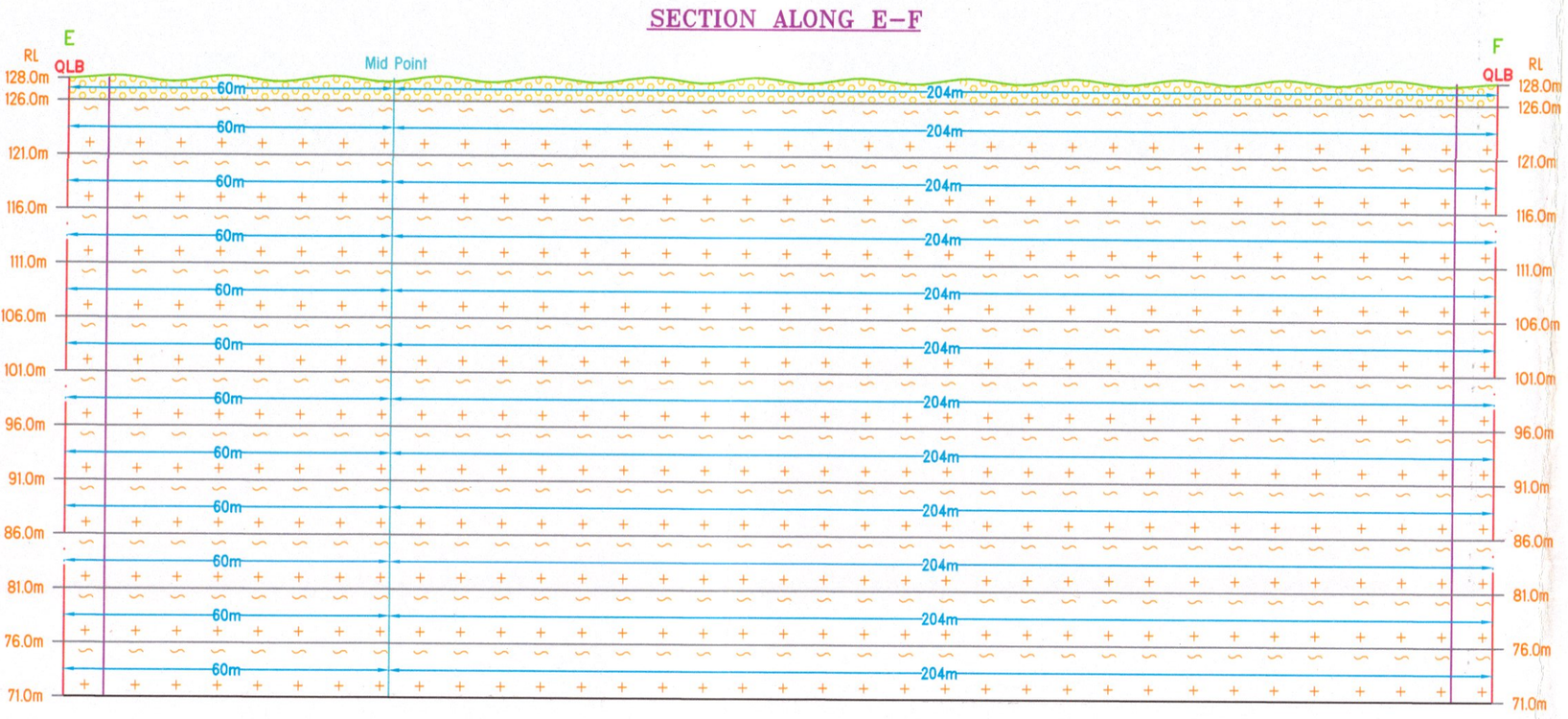


PLATE NO-III
DATE OF SURVEY : 18.12.2024

APPLICANT:
THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK,TENKASI DISTRICT.

QUARRY APPLIED LEASE AREA:
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DISTRICT : TENKASI.

INDEX

- Q.L. APPLIED BOUNDARY
- 7.5m&10m SAFETY DISTANCE
- TEMPORARY BENCH MARK (T.B.M)
- APPROACH ROAD
- CONTOUR
- SCRUB
- GRAVEL
- ROUGH STONE
- STRIKE & DIP

TOPOGRAPHY, GEOLOGICAL & PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

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

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	09° 02' 11.42"N	77° 29' 32.60"E
2	09° 02' 11.70"N	77° 29' 32.62"E
3	09° 02' 13.01"N	77° 29' 32.64"E
4	09° 02' 13.07"N	77° 29' 32.82"E
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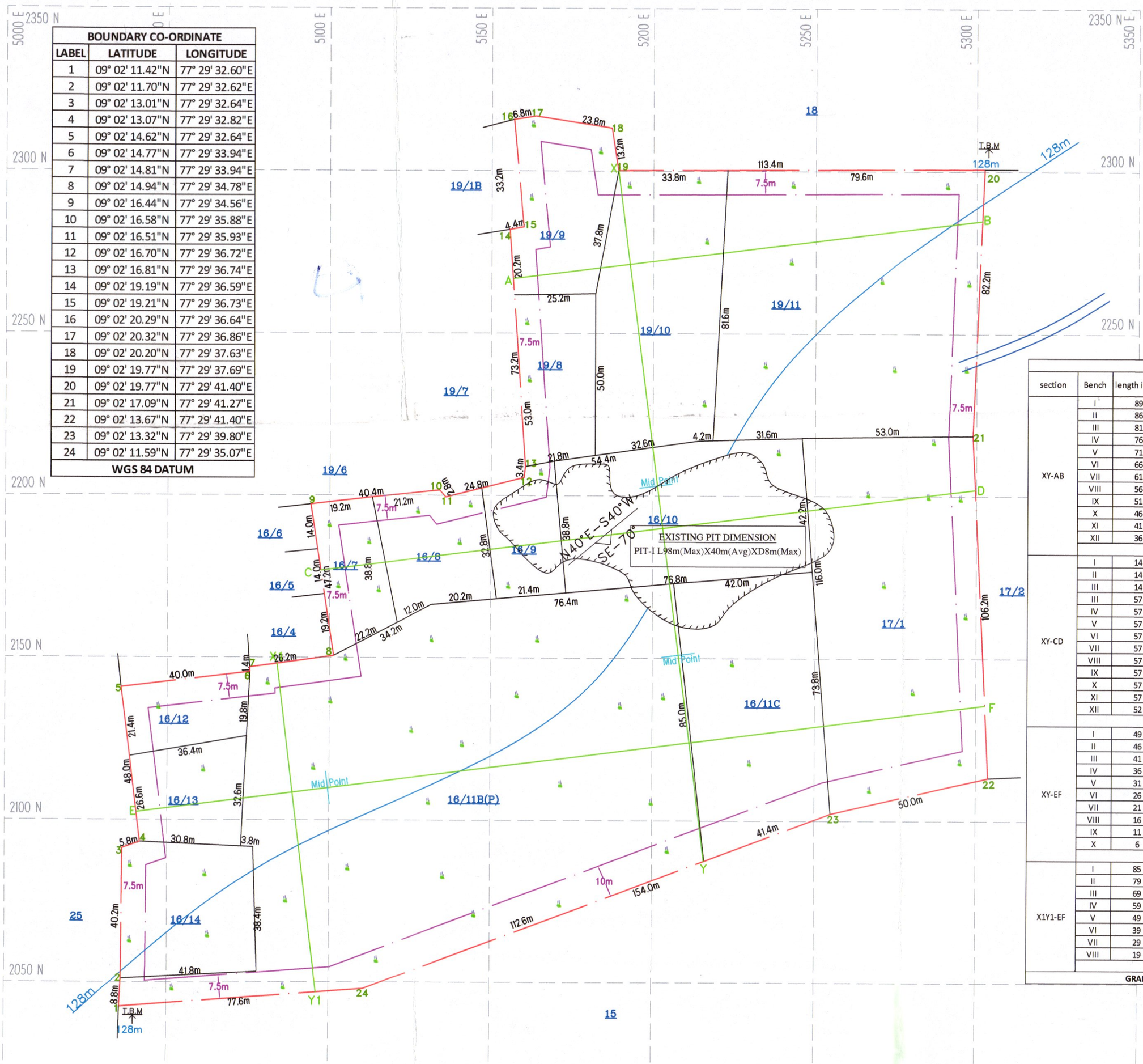
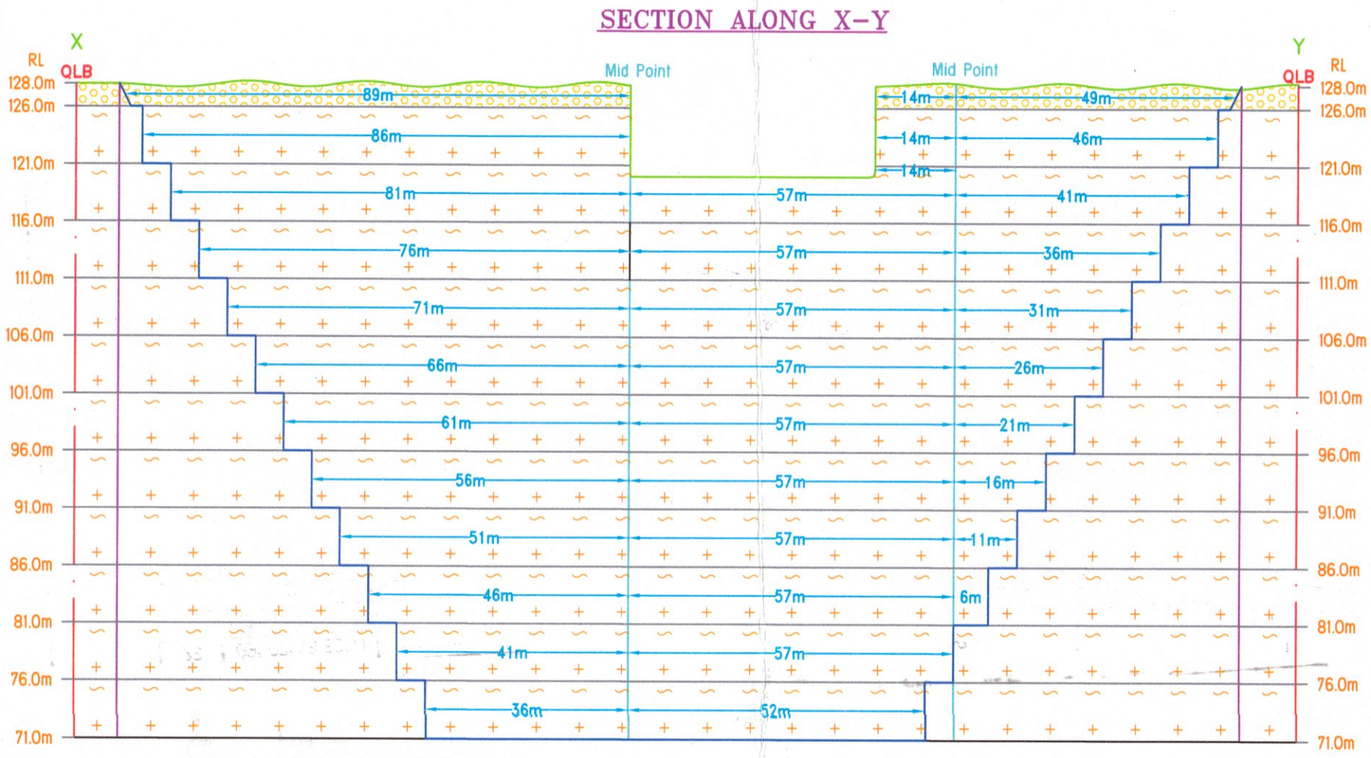
WGS 84 DATUM		

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

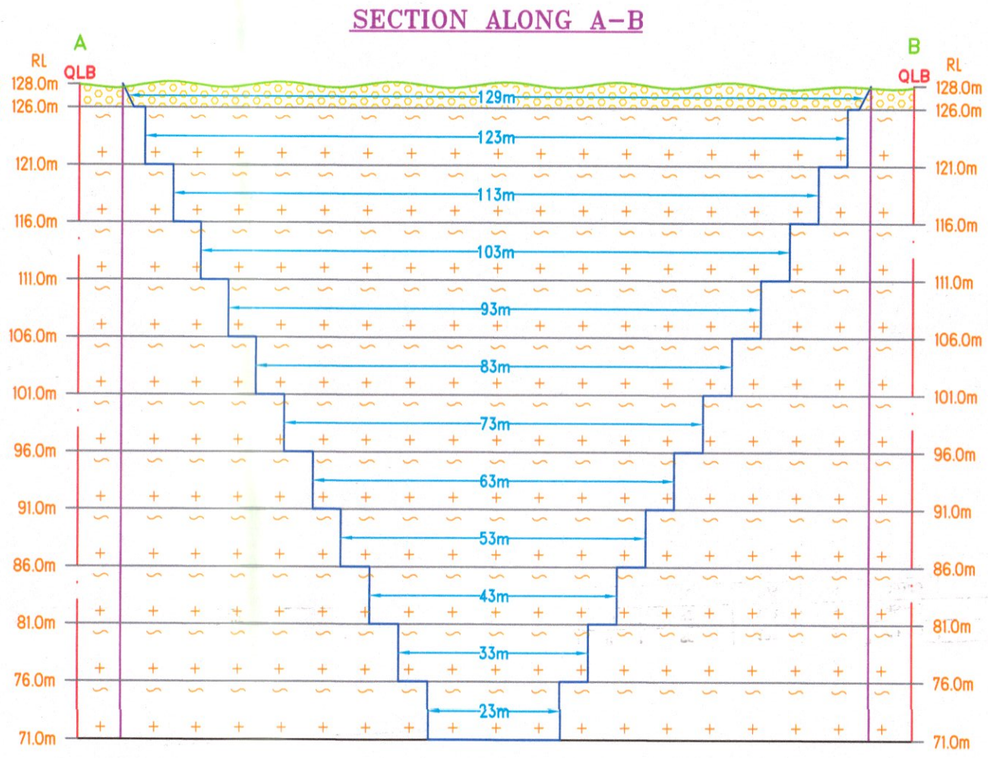


MINEABLE RESERVES							
section	Bench	length in (m)	Width in (m)	Depth in (m)	Volume in m3	Gravel in m3	Geological Resources in m3
XY-AB	I	89	129	2	22962	22962	
	II	86	123	5	52890		52890
	III	81	113	5	45765		45765
	IV	76	103	5	39140		39140
	V	71	93	5	33015		33015
	VI	66	83	5	27390		27390
	VII	61	73	5	22265		22265
	VIII	56	63	5	17640		17640
	IX	51	53	5	13515		13515
	X	46	43	5	9890		9890
	XI	41	33	5	6765		6765
	XII	36	23	5	4140		4140
	TOTAL					22962	272415
XY-CD	I	14	88	2	2464	2464	
	II	14	82	5	5740		5740
	III	14	72	1	1008		1008
	III	57	171	4	38988		38988
	IV	57	161	5	45885		45885
	V	57	151	5	43035		43035
	VI	57	141	5	40185		40185
	VII	57	131	5	37335		37335
	VIII	57	121	5	34485		34485
	IX	57	111	5	31635		31635
	X	57	101	5	28785		28785
	XI	57	91	5	25935		25935
	XII	52	81	5	21060		21060
	TOTAL					2464	354076
XY-EF	I	49	196	2	19208	19208	
	II	46	193	5	44390		44390
	III	41	188	5	38540		38540
	IV	36	183	5	32940		32940
	V	31	178	5	27590		27590
	VI	26	173	5	22490		22490
	VII	21	168	5	17640		17640
	VIII	16	163	5	13040		13040
	IX	11	158	5	8690		8690
	X	6	148	5	4440		4440
	TOTAL					19208	209760
X1Y1-EF	I	85	52	2	8840	8840	
	II	79	49	5	19355		19355
	III	69	44	5	15180		15180
	IV	59	39	5	11505		11505
	V	49	34	5	8330		8330
	VI	39	29	5	5655		5655
	VII	29	24	5	3480		3480
	VIII	19	19	5	1805		1805
	TOTAL					8840	65310
GRAND TOTAL						53474	901561

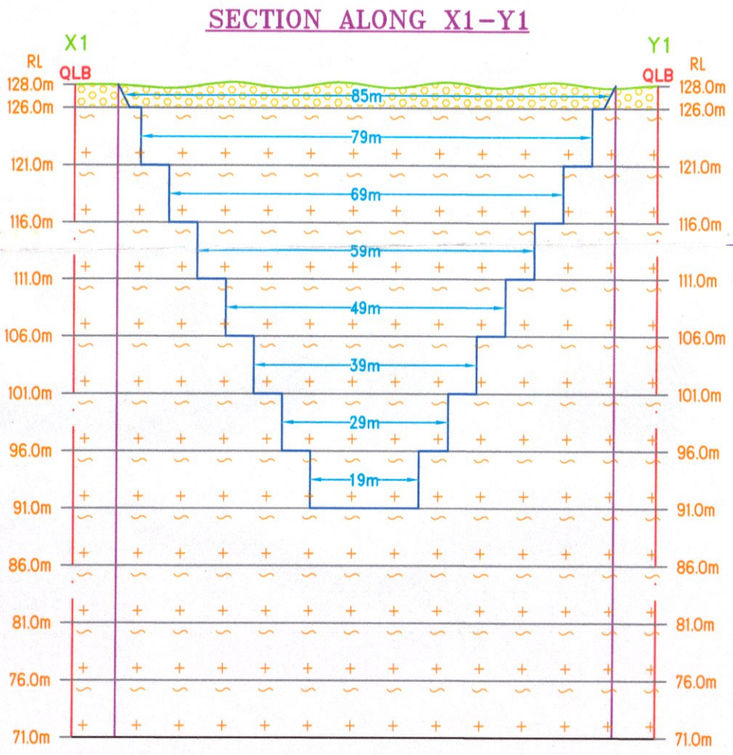
SECTION ALONG X-Y



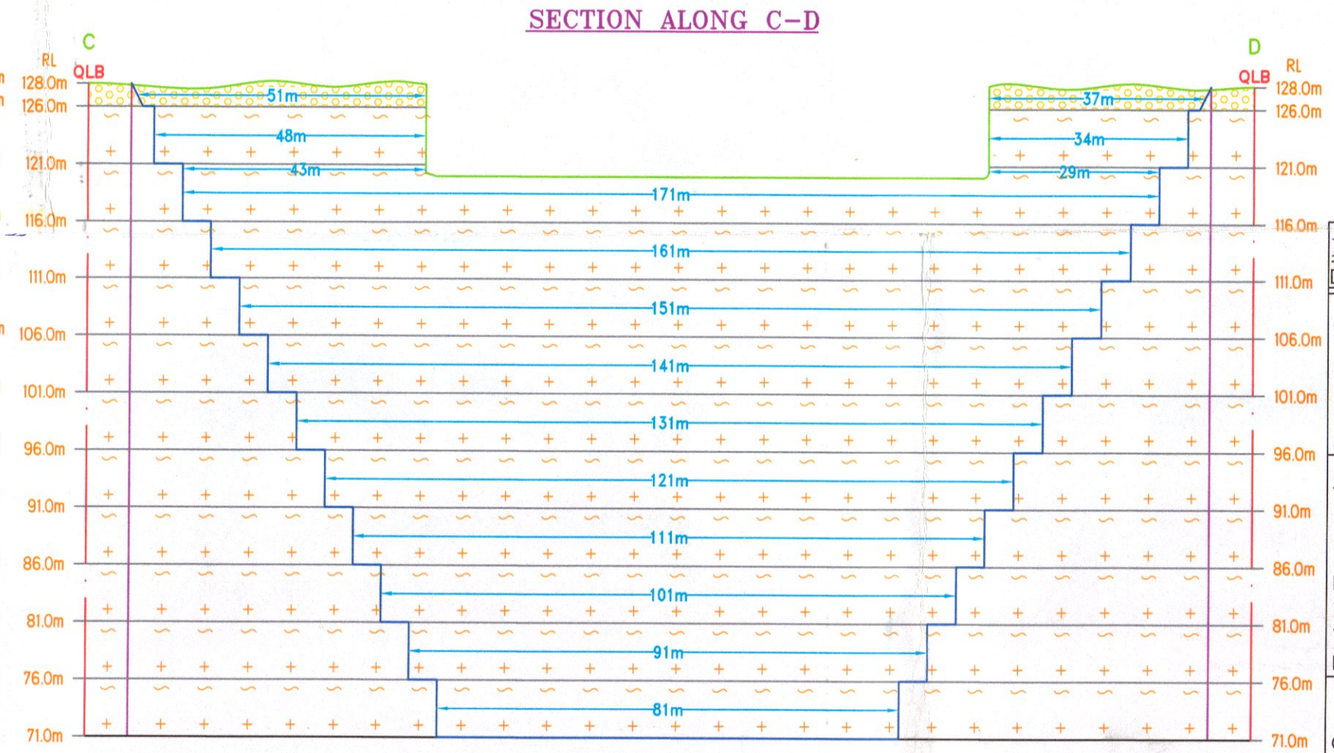
SECTION ALONG A-B



SECTION ALONG X1-Y1



SECTION ALONG C-D



SECTION ALONG E-F

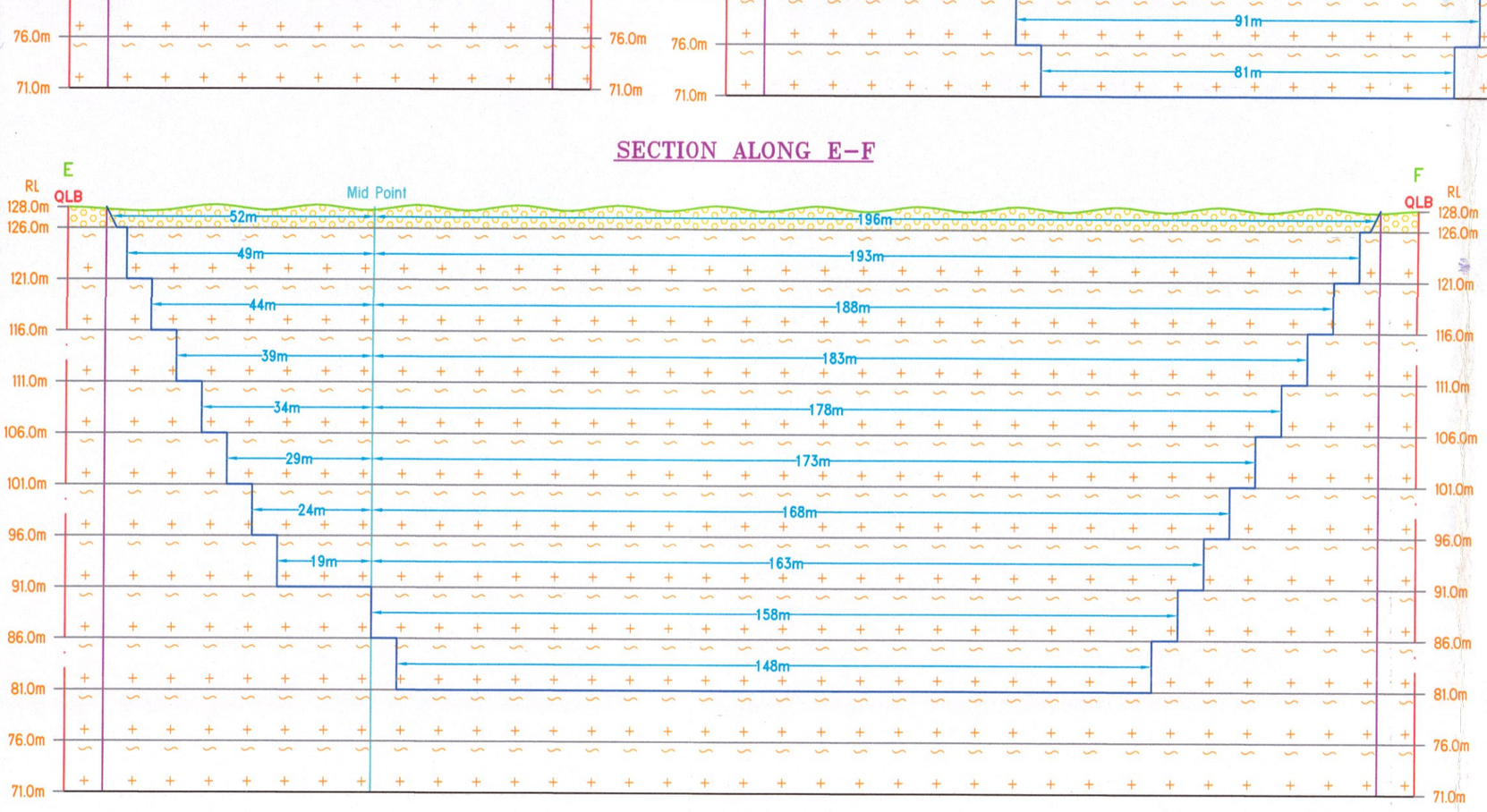


PLATE NO-IV
DATE OF SURVEY : 18.12.2024

APPLICANT:
THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NOS :16/7,16/8,16/9,16/10,16/11B(P),
:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

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- APPROACH ROAD
- CONTOUR
- SCRUB
- GRAVEL
- ROUGH STONE
- STRIKE & DIP

MINEABLE PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

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

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

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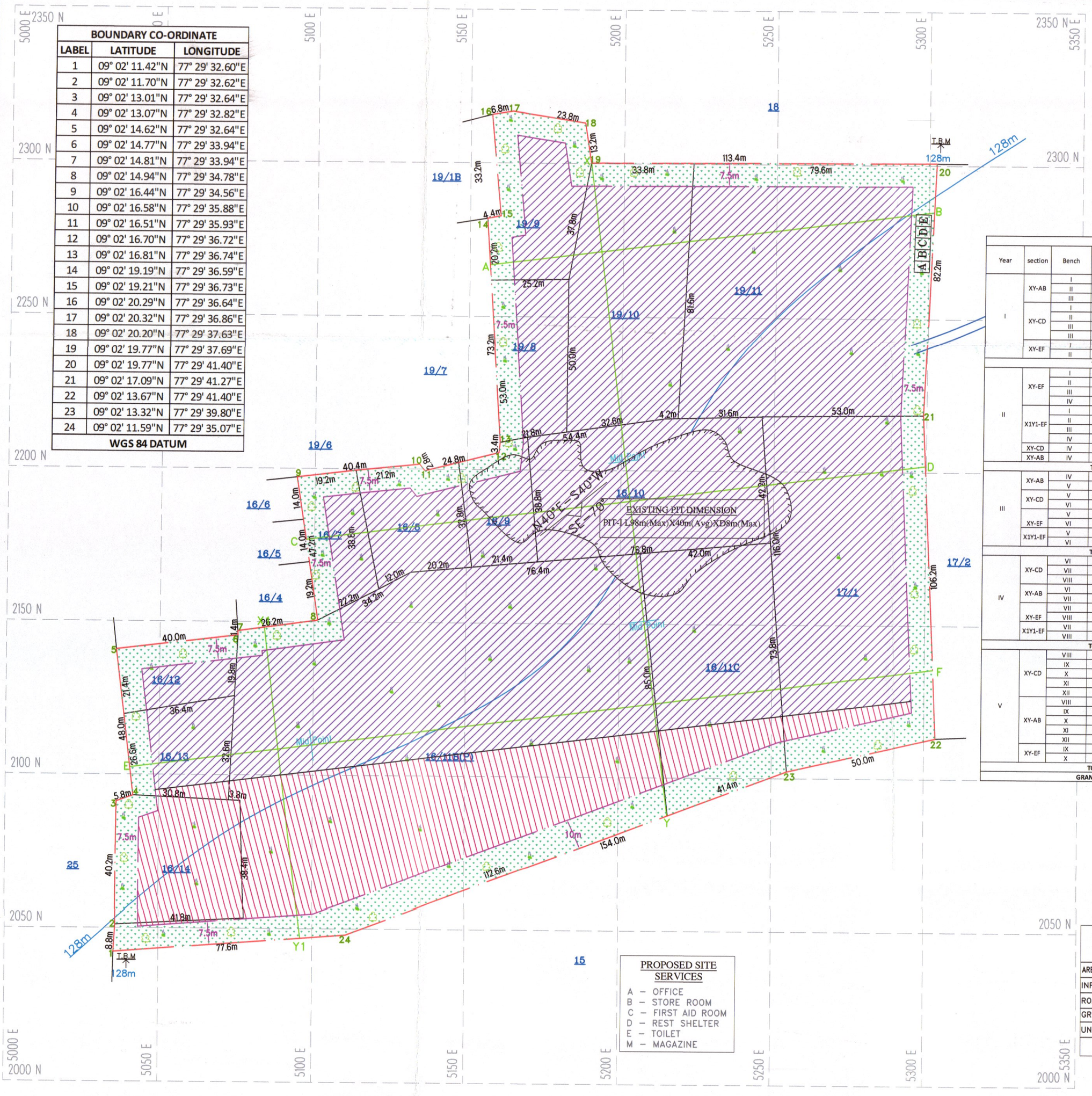
24	09° 02' 11.59"N	77° 29' 35.07"E
WGS 84 DATUM		

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.



YEARWISE RESERVES								
Year	section	Bench	length in (m)	Width in (m)	Depth in (m)	Volume in m3	Gravel in m3	Geological Resources in m3
I	XY-AB	I	89	129	2	22962	22962	
		II	86	123	5	52890		52890
		III	81	113	5	45765		45765
	XY-CD	I	14	88	2	2464	2464	
		II	14	82	5	5740		5740
		III	14	72	1	1008		1008
	XY-EF	III	57	171	4	38988		38988
		I	36	196	2	14112	14112	
		II	36	193	5	34740		34740
TOTAL							39538	179131
II	XY-EF	I	13	196	2	5096	5096	
		II	10	193	5	9650		9650
		III	41	188	5	38540		38540
		IV	36	183	5	32940		32940
	X1Y1-EF	I	85	52	2	8840	8840	
		II	79	49	5	19355		19355
		III	69	44	5	15180		15180
		IV	59	39	5	11505		11505
	XY-CD	IV	57	161	5	45885		45885
	XY-AB	IV	14	103	5	7210		7210
TOTAL							13936	180265
III	XY-AB	IV	62	103	5	31930		31930
		V	71	93	5	33015		33015
	XY-CD	V	57	151	5	43035		43035
		VI	10	141	5	7050		7050
	XY-EF	V	31	178	5	27590		27590
		VI	26	173	5	22490		22490
	X1Y1-EF	V	49	34	5	8330		8330
		VI	39	29	5	5655		5655
TOTAL								179095
IV	XY-CD	VI	47	141	5	33135		33135
		VII	57	131	5	37335		37335
		VIII	40	121	5	24200		24200
	XY-AB	VI	66	83	5	27390		27390
		VII	61	73	5	22265		22265
	XY-EF	VII	21	168	5	17640		17640
		VIII	16	163	5	13040		13040
	X1Y1-EF	VII	29	24	5	3480		3480
		VIII	19	19	5	1805		1805
TOTAL								180290
V	XY-CD	VIII	17	121	5	10285		10285
		IX	57	111	5	31635		31635
		X	57	101	5	28785		28785
		XI	57	91	5	25935		25935
		XII	52	81	5	21060		21060
	XY-AB	VIII	56	63	5	17640		17640
		IX	51	53	5	13515		13515
		X	46	43	5	9890		9890
		XI	41	33	5	6765		6765
		XII	36	23	5	4140		4140
	XY-EF	IX	11	158	5	8690		8690
		X	6	148	5	4440		4440
TOTAL								182780
GRAND TOTAL							53474	901561

1st yr Proposed area to be Quarried
2nd yr Proposed area to be Quarried
3rd yr Proposed area to be Quarried
4th yr Proposed area to be Quarried
5th yr Proposed area to be Quarried

PRESENT & POST LAND USE PATTERN

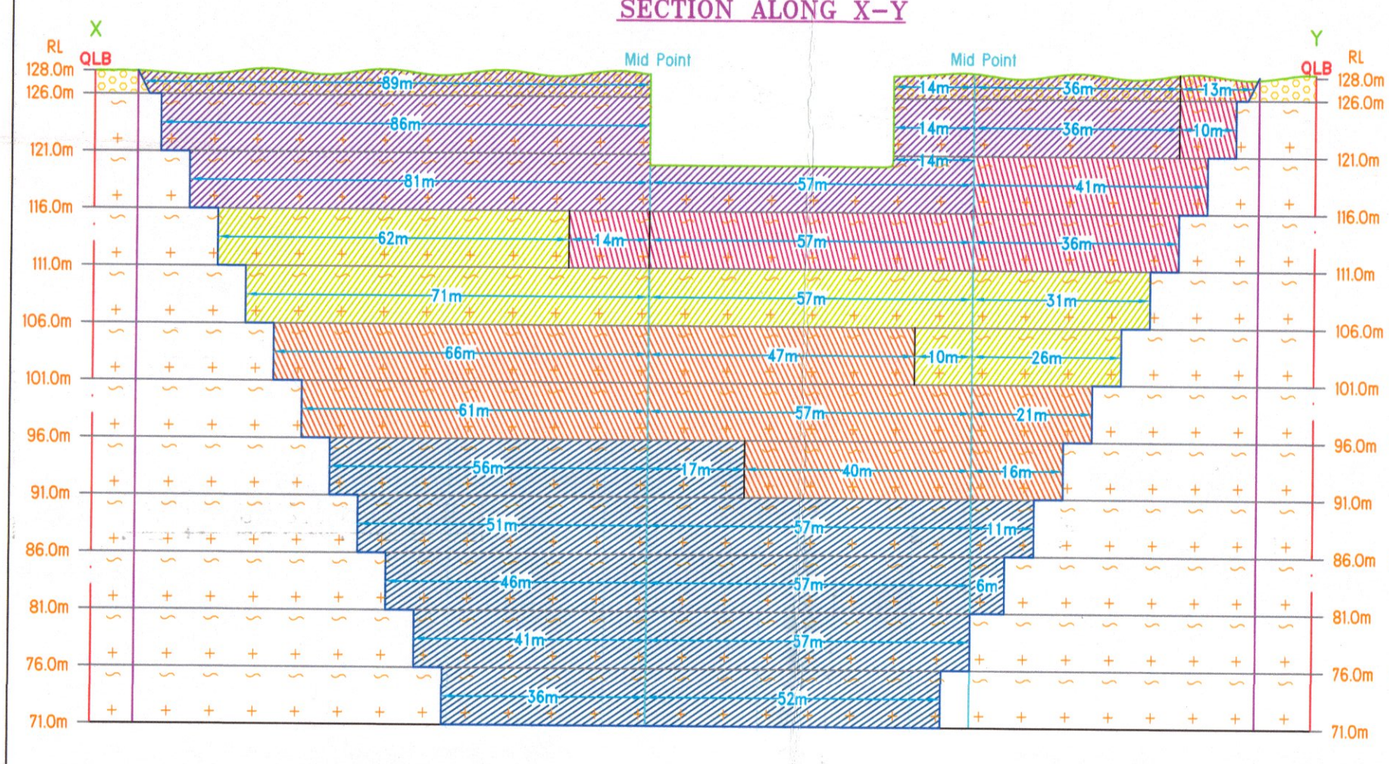
DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	Nil	3.70.50
INFRASTRUCTURE	Nil	0.01.00
ROADS	Nil	0.02.00
GREEN BELT	Nil	0.67.50
UN-UTILIZED AREA	4.41.00	Nil
GRAND TOTAL	4.41.00	4.41.00

Proposed area to be Planted

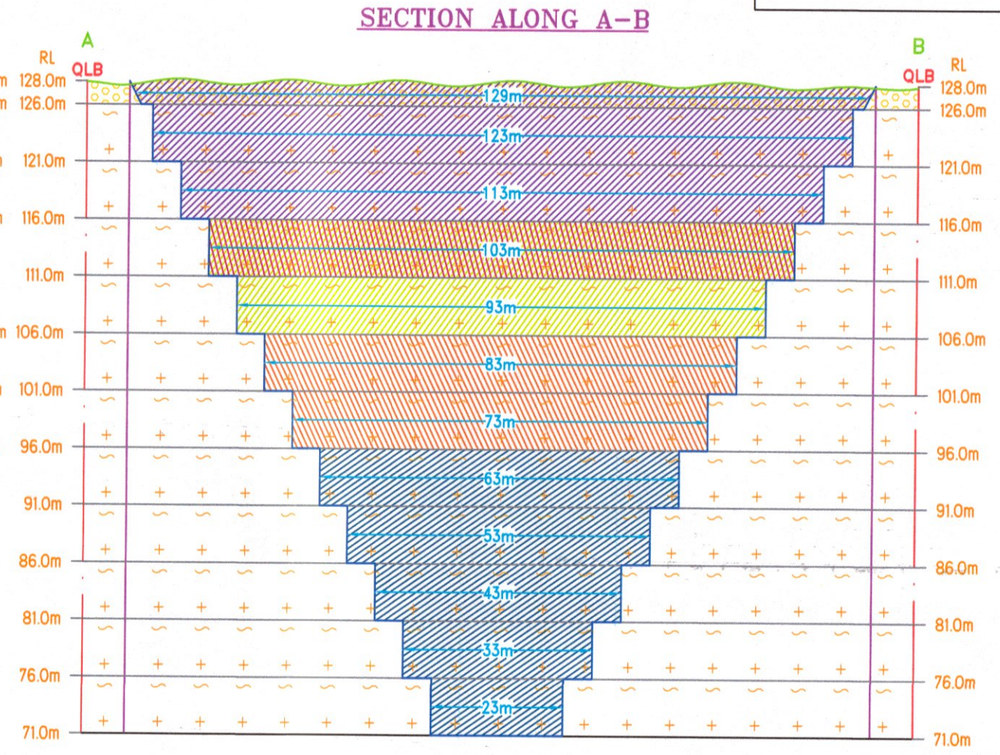
PROPOSED SITE SERVICES

A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET
M – MAGAZINE

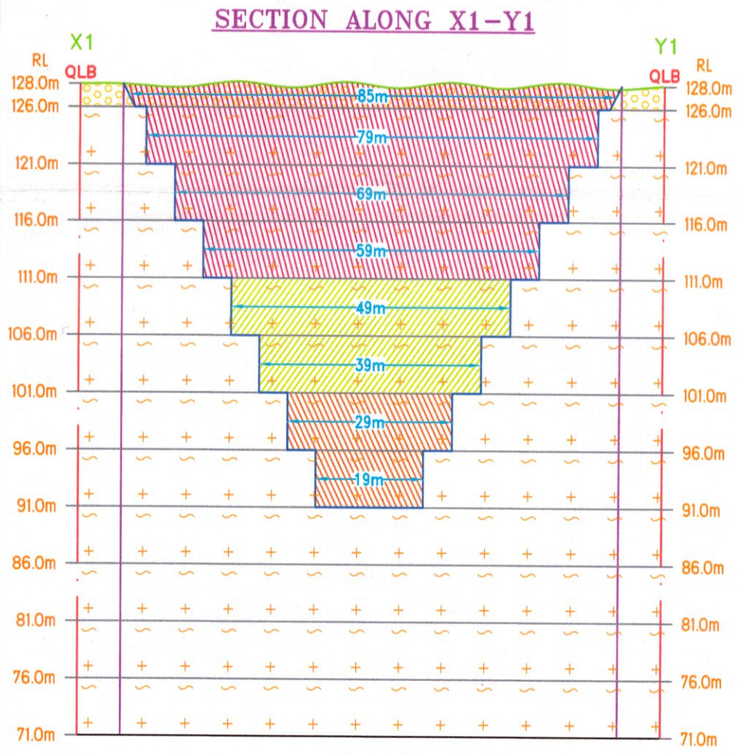
SECTION ALONG X-Y



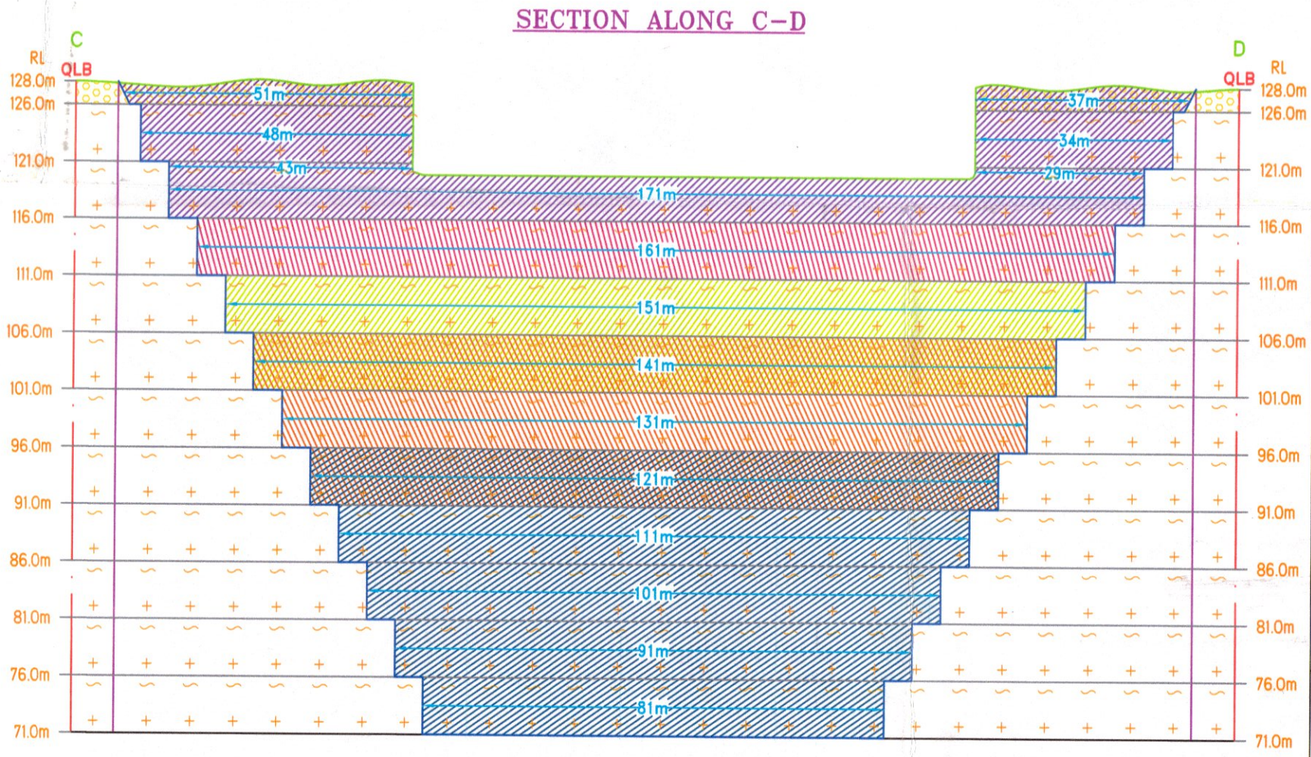
SECTION ALONG A-B



SECTION ALONG X1-Y1



SECTION ALONG C-D



SECTION ALONG E-F

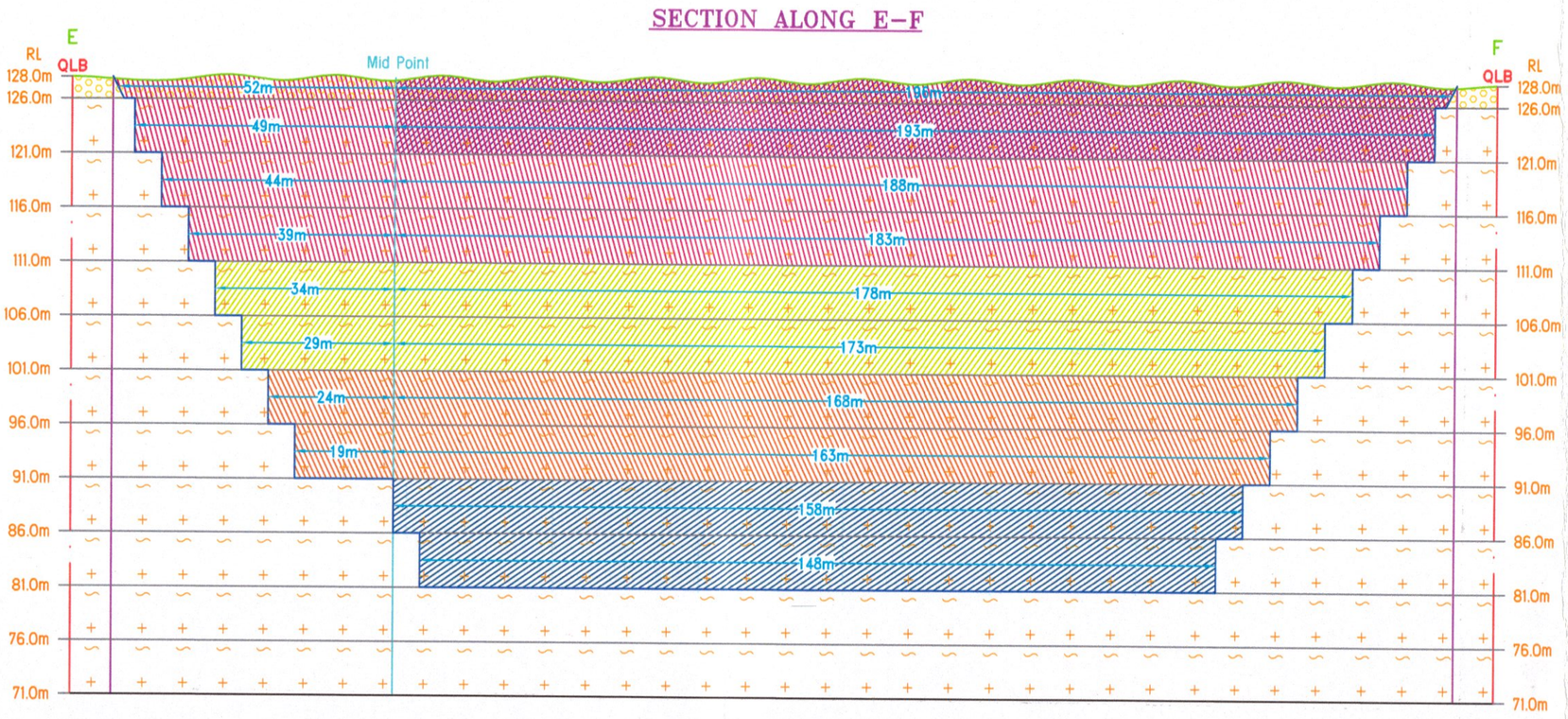


PLATE NO-V
DATE OF SURVEY : 18.12.2024

APPLICANT:
THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY APPLIED LEASE AREA:
S.F.NOS :16/7,16/8,16/9,16/10,16/11B(P),
:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

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GRAVEL
ROUGH STONE
STRIKE & DIP

YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:
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C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

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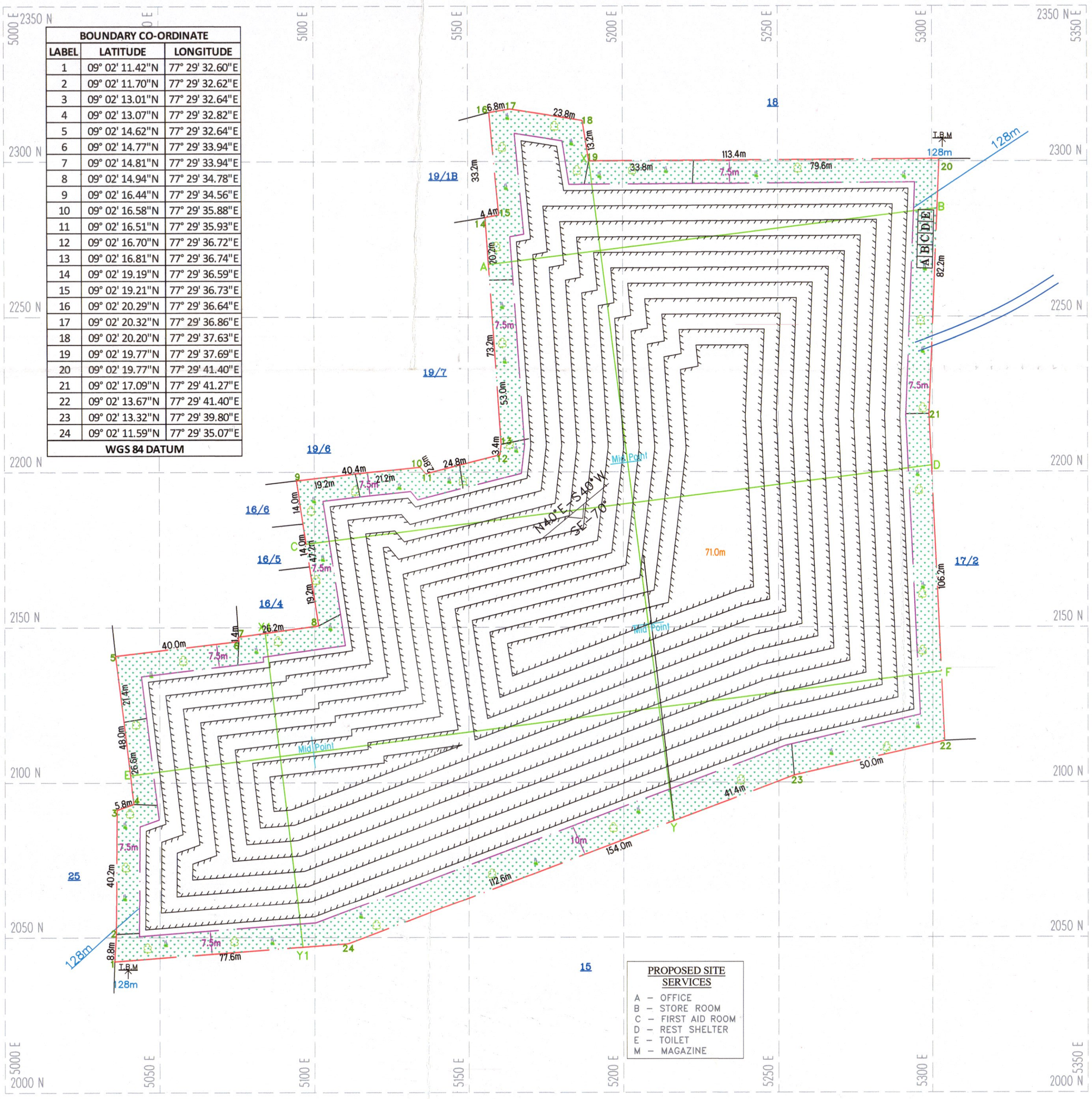
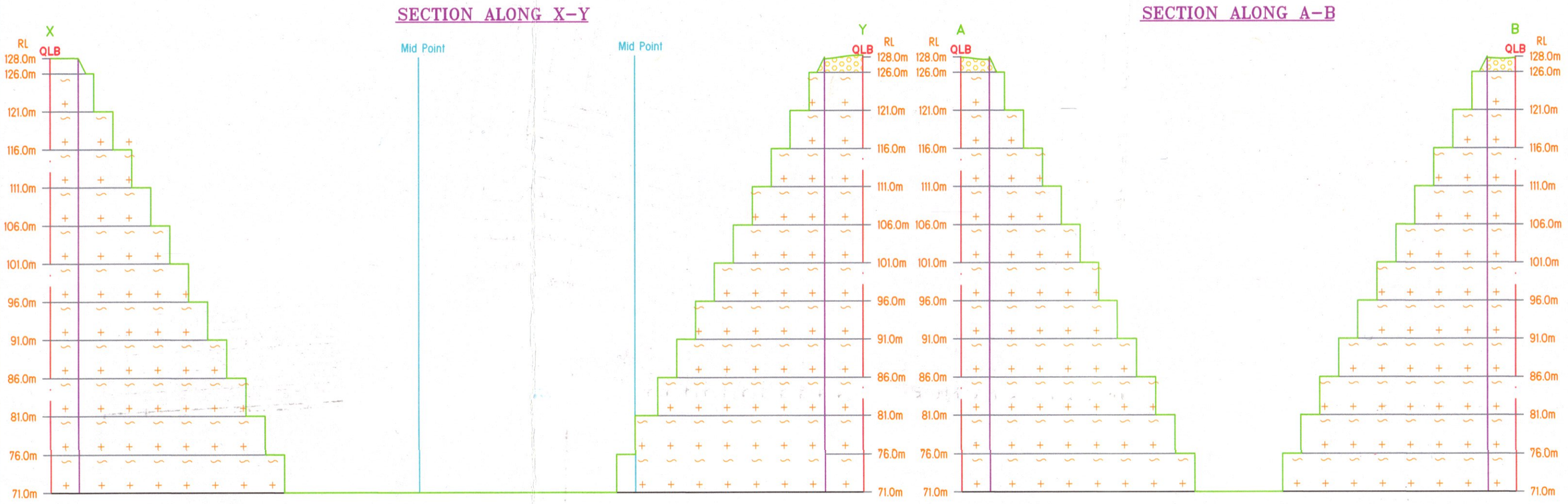
WGS 84 DATUM		

MINING PLAN APPROVED
NBy
Assistant Director
of Geology & Mining
Tenkasi Dist.

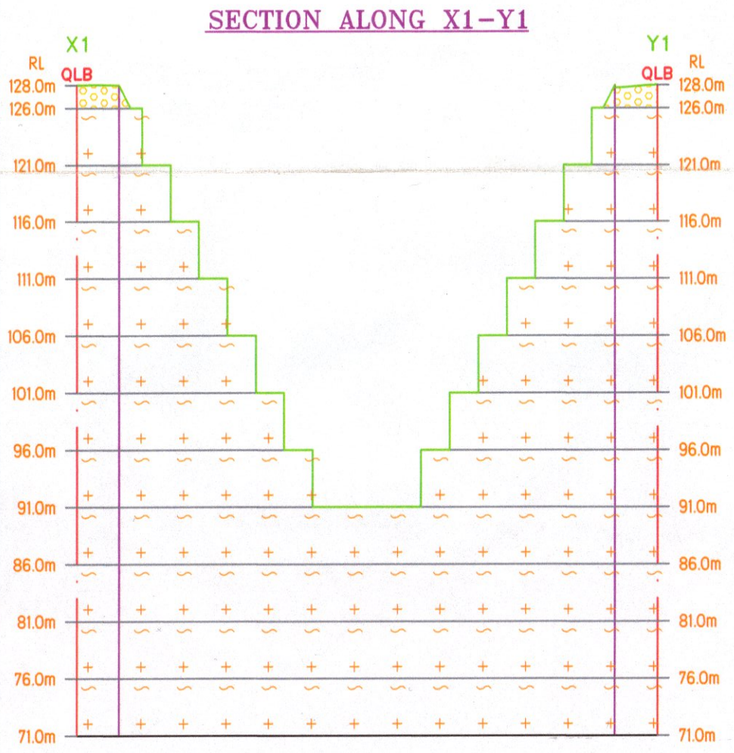


SECTION ALONG X–Y

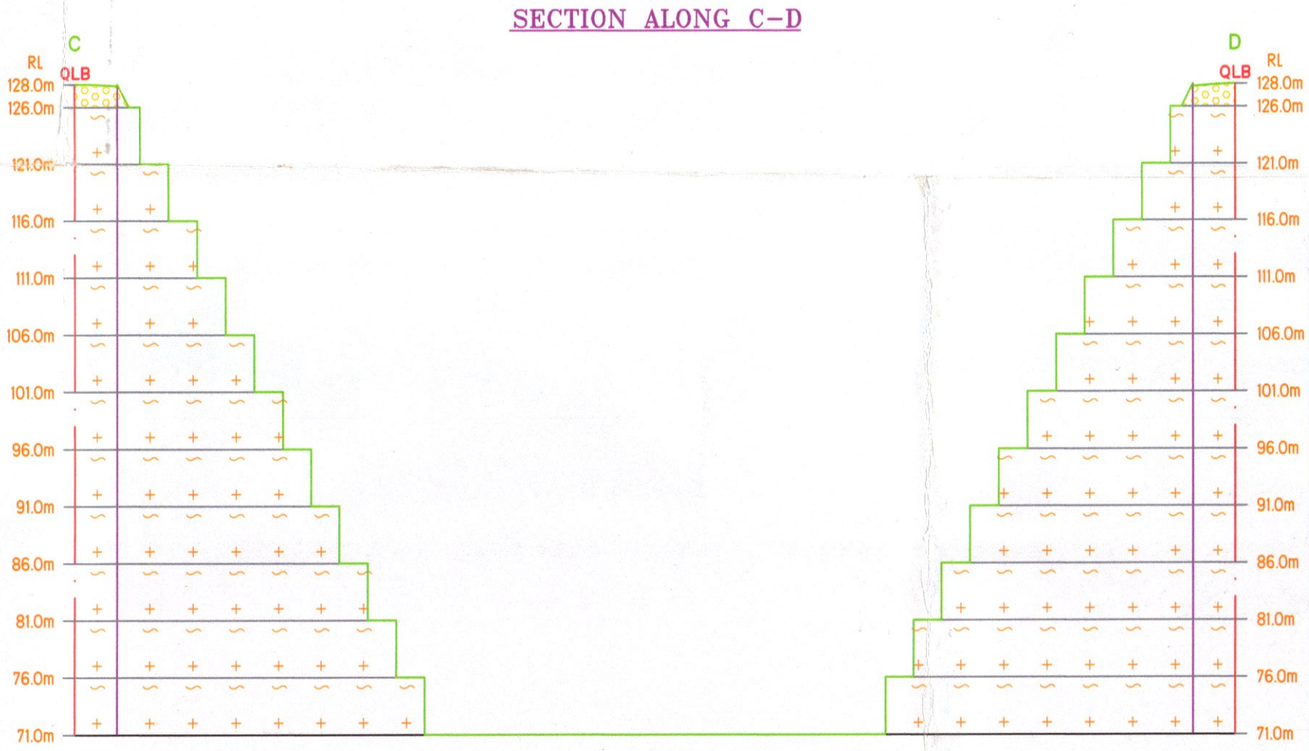


SECTION ALONG A–B

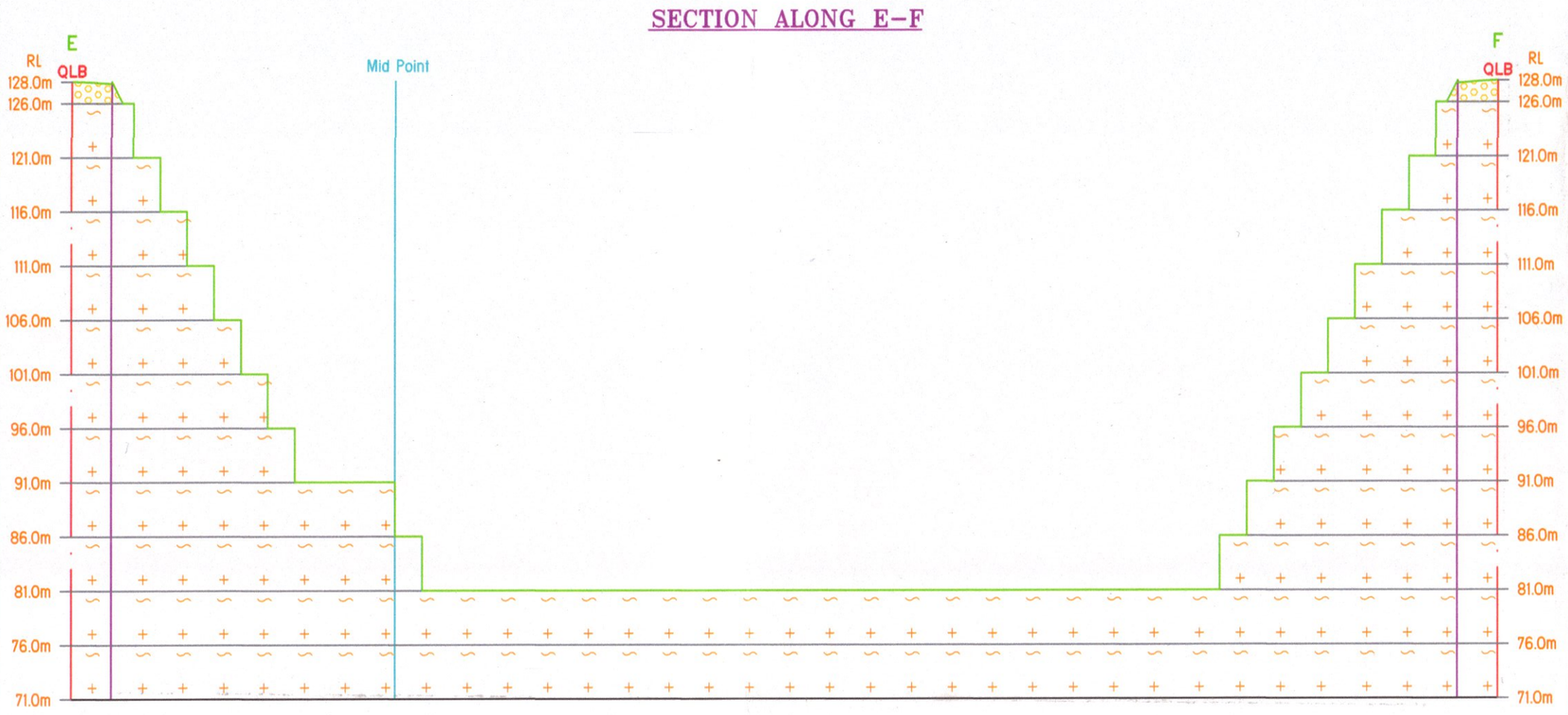
SECTION ALONG X1–Y1



SECTION ALONG C–D



SECTION ALONG E–F



ULTIMATE PIT DIMENSION OF END OF THE MINING PLAN PERIOD
L248m(Max)X149m(Avg)XD57m(Max)

PLATE NO-VI

DATE OF SURVEY : 18.12.2024

APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

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- STRIKE & DIP
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CONCEPTUAL PLAN & SECTIONS

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SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:

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C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

ANNEXURE-4

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Rc.No.M1/177/2024, Dated. 26.12.2024

Sub: **Mines and Minerals** - Minor Minerals - Application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel for quarrying and transportation of Roughstone and Gravel - over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District - Certain particulars required - Environmental Clearance called for - Reg.

Ref :

1. Quarry lease application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, dated. 30.08.2024.
2. Precise Area Communication Notice in Roc.No.M1/177/2024, dated.18.12.2024.
3. Mining Plan Approved letter No. M1/177/2024, dated.26.12.2024.
4. Representation of Thiru.S.Subramanian, S/o.Thiru.Shanmugavel vide letter dated.26.12.2024.

*****

Kind attention is invited to the references cited above,

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street, Punnaiahpuram, Chokkampatti, Kadayanallur Taluk,Tenkasi District has

preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The mining plan submitted by the lessee, Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for quarrying Rough Stone has been approved vide this office letter No.M1/177/2024, dated.20.12.2024 for obtaining Environmental Clearance as per newly introduced Rule Number 41 and 42 of Minor Mineral Concession rules 1959.

3. Thiru.S.Subramanian, S/o.Thiru.Shanmugavel vide reference 4th cited has requested the details of existing / proposed / abandoned mines within a radial distance of 500 meters from the periphery of the proposed mining lease area for obtaining environmental clearance from the State Level environmental Impact Assessment Authority, Chennai.

4. The details of quarry leases granted for Rough Stone and Gravel falling within a radial distance of 500 meters from the subject to leasehold area are furnished below:-

Sl. No	Name & Address of the Lessee	Taluk / Village & SF. No.	Extent Hects	Lease Status
1. Abandoned / Expired Quarries				
1.	**Nil**			

Sl. No	Name & Address of the Lessee	Taluk / Village & SF. No.	Extent Hects	Lease Status
2. Existing Quarries				
1.	Thiru.Senthur pandian, S/o.Muthusamy Pandian, 7-2-4, Aranmanai Street, Surandai, V.K.Pudhur, Tenkasi.	V.K.Pudhur Taluk, Melakalangal Village. SF.No.14/2B (P) (0.09.00), 17/2 (0.10.00), 17/3 & (0.07.50), 17/4	04.26.50	Proceedings Rc.No.M1/36644 /2015, dt.02.02.2023, from 02.02.2023 to 01.02.2028.
3. Proposed Quarries				
1.	Thiru.S.Subra manian, S/o.Thiru.Shanmu gavel,196/4, North Street,Punnaiahpur am, Chokkampatti, Kadayanallur Taluk,Tenkasi District	V.K.Pudhur Taluk, Melakalangal Village. SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50)	04.41.00	Proposed Quarry, 5 years from the date of execution of lease deed.

The proposed area was already granted quarry lease in favour of Tmt.K.Muthammal, W/o Thiru.Kadarkarai Nadar for the period of 22.06.2006 to 21.06.2011 by the Assistant Director of Geology and Mining - Tenkasi, vide Proceedings No.173/51970/2006, dated. 22.06.2006 and the existing pit dimension is given below.

Pit.No.	Length (in meters)	Width (in meters)	Depth (in meters)
1	98	40	8

In view of the above it is recommended that Environmental clearance may be issued in favor of the applicant subject to the usual terms and conditions.

26/12/24

Assistant Director,
Geology and Mining,
Tenkasi.

26/12/24

ANNEXURE-5

TOPOGRAPHICAL VIEW OF MELAKALANGAL

ROUGH STONE & GRAVEL QUARRY

NAME OF THE APPLICANT :		THIRU.S.SUBRAMANIAN
DISTRICT	:	TENKASI
TALUK	:	V.K.PUDHUR
VILLAGE	:	MELAKALANGAL
S.F.NOS	:	16/7, 16/8, 16/9, 16/10, 16/11B(P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 AND 19/11
EXTENT	:	4.41.00Ha

VAO SIGN & SEAL

5. மேலகளங்கல் கிராமம்
வீரகேரளம்புதூர் வட்டம்

Place:

Date:

மேலக்கலங்கல் கிராமம்

நாள் .09.2024

அ1 அறிவிப்பு

தென்காசி மாவட்டம், வீரகேரளம்புதூர் வட்டம், மேலக்கலங்கல் கிராமம், பட்டா புல எண்கள் 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, 19/11 ஆகியவற்றில் மொத்த விஸ்தீரணம் 5.41.00 ஹெக்டேர் நிலத்தில் சாதாரண கற்கள் வெட்டி எடுக்க குத்தகை உரிமம் கோரி, கடையநல்லூர் வட்டம், சொக்கம்பட்டி கிராமம், மஜரா புன்னையாபுரம், வடக்குத் தெரு, கதவிலக்கம் 196/4 எனும் முகவரியைச் சார்ந்த திரு.சுப்பிரமணியன் த.பெ.சண்முகவேல் என்பவர் தென்காசி புவியியல் மற்றும் சுரங்கத்துறை அலுவலகத்தில் விண்ணப்பித்துள்ளார். மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்களுக்கு ஆட்சேபனை ஏதுமிருப்பின் இந்த விளம்பர அறிவிப்பு பிரசுரம் செய்யப்பட்ட ஏழு தினங்களுக்குள் மேலக்கலங்கல் கிராம நிர்வாக அலுவலர் அல்லது கருவந்தா குறுவட்ட வருவாய் ஆய்வாளருக்கு தங்களது ஆட்சேபனையை எழுத்து மூலமாக நேரில் தெரிவிக்க கேட்டுக்கொள்ளப்படுகிறது. ஆட்சேபனை ஏதும் வரப்பெறவில்லை எனில் மனுதாரர் தரப்பில் சமர்ப்பித்துள்ள ஆவணங்களை பரிசீலனை செய்து அதனடிப்படையில் தீர்வு காணப்படும் என்ற விவரம் இதன் மூலம் தெரிவிக்கப்படுகிறது.

பெறுநர்

கிராம நிர்வாக அலுவலர்

5, மேலக்கலங்கல் கிராமம்

வீரகேரளம்புதூர் வட்டம்

வருவாய் ஆய்வாளர்

கருவந்தா குறுவட்டம்

வீரகேரளம்புதூர் வட்டம்

1. க. ராமலிங்கம்
2. அ. கடற்கரை வேல்
3. ராம. ராமகிருஷ்ணன்
4. ஜ. ரிச்சர்டு ஸ்டீபன்
5. ஆ. கந்தசாமி
6. பெரியசாமி
7. பாண்டியராஜன்
8. முருகையா
9 ஆதிமூல பெருமாள்
10. கா. ரா. மகேந்திர ராஜ்
11. ராமலிங்கம்
12. கந்தசாமி
13. பெருமாள்
14. சிவகணேஷ்முருகையா
15. கோவிந்தராஜ் பண்டாரத்தண்ணு.
16. சுப்பையா
17. கடற்கரை
18. முகமதுலிபிராஜகுரு
19. மாட சுப்புராஜ் [illegible]
20. ராமசுப்பிரமணி
21. சங்கர பாண்டியன்
22. வேல்முருகன்
23. சிவ
24. ஆ. ராமசாமி

மேலே கையொப்பமிட்டுள்ள அனைவரும் எங்களது உரிமை கொள்ளை அடிக்கப்பட்டதில் மேற்படி ராமலிங்கம் அவர்களுக்கு முழு அதிகாரம் வழங்கியுள்ளோம்.

P. பிரபு
கிராம நிர்வாக அலுவலர்
5, மேலகிருஷ்ணாபுரம் கிராமம்
விரகேரளம்புதூர் வட்டம்

ANNEXURE-6

MINING PLAN APPROVED
By
Assistant Director
of ... & Mining
Tenkasi Dist.

அனுவைப்படிவ எண் 23

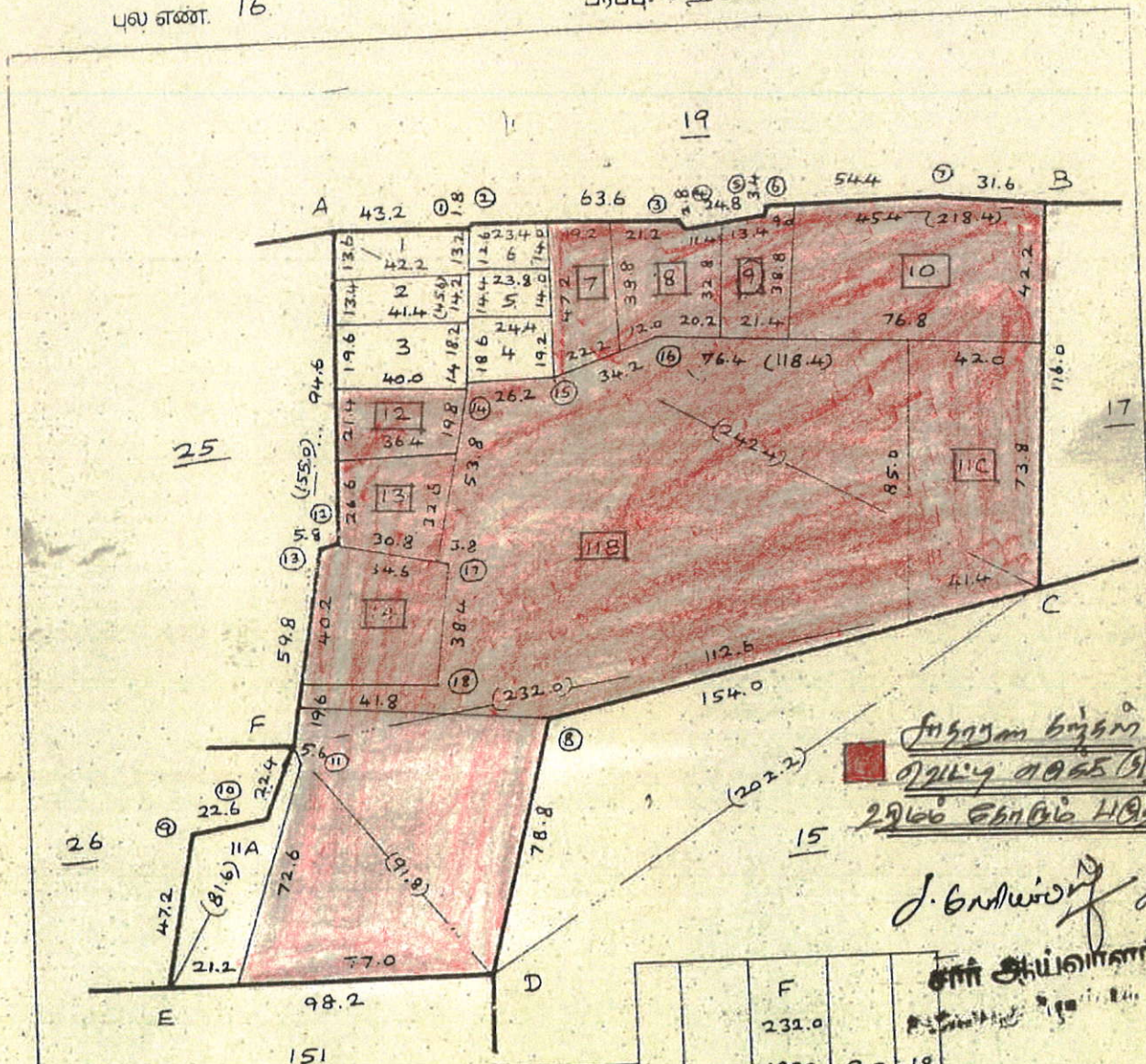
ANNEXURE 11

மாவட்டம். திருநெல்வேலி கட்டபொம்மன் எண். 65

வட்டம் வீரகேரளம்புதூர் கிராமம்

பெயர். மேலகலிங்கல்

புல எண். 16. பரப்பு: ஹெக்டேர் 3 ஏர். 65.5.



சாதாரண கற்கள் வெட்டி எடுக்கும் குத்தகை உரிமை கோரும் பகுதி

J. சொர்ணம்
சார் ஆய்வாளர்

வருவாய் உட்காட்சியர்
வீரகேரளம்புதூர்.

151

												F		
												232.0		
												185.2	9.0	18
												174.2	45.6	17
												C		
												242.4		
											B	104.6	192.4	
											16	16.2	103.2	
													80.4	9.4	15
													57.6	21.8	14
													A		
													F		
													155.0		
											13	3.2	95.4		
													⁂		
8	53.6	57.8					⁂								
		D			12	8.8	94.0								
		B					A								
		218.4					F								
7	3.0	187.6					81.6								
6	0.6	133.4					77.0	3.0	11						
		132.8	3.0	5			58.8	2.0	10						
		107.8	3.2	4	9	15.6	45.0								
		107.0	0.6	3			E								
		43.2	1.0	2			C								
							202.2								
1	0.8	43.2					⁂								
		A													

வரைதல்: பி. அருள்சுந்தர்
10.11.92.

அளவு. 1மி.மீ: 2000 மி.மீ

LEASE APPLIED AREA

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.

மாவட்டம். திருநெல்வேலி கட்டபொம்மன்

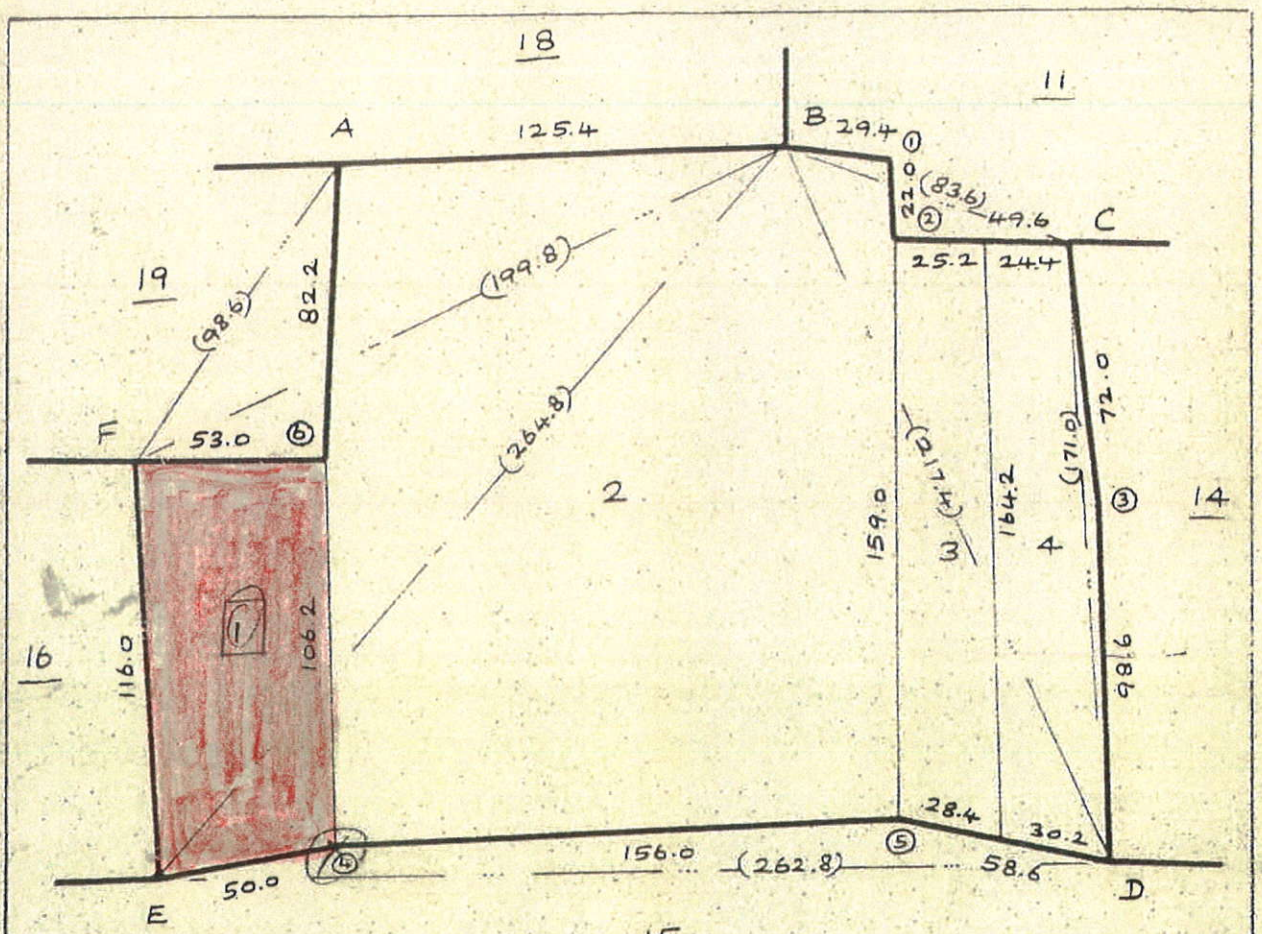
வட்டம். வீரகேரளம்புதூர்

எண்.

கிராமம்

பெயர். மேலகலிங்கல்

புல எண். 17 பரப்பு: ஹெக்டேர் 4 ஏர். 35-5



சாதாரண கற்கள் வெட்டி எடுத்த பிரதேசம்

2 மீடம் கோரும் பகுதி

J. ஜெயபால் அ.சு.
சார் ஆய்வாளர்

வருவாய் வட்டாட்சியர்
வீரகேரளம்புதூர்.

		E							
		264.8					D		
		181.6	81.8	F			262.8		
		B			5	13.6	205.8		
		F			4	8.4	49.4		
		98.6					E		
6	440	698					C		
		A					171.0		
		F					98.6	2.8	3
		199.8					D		
		114.4	50.0	A			C		
		B					83.6		
		217.4					36.4	14.4	2
		159.4	60.4	C	1	6.0	28.8		
		D					B		

வரைந்தவர்:

19.11.92.

அளவு. 1 கி.மீ : 2000 கி.மீ

LEASE APPLIED AREA

மாவட்டம். திருநெல்வேலி கட்டபொம்மன்

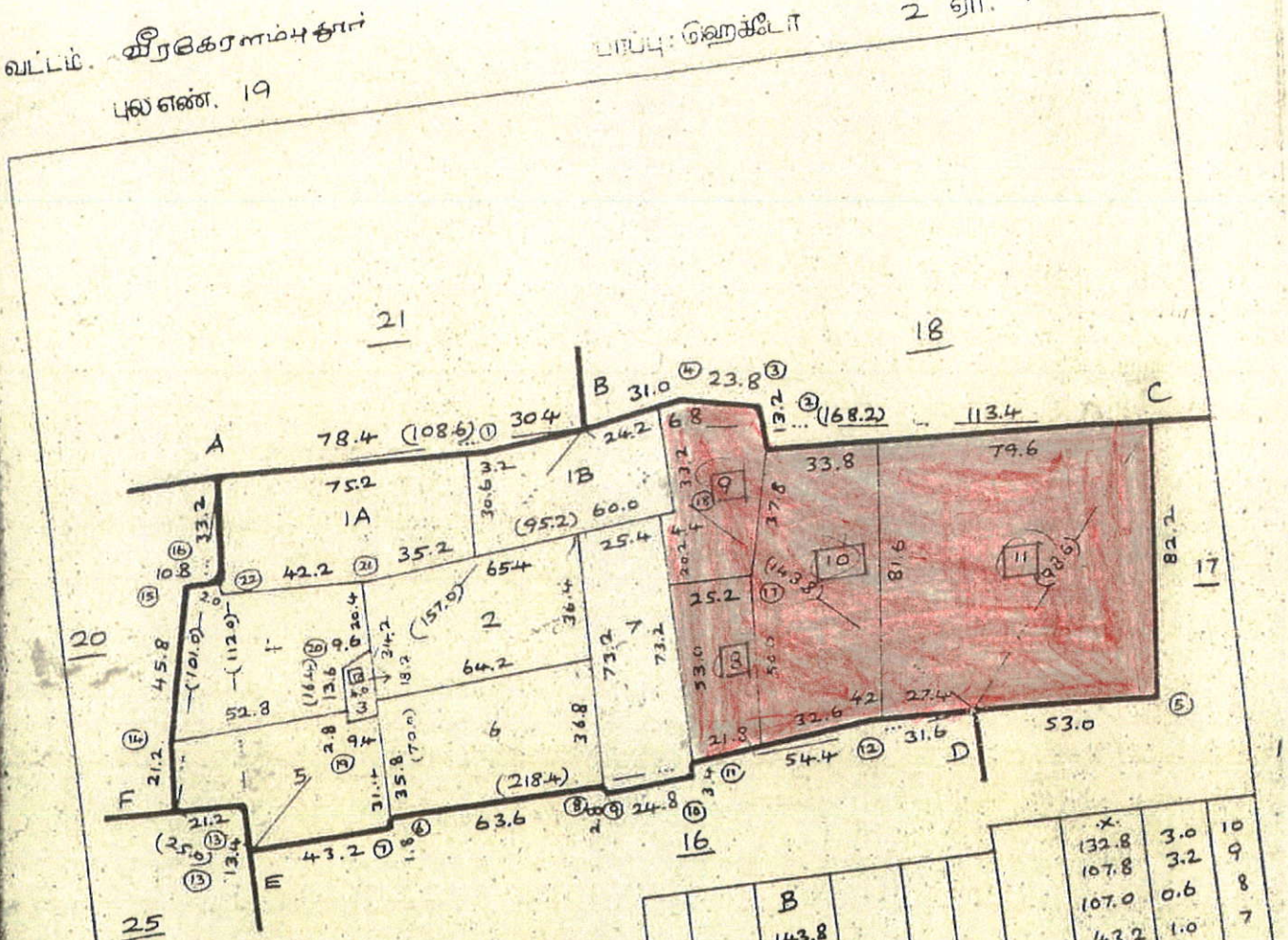
கிராமம் { எண்.
பெயர். இமலகுளிங்கல்

வட்டம். வீரகேரளம்புதூர்

புல எண். 19

பரப்பு: ஹெக்டேர் 2 ஏர்.

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tenkasi Dist.



அனுமதி தரும் பகுதி
எல்லை பிரிக்கும் பகுதி
கொடுக்கப்பட்டது

		A									
		112.0									
22	2.0	76.2									
F	21.4	13.4									
		E									
		B									
		157.0									
21	23.6	82.2									
A	77.8	81.0									
	8.2	62.0									
	5.2	59.4									
20	11.8	59.0									
19	0.4	47.0									
		E									
		B									
		143.8									
18	4.0	106.2									
17	5.6	76.6									
		D									
		A									
		101.0									
		68.0	5.2	16	5	440					
15	5.4	66.4									
14	3.6	21.0									
		F									
		25.0									
		7.6	11.2	13							
		E									
		D									
		218.4									
12	3.0	187.6									
11	0.6	133.2									
		X									

		X		
		132.8	3.0	10
		107.8	3.2	9
		107.0	0.6	8
		43.2	1.0	7
6	0.8	43.2		
		E		
		D		
		98.6		
		69.8		
		C		
		B		
		168.2		
		138.6	.6	4
		115.0	0.6	
2	6.8	112.8		
D	84.4	51.6		
		C		
		B		
		108.6		
		78.4	2.8	
		A		

அளவு. 1 மி.மீ : 2000 மி.மீ

LEASE APPLIED AREA

வருவாய் வட்டாட்சியர்
வீரகேரளம்புதூர்.

வரைந்: வ. அருணாச்சலம்
11.11.92

MINING PLAN APPROVED
By
Director

ANNEXURE IV

ANNEXURE IV

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tenkasi Dist.

தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : தென்காசி வட்டம் : வீரகேரளம்புதூர்

வருவாய் கிராமம் : மேலக்கலங்கல் பட்டா எண் : 1622

உரிமையாளர்கள் பெயர்

1. சண்முகவேலு மகன் செந்தில்குமார்

புல எண்	உ ட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
	.	பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
16	10	0 - 33.00	0.30	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	11B	1 - 99.00	1.92	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	11C	0 - 31.50	0.29	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	12	0 - 7.50	0.07	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	13	0 - 9.00	0.08	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	14	0 - 15.50	0.14	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	7	0 - 9.00	0.08	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	8	0 - 10.00	0.09	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
16	9	0 - 7.50	0.07	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
17	1	0 - 55.00	0.50	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	10	0 - 31.50	0.63	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	11	1 - 64.50	1.30	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	6	0 - 23.00	0.46	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	8	0 - 11.00	0.22	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
19	9	0 - 14.00	0.28	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
4	1A	0 - 25.50	0.51	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
4	1C	0 - 7.00	0.14	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
4	2A	0 - 2.50	0.06	--	--	--	--	2024/0103/34/396943-- -------- 02-06-2024
		6 - 56.00	7.14					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **34/10/005/01622/50521** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 24-07-2024 அன்று 06:24:53 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1433

ஆம் பகலியில் தென்காசி மாவட்டம் விருதுநகர் கிராமக் கணக்கு வட்டம் இலஞ்சிகுமார்

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாருடைய பெயரும் எண்ணும் அல்லது அனுபோக தாருடைய பெயர்.	காருபடி யாளரின் பெயர்.	முதல் போகம்.				
நில அளவை எண். (1)	உட்பிரிவு எண். (2)	பரப்பு. (3)	தீர்வை. (4)	ஒரு போகம் அல்லது இரு போகம். (5)	(6)	நிலத்தின் எந்த பகுதி யாரது காருபடியாளரால் பயிரிடப்பட்டுள்ளதோ (7)	எந்த மாதத்தில் பயிர் செய்யப்பட்டது அறுவடை செய்யப்பட்டது. (8)	பயிரின் பெயர். (9)	பயிரான / அறுவடை யான பரப்பு. (10)	உண்மையான பாய்ச்சல் ஆதாரம். (11)	விளைச்சல் அளவு விபரக்காரு. (12)
16	7	0.090	0.08	1622	மாற்றில்லை						
-	8	0.100	0.09	1622	—do—						
-	9	0.075	0.07	1622	—do—						
-	10	0.330	0.30	1622	—do—						
-	11B	1.770	1.92	1622	—do—						
-	11C	0.315	0.29	1622	—do—						
-	12	0.075	0.07	1622	—do—						
-	13	0.090	0.08	1622	—do—						
-	14	0.155	0.14	1622	—do—						
17	1	0.550	0.50	1622	—do—						
19	6	0.230	0.46	1622	—do—						
-	8	0.140	0.22	1622	—do—						
-	9	0.140	0.28	1622	—do—						
-	10	0.345	0.63	1622	—do—						
-	11	1.445	1.30	1622	—do—						
4	1B	0.255	0.51	1622	—do—						
-	1C	0.070	0.14	1622	—do—						
-	2A	0.025	0.06	1622	—do—						
					உண்மையான						

வரும் நிர்வாக அலுவலர்
மேலகரம் கிராமம்
வீரகேரளம்புதூர் வட்டம்

380/2RF III A-10-20,00,000 Cps.-GBP.-MDU.-7-2021.

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.								
எந்த மாதத்தில் பயிர் செய்யப்பட்டது அறுவடை செய்யப்பட்டது. (13)	பயிரின் பெயர். (14)	பயிரான / அறுவடையான பரப்பு. (15)	உண்மையான பாய்ச்சல் ஆதாரம். (16)	விளைச்சல் அளவு விபரக்காரு. (17)	கிராம அலுவலரின் குறிப்புரை – (1) புலன்களின் பகுதிகளில் பயிரிடப்பட்ட இனங்களில் வித்தியாசம் அமையில். (2) வகுப்பிற்றில் இல்லாத பயிர்களின் சாகுபடியின் பரப்பு தன்மையும் (3) முக்கியமான பாதத்தில் பாய்ச்சல் ஆதாரங்களும் பயிரிடப்பட்டுள்ள நிலங்கள் எவ்வு பதிவுகளிலும் குறித்து பிந்தைய மாதங்களில் நீர் பாய்ச்சப்பட்ட விவரங்கள். (18)	கிழக்கண்ட வகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பாயின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில் (அ) வளம். (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம். (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலம். (ஈ) பயிரிடத்தக்க தரிசு நிலம். (உ) நிலையான புல் தரைகளும் பற்றும் இதர மேய்ச்சல் நிலங்களும். (ஊ) விதைக்கப்பட்ட நிகர பாயில் சேர்க்கப்படாத மாயகைப் பயிர்களும் தோப்புகளும். (எ) நடப்பத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள் (18அ)	பயிர் பார்வையிட்டு அறுவடை குறிப்புகளைச். (19)

தேவையில் சுவிலை

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Asst. Director of Geology & Mining
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ANNEXURE V

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ANNEXURE V

65. மேலக்கலங்கல் கிராமம்.

1	2	3	4	5	6	7	8	9	10	11
							ரூ. பை.	ஏ.மெ.	ரூ. பை.	
16	1	..	ர	பு	..	8-4	6	0 37	0 14	0 06	143 ப. சண்முகவேலாயுத தேவர்.
	2	..	ர	பு	..	8-4	6	0 37	0 13	0 06	425 அ. வெள்ளிமலை தேவர்.
	3	..	ர	பு	..	8-4	6	0 37	0 20	0 07	95 பெ. காளியம்மாள்.
	4	..	ர	பு	..	8-4	6	0 37	0 11	0 06	247 க. பண்டாரக்கண்ணு தேவர்.
	5	..	ர	பு	..	8-4	6	0 37	0 09	0 06	71 இ. கந்தசாமித் தேவர்.
	6	..	ர	பு	..	8-4	6	0 37	0 09	0 06	341 ப. மேலவாசு தேவர்.
	7	..	ர	பு	..	8-4	6	0 37	0 22	0 08	295 பி. பெருமாள் தேவர்.
	8	..	ர	பு	..	8-4	6	0 37	0 25	0 09	248 பி. பண்டாரக்கண்ணுத் தேவர்.
	9	..	ர	பு	..	8-4	6	0 37	0 18	0 07	296 பி. பெருமாள்.
	10	..	ர	பு	..	8-4	6	0 37	0 82	0 30	248 பி பண்டாரக்கண்ணு தேவர்.
	11	..	ர	பு	..	8-4	6	0 37	6 02	2 23	568 ப. சண்முக வேலாயுதத் தேவர் (1), ப. சுப்பையா (2), சி. மேலவாசு தேவர் (3).
	12	..	ர	பு	..	8-4	6	0 37	0 18	0 07	248 பி. பண்டாரக்கண்ணு தேவர்.
	13	..	ர	பு	..	8-4	6	0 37	0 22	0 08	332 க. முத்தாயி.
	14	..	ர	பு	..	8-4	6	0 37	0 38	0 14	341 ப. மேலவாசு தேவர்.
									9 03	3 34	
17	1	..	ர	பு	..	8-4	6	0 37	1 36	0 50	185 இ. சுடலைகண்ணு தேவர்.
	2	..	ர	பு	..	8-4	6	0 37	7 18	2 66	248 பி. பண்டாரக்கண்ணு தேவர்.
	3	..	ர	பு	..	8-4	6	0 37	1 02	0 38	250 சி. பண்டாரக்கண்ணு தேவர்.
	4	..	ர	பு	..	8-4	6	0 37	1 20	0 44	248 பி. பண்டாரக்கண்ணு தேவர்.
									10 76	3 98	
18	1	..	ச	தி.த.	..	..	..	..	1 22	..	....
	2	..	ர	பு	..	8-4	6	0 37	10 08	3 73	499 சி. பண்டாரக்கண்ணுத் தேவர் (1), சி. மேலவாசகத் தேவர் (2), சி. சுப்பையாத் தேவர் (3), சி. மேலவாசகத் தேவர் (4).
									11 30	3 73	
19	1	..	ர	பு	..	7-3	4	0 81	1 06	0 86	186 இ. சுடலைகண்ணு தேவர்.
	2	..	ர	பு	..	7-3	4	0 81	0 55	0 45	247 க. பண்டாரக்கண்ணு தேவர்.
	3	..	ர	பு	..	7-3	4	0 81	0 04	0 06	569 பி. பெருமாள் (1), பி. பண்டாரக்கண்ணு (2), ப. மேலவாசு தேவர் (3).
	4	..	ர	பு	..	7-3	4	0 81	0 52	0 42	247 க. பண்டாரக்கண்ணு தேவர்.
	5	..	ர	பு	..	7-3	4	0 81	0 48	0 39	341 ப. மேலவாசு தேவர்.
	6	..	ர	பு	..	7-3	4	0 81	0 57	0 46	248 பி. பண்டாரக்கண்ணு தேவர்.
	7	..	ர	பு	..	7-3	4	0 81	0 46	0 37	333 க. முத்தம்மாள் என்கிற முத்தாட்சி.
	8	..	ர	பு	..	7-3	4	0 81	0 27	0 22	293 இ. பெருமாள் தேவர்.
	9	..	ர	பு	..	7-3	4	0 81	0 34	0 28	230 மா. இருமால் தேவர்.
	10	..	ர	பு	..	7-3	4	0 81	0 78	0 63	341 ப. மேலவாசு தேவர்.
	11	..	ர	பு	..	7-3	4	0 81	1 60	1 30	355 ப. ராமசாமி.
									6 67	5 44	
20	1	..	ர	பு	..	4-4	4	0 81	0 31	0 25	186 ப. சுடலைமாடப்ப தேவர்.
	2	..	ர	பு	..	4-4	4	0 81	0 34	0 28	184 கு. சுப்பையா தேவர்.

வருவாய் ஆய்வாளர்
வீரகேரளம்புதூர்.

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1	2	3	4	5	6	7	8	9	10	11	12
16	IIA							0.13.0	0.12	264. சி. அப்பாவுப் தேவர்	
	IIB							1.99.0	1.92	639. ப. கண்ணுக வேலாயுத தேவர்@ சு. குருவைகள தேவர்② சு. தொர்ணம்மாள்③	
	IIC							0.31.5	0.29	887. மே. கடற்கரை வேல் தேவர்	
								2.43.5	~~0.33~~ 1.33		
19	IA							0.25.5	0.51	314. கா. பெரியகாளித் தேவர்	
	IB							0.17.5	0.35	343. வெ. மாடப்பத் தேவர்	
								0.43.0	0.86		
20	2A							0.09.5	0.19	315. தி. பெரிய காளி தேவர்	
	2B							0.04.5	0.09	205. சு. சுப்பையாத் தேவர்	
								0.14.0	0.28		

உண்மைக்கே!
கிராம நிர்வாக அலுவலர்
5, மேலகருவாக்கல் கிராமம்
வீரகேரளம்புதூர் வட்டம்

Prepared by
S Ravi
21/1/86

Checked
3/3/86.

1	2
16	1 ..
	2 ..
	3 ..
	4 ..
	5 ..
	6 ..
	7 ..
	8 ..
	9 ..
	10 ..
	11 ..
	12 ..
	13 ..
	14 ..
17	1 ..
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18	1 ..
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19	1 ..
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	2 ..

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ANNEXURE VII

தமிழ்நாடு தமிழ்நாடு TAMILNADU

BF 206869

19.08.2024.

கோ.மலர்க்கொடி
முத்திரைத்தாள் விற்பனையாளர்
[illegible]

தி. செந்தில்குமார், கரையாளனூர்.
சி. சுப்பிரமணியன், புன்னையாபுரம்

குத்தகை ஆவணம்

19.08.2024

தென்காசி மாவட்டம், வீரகேரளம்புதூர் தாலுகா, குறிச்சாம்பட்டி கிராமம், மஜரா கரையாளனூர் ஊரில், நடுத்தெருவில், கதவுஎண் 3/75 நீர் வீட்டில் வசித்து வரும் திரு.மு.சண்முகவேலு அவர்கள் குமாரர் சுமார் 35 வயதுள்ள திரு.ச.செந்தில்குமார்-1 நபராகவும் (குத்தகைவிடுபவர்) (ஆ.எண்.3851 1138 3202)

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

13/24 1986

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By
Deputy Director
of Geology & Mining
Tenkasi Dist.

தமிழ்நாடு तमिलनाडु TAMILNADU

BF 206870

19.08.2024.

K. Mulaikodi

கோ.மலர்க்கொடி
முத்திரைத்தாள் விற்பனையாளர்
மாலை

சி. செந்தில்குமார், கீழையாலங்குளம்
சி. சுப்பிரமணியன், புன்னையாபுரம்

..2..

தென்காசி மாவட்டம், கடையநல்லூர் தாலுகா, சொக்கம்பட்டி கிராமம் மஜரா புன்னையாபுரம் ஊரில், வடக்கு தெருவில், கதவுஎண் 4/196 நீர் வீட்டில் வசித்து வரும் திரு.சண்முகவேல் அவர்கள் குமாரர் சுமார் 41 வயதுள்ள திரு.சுப்பிரமணியன்-2 நபராகவும் (குத்தகைபெறுபவர்) (ஆ.எண்.4485 3135 2047)

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1956

2வது தான் பதிவுஅலுவலர்

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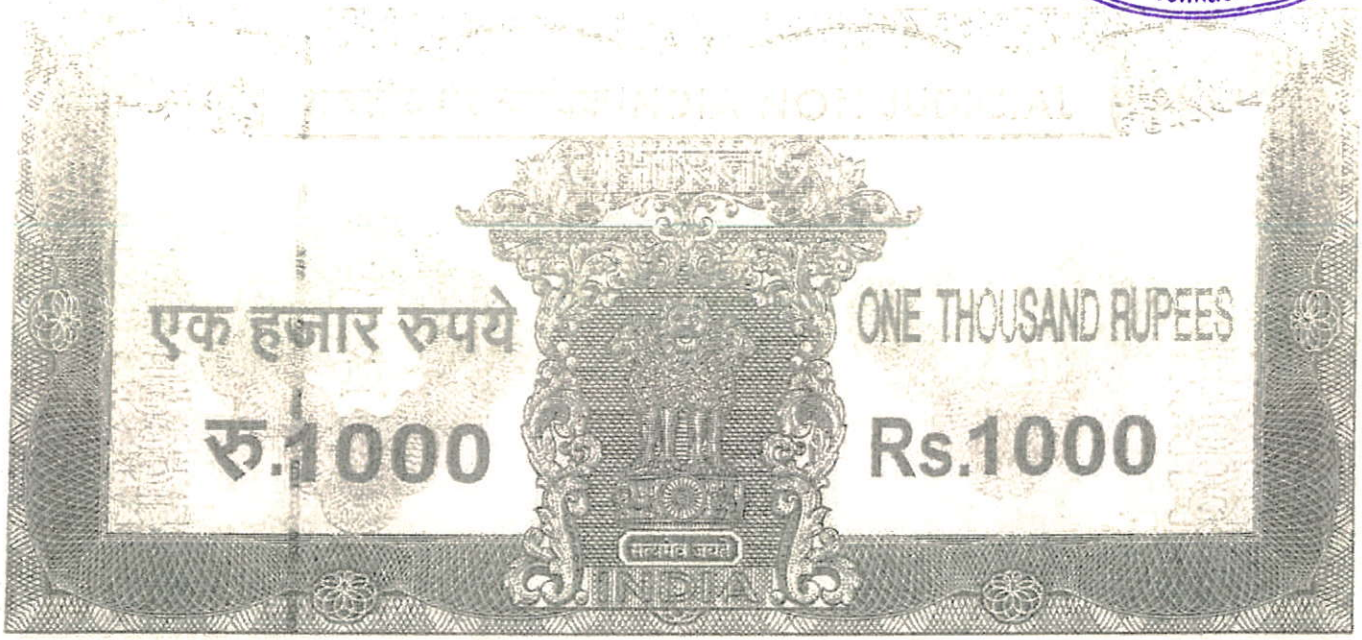

தமிழ்நாடு तमिलनाडु TAMILNADU

BF 206871

19.08.2024.

கோ.மலர்க்கொடி
முத்திரைத்தாள் விற்பனையாளர்
ஊத்துமலை
உரிமம் எண் 6/2009/மா.ப.தென்

சி. செந்தில்குமார், கரையாளனேரி
சி. சிவபிரமணியன், புன்னையாபுரம்

..3..

நம்மில் 1வது நபருக்கு கடந்த 23.05.2024 தேதியில் ஊத்துமலை சார்பதிவகம் ஆவணஎண் 1.1197/2024 நீர் கிரைய பத்திரத்தின் பிரகாரம் சுயார்ஜித்மாய் உரிமைப்பட்டும், பாத்தியப்பட்டும், பட்டா எண் 1622 நீராக நம்மில் 1வது நபரின் பெயரால் தனிப்பட்டா ஏற்பட்டும், பட்டா எண்கள் 858 1217,1478 நீராக கூட்டுப்பட்டா ஏற்பட்டும், நாளதுதேதிவரை நம்மில் 1வது நபரின் தனித்த ஆளுகையிலும், அனுபவத்திலும் இருந்து வருகிற இதன

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1 13 2024 : 1956
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தபசில் சொத்துக்களைப் பொறுத்து நம்மில் 2வது நபருக்கு இந்த குத்தகை ஆவணம்மூலம் சாதாரண கற்கள் மற்றும் கிராவல்மண் எடுக்கும் காரியத்திற்காகவும், - மாண்புமிகு.தென்காசி மாவட்ட ஆட்சித்தலைவர் அவர்களிடம் விண்ணப்பம் செய்து, உரிய உரிமம் பெற்று, தொழில் செய்துவரும் வகைக்காக நாளதுதேதியிலிருந்து வருகிற 20.08.2039 தேதிவரையிலான 15வருடத்திற்கு குத்தகைக்கு கொடுப்பதாக நம்மில் 1வது நபர் ஒப்புக்கொண்டு, வருடம் ஒன்றுக்கு ரூ.25,000/- வீதம் மேற்படி 15வருடத்திற்கும் ரூ.3,75,000/- (ரூபாய்.மூன்றுலட்சத்தி எழுபத்தி ஐந்தாயிரத்திற்கு மட்டும்) நம்மில் 2வது நபரிடமிருந்து நம்மில் 1வது நபர் ரொக்கமாக பெற்று கொண்டுவிட்டபடியால் தபசில் சொத்துக்களைப் பொறுத்து நம்மில் 1வது நபர் மேற்படி வாய்தாகாலம் வரை, தேவையான சாதாரணகற்கள் மற்றும் கிராவல்மண் எடுத்துக்கொள்ளவேண்டியது என்றும், மேற்படி வாய்தாகாலம் முடிந்தபின்பு, தபசில் சொத்துக்களை நல்லநிலைமையில் நம்மில் 2வது நபர், நம்மில் 1வது நபர் வசம் ஒப்படைத்து போகவேண்டியது என்றும், நாம் இருசாராரும் மனப்பூர்வமாக சம்மதித்து கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு இந்தகுத்தகை ஒப்பந்த பத்திரத்தில் நாம் இருவரும் கையெழுத்து செய்துள்ளோம்.

நிபந்தனைகளின் விவரமாவது:

1. குத்தகை சொத்துக்களில் குத்தகை பெறுபவராகிய 2வது பார்ட்டியார் சாதாரண கற்கள் மற்றும் கிராவல் மண் எடுக்கும் காரியத்திற்காக மட்டும் உபயோகித்துக் கொள்ள வேண்டியது.
2. தபசில் சொத்துக்களைப்பொறுத்து மேற்படி குத்தகைகாலம் வரையில், குத்தகை விடுபவராகிய 1வது பார்டியார், எந்தவிதமான தாவா, வில்லங்கம், விவகாரம், நீதிமன்ற பற்றுகை போன்ற இடையூறுகளையும் செய்வதில்லை என்று உறுதியளிக்கிறார்.

குத்தகைவிடுபவர் குத்தகை பெறுபவர்

.....பத்தாவது.....ஆண்டு.....19.6.....
ஆவணம்13.....நகல்எண்கொண்டது
4.....வது தான் பதிவு எழுத்தர்

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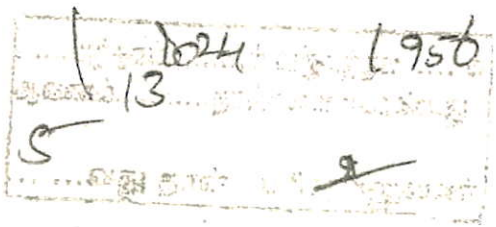
3. கனிமவளத்துறையின் மூலம் குவாரி உரிமம் பெற்று அரசுக்கு செலுத்தவேண்டிய ராயல்பட்டி, வருமானவரி, விற்பனைவரி, GST வரி மற்றும் அதனை சார்ந்த பிற வரிகள் அனைத்தையும் அரசுக்கு செலுத்தவேண்டியது குத்தகை பெறுபவராகிய 2வது பார்டியாரையே சார்ந்ததாகும். குத்தகை விடுபவராகிய 1வது பார்டிக்கு மேற்படி வரி சம்மந்தப்பட்ட விவகாரங்கள் எதுவும் சம்மந்தமில்லை என்றும், மேற்படி வரிசம்மந்தமான விவரங்கள் எதுவும் நம்மில் 1வது பார்டியை எந்தவிதத்திலும் கட்டுப்படுத்தாது என்றும் நம்மில் 2வது பார்டி உறுதியளிக்கிறார்.
4. தபசில் சொத்துக்களைப்பொறுத்து மராமத்து பணிகள் செய்யவேண்டிய அனைத்து செலவினங்களும், குத்தகைபெறுபவராகிய 2வது பார்டியாரையே சார்ந்தது என்றும்,மேற்படி செலவு சம்மந்தமாக குத்தகை விடுபவராகிய 1வது பார்ட்டியாரை எவ்விதத்திலும் கட்டுப்படுத்தாது.
5. தபசில் சொத்துக்களுக்கு உண்டான அரசுக்கு செலுத்தவேண்டிய நிலவரியை நிலஉரிமையாளராகிய குத்தகை விடுபவராகிய 1வது பார்ட்டியாரே உரிய வகையில் வருடாந்தோரும், நிலவரி பசலி ஆண்டில் வருவாய் செலுத்தி அதற்கான ரசீது பெற்றுக்கொள்ளவேண்டியது.
6. குத்தகை காலம் முடியும்வரை தபசில் சொத்துக்களைப்பொறுத்து குத்தகை விடுபவரும், குத்தகை பெறுபவராகிய நாம் இருவரும் எவ்வித வில்லங்க பாராதினங்களுக்கும் உட்படுத்துவதில்லை என்றும், மனப்பூர்வமாக சம்மதிக்கிறோம்.

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்



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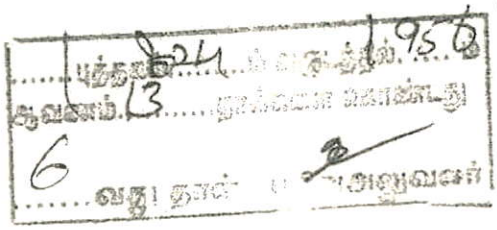
7. குத்தகை காலம் முடிந்தபின்பு தபசில் சொத்துக்களில் எவ்விதமான சாதாரண கற்கள் மற்றும் கிராவல் மண் ஆகிய எதையும், நம்மில் 2வது பார்ட்டி எடுத்து பயன்படுத்தகூடாது என்றும், சொத்துக்களை நல்லநிலைமையில் நம்மில் 1வது பார்ட்டியிடம் ஒப்படைத்து போகவேண்டியது.
8. தபசில் சொத்துக்களைப்பொறுத்து குத்தகை பெறுபவராகிய நம்மில் 2வது பார்ட்டியாருக்கு இந்த ஆவணம் மூலம் குத்தகை வழங்கியுள்ளதை தவிர, வேறு எவருக்கும் உள்குத்தகைக்கு விடவில்லை என்று - குத்தகை விடுபவராகிய நம்மில் 1வது பார்ட்டி உறுதியளிக்கிறார். அதேபோல் குத்தகை பெறுபவராகிய நம்மில் 2வது பார்ட்டியார் வேறு எவருக்கும் தபசில் சொத்துக்களை உள்குத்தகைக்கு விடுவதில்லை என்றும், அவ்விதம் ஏதாகிலும், உள்குத்தகைக்கு விடப்பட்டுள்ளதாக தெரியவந்தால் இந்த குத்தகை ஆவணமானது நம்மில் 2வது பார்ட்டிக்கு செல்லத்தக்கதல்ல. என்றும், குத்தகை பெறுபவராகிய நம்மில் 2வது பார்ட்டியார் உறுதியளிக்கிறார்.
9. இந்த குத்தகை ஆவணத்தைப்பொறுத்து குத்தகை தொகை சம்மந்தமாக மேற்கொண்டு கூடுதலாக - நம்மில் குத்தகை விடுபவராகிய 1வது பார்ட்டியார் குத்தகை பெறுபவராகிய 2வது பார்டியாரிடம் கேட்டு எவ்விதத்திலும் வில்லங்கம் செய்வதில்லை என்றும், உறுதியளிக்கிறார்.

குத்தகைவிடுபவர்

குத்தகைபெறுபவர்



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மேற்க்கண்ட நிபந்தனைகளின்படி நாம் இருபார்ட்டியாரும் நடந்துக்கொள்வோம் என்று மனப்பூர்வமாக சம்மதித்து ஒப்புக்கொண்டும், இந்த குத்தகை ஆவணத்தில் கண்ட சரத்துக்களை எதுவும் நாம் இருவரும் மீறுவதில்லை என்றும், உறுதியளித்து இதில் நாம் இருவரும் கையெழுத்து செய்துள்ளோம்.

தபசில் விவரம்

1) தென்காசி பதிவு மாவட்டம், ஊத்துமலை சார்பதிவகம், வீரகேரளம்புதூர் தாலுகா, **மேலக்கலங்கல் கிராமம்**, ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 4/1A** நீரில் செண்டு 63க்கு ஹெக்டேர் 0.25.50 முழுவதும்

2) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 4/1C** நீரில் செண்டு 17.30க்கு ஹெக்டேர் 0.07.00 முழுவதும்.

3) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 4/2A** நீரில் செண்டு 6.18க்கு ஹெக்டேர் 0.02.50 முழுவதும்.

4) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/10** நீரில் செண்டு 82க்கு ஹெக்டேர் 0.33.00 முழுவதும்.

5) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/11B** நீரில் ஏக்கர் 4 செண்டு 92க்கு ஹெக்டேர் 1.99.00 முழுவதும்.

6) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/11C** நீரில் செண்டு 78க்கு ஹெக்டேர் 0.31.50 முழுவதும்.

குத்தகைவிடுபவர் குத்தகைபெறுபவர்

1956

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7) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட புஞ்சை சர்வே எண் 16/12 நீரில் செண்டு 19க்கு ஹெக்டேர் 0.07.50 முழுவதும்.

8) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/13** நீரில் செண்டு 22க்கு ஹெக்டேர் 0.09.00 முழுவதும்.

9) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/14** நீரில் செண்டு 38க்கு ஹெக்டேர் 0.15.50 முழுவதும்.

10) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/7** நீரில் செண்டு 22க்கு ஹெக்டேர் 0.09.00 முழுவதும்.

11) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/8** நீரில் செண்டு 25க்கு ஹெக்டேர் 0.10.00 முழுவதும்.

12) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 16/9** நீரில் செண்டு 19க்கு ஹெக்டேர் 0.07.50 முழுவதும்.

13) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 17/1** நீரில் ஏக்கர் 1 செண்டு 36க்கு ஹெக்டேர் 0.55.00 முழுவதும்.

14) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/10** நீரில் செண்டு 79க்கு ஹெக்டேர் 0.31.50 முழுவதும்.

15) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/11** நீரில் ஏக்கர் 4 செண்டு 06க்கு ஹெக்டேர் 1.64.50 முழுவதும்.

குத்தகைவிடுபவர் குத்தகைபெறுபவர்

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16) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட புஞ்சை சர்வே எண் 19/6 நீரில் செண்டு 57க்கு ஹெக்டேர் 0.23.00 முழுவதும்.

17) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1217 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/7** நீரில் செண்டு 46க்கு ஹெக்டேர் 0.18.50ல் தென்பக்கம் செண்டு 22.51க்கு ஹெக்டேர் 0.09.11 முழுவதும்.

18) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 858 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/3** நீரில் செண்டு 4க்கு ஹெக்டேர் 0.01.50ல் இருக்கும் கிணர் 1ல் ஷை கிணர் அடிநிலம், கிணர் ஜலம், கமலை, கமலைகுழி, பத்தநடை தவணைவாய்க்கால் வழிநடை வகையறாக்களிலும் பிரிவின்றி 4ல் 1பங்கு பாத்தியமும்,

19) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/8** நீரில் செண்டு 27க்கு ஹெக்டேர் 0.11.00 முழுவதும்.

20) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1622 நீர் பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 19/9** நீரில் செண்டு 35க்கு ஹெக்டேர் 0.14.00 முழுவதும்.

21) மேற்படி கிராமம், ஷை கிராம பட்டா எண் 1478 நீர்பட்டாவில் கண்ட **புஞ்சை சர்வே எண் 5/2** நீரில் ஏக்கர் 6 செண்டு 47க்கு ஹெக்டேர் 2.62.00ல் பிரிவின்றி ஏக்கர் 2 செண்டு 47 க்கு ஹெக்டேர் 1.00.00 முழுவதும் தபசில் விவரம் சரி.

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

1956

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மேற்படி சொத்து ஆலங்குளம் ஊராட்சி ஒன்றியத்தை சேர்ந்த மேலக்கலங்கல் கிராம பஞ்சாயத்துபோர்டுஆளுகைக்குஉட்பட்டது.

குத்தகைவிடுபவர்

குத்தகை பெறுபவர்

சாட்சிகள்:

1)முருகன், த/பெ.மூக்கையா, 1/52,காளிஅம்மன்கோவில் தெரு, ஊத்துமலை.(ஆ.எண்:7778 7315 7192)

2)ஐயப்பன்,த/பெ.முத்தையாபிள்ளை,14/50,ஆர்.சி.பள்ளிமேலத் தெரு,ஊத்துமலை.(ஆ.எண்:2802 8852 4442)

ஆவணம் தயாரித்தவர்

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Government of India
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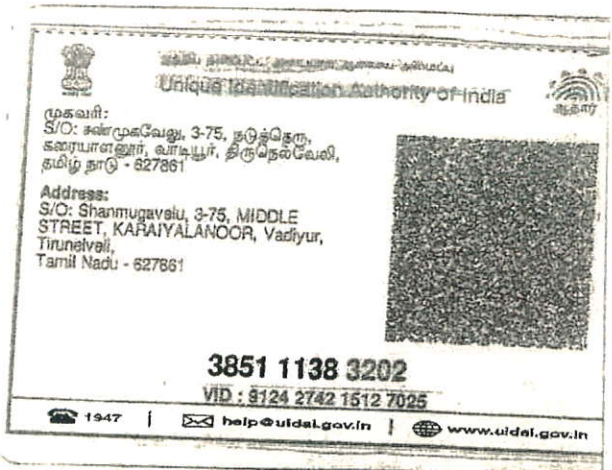
ஆண்/ MALE
Download Date: 14/05/2020
Issue Date: 20/06/2017
3851 1138 3202
VID : 9124 2742 1512 7025
எனது ஆதார், எனது அடையாளம்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முகவரி:
S/O: சண்முகவேலு, 3-75, நடுத்தெரு,
கரையாளனூர், வாடியூர், திருநெல்வேலி,
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Tirunelveli,
Tamil Nadu - 627861
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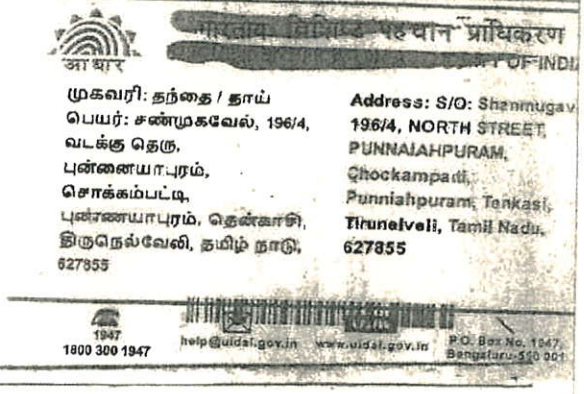
ஆண் / Male
4485 3135 2047
ஆதார் - சாதாரண மனிதனின் அதிகாரம்


आधार
मुकवरी: तन्दै / तायं
பெயர்: சண்முகவேல், 196/4,
வடக்கு தெரு,
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புன்னையாபுரம், தென்காசி,
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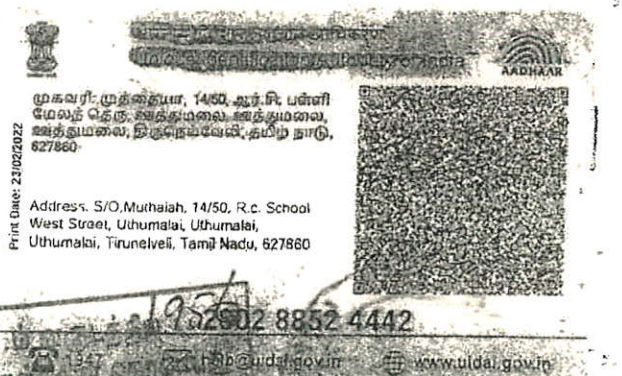
मेरा आधार, मेरी पहचान


AADHAAR
முகவரி: முத்தையா, 14/50, ஆர்.சி பள்ளி
மேலத் தெரு, வத்துமலை, வத்துமலை,
வத்துமலை, திருநெல்வேலி, தமிழ் நாடு,
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7778 7315 7192
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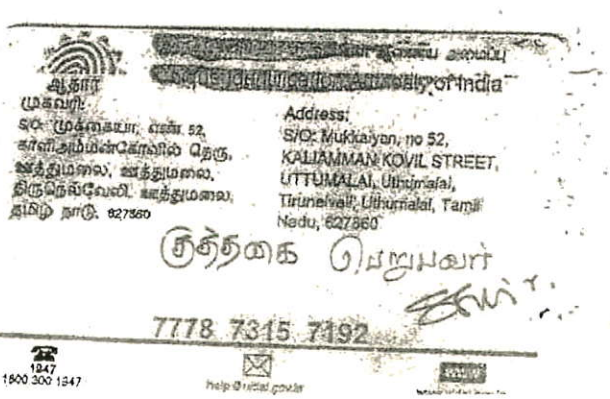
ஆதார்
முகவரி:
S/O: முக்கையா, எண். 52,
காளியம்மன்கோவில் தெரு,
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R/ஊத்துமலை/பத்திரம்-1/1956/2024

1899ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 42வது பிரிவின் கீழான சான்று

2024ம் ஆண்டு வரிசை எண் 1236

3/75, நடுத்தெரு, கரையாளனூர், குறிச்சாம்பட்டி, வீரகேரளம்புதூர், தென்காசி, தமிழ்நாடு, இந்தியா, 627861-ல் வசிக்கும் திரு செந்தில்குமார் என்பவரிடமிருந்து ₹ 755/- (ரூபாய் எழுநூற்று ஐம்பத்தைந்து மட்டும்) இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்.

சார்பதிவாளர் : ஊத்துமலை
நாள்: 19/08/2024

சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு 41ன் படி ஆட்சியர்

2024 ஆம் ஆண்டு ஆகஸ்ட் மாதம் 19ம் தேதி மு.ப. 11:41 மணியளவில் ஊத்துமலை சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ₹ 4,260/- செலுத்தியவர்.

இடது பெருவிரல்

SENTHIL Kumar

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்

"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் :
UKC:6479673b759e3ad0a74c10aa36d64fb2dbc22d
(Details from UIDAI : Senthilkumar S S/O: Shanmugavelu, 10-08-1988, xxxxxxxx3202)

எழுதி வாங்கியதாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்

"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் :
UKC:196841b343355bb6b346fba34484788ff89589
(Details from UIDAI : Subramanian S/O: Shanmugavel, 10-

1 / 2

MINING PLAN APPROVED
By
Assistant Director
Geology & Mining
Tenkasi Dist.

R/ஊத்துமலை/புத்தகம்-1/1956/2024

	05-1982, xxxxxxxx2047)	

2024 ஆம் ஆண்டு ஆகஸ்ட் மாதம் 19ம் நாள்

கா ஷர்மிளா
சார்பதிவாளர்
ஊத்துமலை

R/ஊத்துமலை/புத்தகம்-1/1956/2024 எண்ணாகப் பதிவு செய்யப்பட்டது.

நாள்: 19/08/2024
ஊத்துமலை

கா ஷர்மிளா
சார்பதிவாளர்

.....புத்தகம்2024.....ம் வருடத்தின்19.08
ஆவணம்13.....தான்கணை கொண்டது
13.....வது தான் பதிவுசெய்வனர்

ANNEXURE-7

Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/4961	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4961	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	03.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd ★ Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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Please Contact:
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TEST REPORT

Report No.	SARL/24/4962	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4962	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	03.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt Ltd ★ Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4963	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4963	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	04.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4964	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4964	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	04.12.2024	Test Completed on	16.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4965	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4965	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	05.12.2024	Test Completed on	16.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4966	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4966	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	05.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	39.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4967	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4967	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	06.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4968	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4968	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	06.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	41.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4969	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4969	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	07.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4970	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4970	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	07.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4971	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4971	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	07.12.2024	Test Completed on	16.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4972	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4972	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	08.12.2024	Test Completed on	16.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/4973	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4973	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	08.12.2024	Test Completed on	16.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/4974	Report Date.	16.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-4974	Sample Received on	09.12.2024
Sample Collected by	LABORATORY	Test Commenced on	09.12.2024
Sample Collected on	08.12.2024	Test Completed on	16.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5015	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5015	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	10.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	38.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	17.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5016	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5016	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	10.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5017	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5017	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	10.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5018	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5018	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	11.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5019	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5019	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	11.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5020	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5020	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	11.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5021	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5021	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	12.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5022	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5022	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	12.12.2024	Test Completed on	23.12.2024
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5023	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5023	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	13.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5024	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5024	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	13.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5025	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5025	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	14.12.2024	Test Completed on	23.12.2024
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	62.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5026	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5026	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	14.12.2024	Test Completed on	23.12.2024
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5027	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5027	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	15.12.2024	Test Completed on	23.12.2024
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5028	Report Date.	23.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5028	Sample Received on	16.12.2024
Sample Collected by	LABORATORY	Test Commenced on	16.12.2024
Sample Collected on	15.12.2024	Test Completed on	23.12.2024
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	µg/m^3	46.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	µg/m^3	27.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	µg/m^3	5.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	µg/m^3	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5069	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5069	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	17.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	68.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	32.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5070	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5070	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	17.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5071	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5071	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	18.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	63.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	30.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5072	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5072	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	18.12.2024	Test Completed on	30.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5073	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5073	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	19.12.2024	Test Completed on	30.12.2024
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5074	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5074	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	19.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5075	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5075	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	20.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5076	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5076	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	20.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5077	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5077	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	21.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5078	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5078	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	21.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5079	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5079	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	21.12.2024	Test Completed on	30.12.2024
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/24/5080	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5080	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	22.12.2024	Test Completed on	30.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5081	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5081	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	22.12.2024	Test Completed on	30.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/5082	Report Date.	30.12.2024

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-5082	Sample Received on	23.12.2024
Sample Collected by	LABORATORY	Test Commenced on	23.12.2024
Sample Collected on	22.12.2024	Test Completed on	30.12.2024
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0292	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0292	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	24.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0293	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0293	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	24.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0294	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0294	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	24.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0295	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0295	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	25.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0296	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0296	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	25.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0297	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0297	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	25.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0298	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0298	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	26.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0299	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0299	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	26.12.2024	Test Completed on	06.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	38.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	17.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0300	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0300	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	27.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0301	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0301	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	27.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0302	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0302	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	28.12.2024	Test Completed on	06.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	58.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0303	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0303	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	28.12.2024	Test Completed on	06.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0304	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0304	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	29.12.2024	Test Completed on	06.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	67.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	31.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0305	Report Date.	06.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0305	Sample Received on	30.12.2024
Sample Collected by	LABORATORY	Test Commenced on	30.12.2024
Sample Collected on	29.12.2024	Test Completed on	06.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0346	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0346	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	31.12.2024	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0347	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0347	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	31.12.2024	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	39.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0348	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0348	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	01.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0349	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0349	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	01.01.2025	Test Completed on	13.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0350	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0350	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	02.01.2025	Test Completed on	13.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0351	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0351	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	02.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	39.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0352	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-00352	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	03.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd ★ Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0353	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0353	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	03.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	41.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0354	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0354	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	04.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0355	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0355	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	04.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0356	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0356	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	04.01.2025	Test Completed on	13.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0357	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0357	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	05.01.2025	Test Completed on	13.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0358	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0358	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	05.01.2025	Test Completed on	13.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0359	Report Date.	13.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0359	Sample Received on	06.01.2025
Sample Collected by	LABORATORY	Test Commenced on	06.01.2025
Sample Collected on	05.01.2025	Test Completed on	13.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0400	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0400	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	07.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	17.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0401	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0401	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	07.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0402	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0402	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	07.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0403	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0403	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	08.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0404	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0404	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	08.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0405	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0405	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	08.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0406	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0406	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	09.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0407	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0407	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	09.01.2025	Test Completed on	20.01.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0408	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0408	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	10.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0409	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0409	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	10.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0410	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0410	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	11.01.2025	Test Completed on	20.01.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0411	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0411	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	11.01.2025	Test Completed on	20.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0412	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0412	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	12.01.2025	Test Completed on	20.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	60.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0413	Report Date.	20.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0413	Sample Received on	13.01.2025
Sample Collected by	LABORATORY	Test Commenced on	13.01.2025
Sample Collected on	12.01.2025	Test Completed on	20.01.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0454	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0454	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	14.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0455	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0455	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	14.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0456	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0456	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	15.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0457	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0457	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	15.01.2025	Test Completed on	27.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0458	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0458	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	16.01.2025	Test Completed on	27.01.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0459	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0459	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	16.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0460	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0460	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	17.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0461	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0461	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	17.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0462	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0462	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	18.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0463	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0463	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	18.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0464	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0464	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	18.01.2025	Test Completed on	27.01.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0465	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0465	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	19.01.2025	Test Completed on	27.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0466	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0466	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	19.01.2025	Test Completed on	27.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0467	Report Date.	27.01.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0467	Sample Received on	20.01.2025
Sample Collected by	LABORATORY	Test Commenced on	20.01.2025
Sample Collected on	19.01.2025	Test Completed on	27.01.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	12.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0508	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0508	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	21.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0509	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0509	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	21.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0510	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0510	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	21.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0511	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0511	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	22.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0512	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0512	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	22.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0513	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0513	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	22.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0514	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0514	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	23.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0515	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0515	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	23.01.2025	Test Completed on	06.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	38.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0516	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0516	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	24.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0517	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0517	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	24.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0518	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0518	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	25.01.2025	Test Completed on	06.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	69.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	32.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0519	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0519	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	25.01.2025	Test Completed on	06.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0520	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0520	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	27.01.2025	Test Completed on	06.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	65.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	31.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0521	Report Date.	06.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0521	Sample Received on	28.01.2025
Sample Collected by	LABORATORY	Test Commenced on	28.01.2025
Sample Collected on	27.01.2025	Test Completed on	06.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0562	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0562	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	28.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0563	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0563	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	28.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	58.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0564	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0564	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	29.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	64.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	30.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0565	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0565	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	29.01.2025	Test Completed on	10.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0566	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0566	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	30.01.2025	Test Completed on	10.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0567	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0567	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	30.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0568	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0568	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	31.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0569	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0569	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	31.01.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0570	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0570	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	01.02.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	39.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0571	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0571	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	01.02.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0572	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0572	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	01.02.2025	Test Completed on	10.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0573	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0573	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	02.02.2025	Test Completed on	10.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0574	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0574	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	02.02.2025	Test Completed on	10.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0575	Report Date.	10.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0575	Sample Received on	03.02.2025
Sample Collected by	LABORATORY	Test Commenced on	03.02.2025
Sample Collected on	02.02.2025	Test Completed on	10.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0616	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0616	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	04.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0617	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0617	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	04.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0618	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0618	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	04.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	12.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0619	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0619	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	05.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0620	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0620	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	05.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0621	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0621	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	05.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0622	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0622	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	06.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0623	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0623	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	06.02.2025	Test Completed on	17.02.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0624	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0624	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	07.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0625	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0625	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	07.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0626	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0626	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	08.02.2025	Test Completed on	17.02.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0627	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0627	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	08.02.2025	Test Completed on	17.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	41.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0628	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0628	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	09.02.2025	Test Completed on	17.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0629	Report Date.	17.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0629	Sample Received on	10.02.2025
Sample Collected by	LABORATORY	Test Commenced on	10.02.2025
Sample Collected on	09.02.2025	Test Completed on	17.02.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0197	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0197	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	11.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	68.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	32.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0198	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vanniper Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0198	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	11.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	25%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0199	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0199	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	12.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	61.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0200	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vanniper Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0200	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	12.02.2025	Test Completed on	24.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0201	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Palamukkal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0201	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	13.02.2025	Test Completed on	24.02.2025
Temperature	34°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0202	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kilsiviri Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0202	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	13.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0203	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Palamukkal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0203	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	14.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	27%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0204	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kilsiviri Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0204	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	14.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0205	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Peravur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0205	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	15.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	26%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	41.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0206	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Bramaddesam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0206	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	15.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0207	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellakulam Church
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0207	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	15.02.2025	Test Completed on	24.02.2025
Temperature	36°C	Relative Humidity	28%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	12.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0208	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Peravur Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0208	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	16.02.2025	Test Completed on	24.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0209	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Bramaddesam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0209	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	16.02.2025	Test Completed on	24.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0210	Report Date.	24.02.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellakulam Church
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0210	Sample Received on	17.02.2025
Sample Collected by	LABORATORY	Test Commenced on	17.02.2025
Sample Collected on	16.02.2025	Test Completed on	24.02.2025
Temperature	35°C	Relative Humidity	32%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	12.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0739	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0739	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	18.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0740	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0740	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	18.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0741	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0741	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	18.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0742	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-Arunachapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0742	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	19.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0743	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Melakalangal Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0743	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	19.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0744	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A7-Vellalankulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0744	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	19.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	21%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0745	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0745	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	20.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.0	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0746	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0746	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	20.02.2025	Test Completed on	10.03.2025
Temperature	37°C	Relative Humidity	23%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0747	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Echchanda Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0747	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	21.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0748	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Kariandarkulam Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0748	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	21.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0749	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0749	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	22.02.2025	Test Completed on	10.03.2025
Temperature	36°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0750	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0750	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	22.02.2025	Test Completed on	10.03.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0751	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-Project Site
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0751	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0752	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Poovilangapuram Village
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-0752	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Temperature	35°C	Relative Humidity	30%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/0769	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/NO/CHE-0769	Date of Monitoring	22.02.2025/ 23.02.2025
Sample Collected by	LABORATORY		

Time in hrs	N1	N2	N3	N4	N5	N6	N7
06.00	41.8	40.8	40.9	42.3	41.4	38.4	39.5
07.00	43.3	42.3	44.3	44.9	39.1	45.7	40.9
08.00	45.1	44.1	43.4	43.3	42.4	49.8	44.3
09.00	48.5	47.5	47.8	46.9	43.8	51.1	46.2
10.00	50.4	49.4	46.2	49.0	50.8	48.4	48.4
11.00	52.1	51.1	45.0	51.8	49.9	51.4	50.3
12.00	53.0	52.0	43.8	53.0	46.6	45.6	54.6
13.00	54.8	53.8	48.3	49.3	47.5	46.4	56.1
14.00	56.1	55.1	45.5	46.9	53.1	49.4	53.8
15.00	53.5	52.5	48.9	44.8	52.9	48.5	55.0
16.00	59.0	58.0	46.8	48.9	51.5	47.9	51.9
17.00	57.1	56.1	45.8	47.9	52.9	43.4	51.1
18.00	51.9	50.9	49.0	46.0	49.6	41.5	51.9
19.00	50.8	49.8	48.1	46.6	46.0	40.6	45.8
20.00	49.9	48.9	41.0	44.0	45.4	39.9	42.1
21.00	46.8	45.8	39.9	42.3	43.5	42.9	40.9
22.00	43.9	42.9	38.8	42.9	45.0	38.5	40.3
23.00	40.4	39.4	37.1	41.3	43.1	37.1	40.2
24.00	39.3	38.3	38.6	40.4	40.9	39.6	39.6
01.00	38.5	37.5	37.3	41.8	42.6	37.7	38.6
02.00	39.9	38.9	36.1	41.0	41.4	38.5	38.3
03.00	37.6	36.6	38.5	41.1	40.3	39.8	38.8
04.00	40.5	39.5	39.3	39.6	38.9	37.7	38.5
05.00	41.5	40.5	40.9	39.3	39.0	41.4	39.9

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TEST REPORT

Report No.	SARL/25/0769

Report Date.	10.03.2025

	N1	N2	N3	N4	N5	N6	N7
DAY EQUIVALENT	**53.1**	**52.1**	**46.1**	**47.9**	**49.1**	**47.3**	**51.0**
NIGHT EQUIVALENT	**40.6**	**39.6**	**38.6**	**41.1**	**41.9**	**39.0**	**39.3**
DAY & NIGHT EQUIVALENT	**51.5**	**50.5**	**44.7**	**46.5**	**47.7**	**45.8**	**49.4**

Remarks:

LOCATIONS:

N1-Project Site
N2-Poovilangapuram Village
N3-Echchanda Village
N4-Kariandarkulam Village
N5-Arunachapuram Village
N6-Melakalangal Village
N7-Vellalankulam Village

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/0762	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S1-Project Site

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0762	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.73
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	89.97
3	Dry matter content	IS 15106: 2002	%	96.23
4	Water Content	IS 15106: 2002	%	3.77
5	Organic Matter	IS 2720: Part 22: 1972	%	14.80
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	320
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SILTY CLAY
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	2.53
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	50.75
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	46.73
9	Phosphorus as P	IS 10158: 1982	mg/kg	4.20
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	635
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	404
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	28.6
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	42

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0763	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S2-Poovilangapuram Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0763	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	5.19
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	138.2
3	Dry matter content	IS 15106: 2002	%	92.38
4	Water Content	IS 15106: 2002	%	7.62
5	Organic Matter	IS 2720: Part 22: 1972	%	5.71
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	124
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	5.18
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	15.07
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	79.75
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.80
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	478
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	226
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	42.9
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	40

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0764	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S3-Echchanda Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0764	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	8.03
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	298.0
3	Dry matter content	IS 15106: 2002	%	88.99
4	Water Content	IS 15106: 2002	%	11.01
5	Organic Matter	IS 2720: Part 22: 1972	%	7.62
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	256
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SILTY CLAY LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	7.99
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	64.30
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	27.71
9	Phosphorus as P	IS 10158: 1982	mg/kg	2.70
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	745
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	369
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	33.3
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	38

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0765	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S4-Kariandarkulam Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0765	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.77
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	271.6
3	Dry matter content	IS 15106: 2002	%	97.66
4	Water Content	IS 15106: 2002	%	2.34
5	Organic Matter	IS 2720: Part 22: 1972	%	20.47
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	189
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	7.76
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	28.66
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	63.58
9	Phosphorus as P	IS 10158: 1982	mg/kg	2.90
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	559
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	342
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	33.3
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	39

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0766	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S5-Arunachapuram Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0766	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.65
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	376.5
3	Dry matter content	IS 15106: 2002	%	90.11
4	Water Content	IS 15106: 2002	%	9.89
5	Organic Matter	IS 2720: Part 22: 1972	%	20.04
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	221
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SILTY CLAY
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	5.93
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	46.38
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	47.73
9	Phosphorus as P	IS 10158: 1982	mg/kg	2.80
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	632
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	298
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	43.8
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	40

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Authorized Signatory

S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0767	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S6-Melakalangal Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0767	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	8.03
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	225.0
3	Dry matter content	IS 15106: 2002	%	94.83
4	Water Content	IS 15106: 2002	%	5.17
5	Organic Matter	IS 2720: Part 22: 1972	%	12.56
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	176
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SILTY CLAY
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	6.26
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	42.60
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	51.14
9	Phosphorus as P	IS 10158: 1982	mg/kg	3.26
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	487
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	246
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	38.5
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	42

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Authorized Signatory

S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0768	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	SOIL
Sample Mark	S7-Vellalankulam Village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-0768	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	8.52
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	178.0
3	Dry matter content	IS 15106: 2002	%	94.62
4	Water Content	IS 15106: 2002	%	5.38
5	Organic Matter	IS 2720: Part 22: 1972	%	27.75
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	245
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SILTY CLAY
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	7.47
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	51.39
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	41.14
9	Phosphorus as P	IS 10158: 1982	mg/kg	4.20
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	910
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	539
12	Total soluble sulphates	IS 2720: Part 27: 1977	%	BDL (D.L.0.02)
13	Porosity	SARL/SOP/SO/001 (Issue No:01, Issue Date – 01.03.2023): 2023	%	33.3
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	44

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

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TEST REPORT

Report No.	SARL/25/0753	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	W1-Project Site

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0753	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.53	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	228.7	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	140	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	62.2	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	17.7	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	4.32	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	44.2	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	18.0	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	80.8	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	45.3	1000

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TEST REPORT

Report No.	SARL/25/0753

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	12.2	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.13	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	1.28	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.27	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/0754	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	W2-Poovilangapuram Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0754	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.73	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1376	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1376	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	840	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	442	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	98.0	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	47.2	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	245	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	197	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	190	1000

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TEST REPORT

Report No.	SARL/25/0754

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	197	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.12	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	5.47	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.62	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd ★ Chennai - 45.

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/0755	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	W3-Echchanda Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0755	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	8.10	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1267	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	765	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	277	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	43.4	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	40.5	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	108	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	169	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	279	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	231	1000

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Report No.	SARL/25/0755

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	218	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.06	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	2.68	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.56	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd ★ Chennai - 45.

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/0756	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	W4-Kariandarkulam Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0756	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	8.00	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	608.1	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	366	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	201	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	48.2	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	19.3	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	121	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	80.3	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	150	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	120	1000

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TEST REPORT

Report No.	SARL/25/0756

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	65.4	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.08	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.24	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.45	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/0757	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	W5-Arunachapuram Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0757	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.81	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1248	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1248	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	750	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	329	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	75.6	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	33.7	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	189	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	140	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	262	1000

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TEST REPORT

Report No.	SARL/25/0757

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	155	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.13	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	2.54	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.36	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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TEST REPORT

Report No.	SARL/25/0758	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	S6-Melakalangal Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0758	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.75	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	960.7	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	580	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	301	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	72.3	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	28.9	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	181	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	121	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	175.0	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	179.0	1000

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TEST REPORT

Report No.	SARL/25/0758

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	142	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.08	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.65	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.54	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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TEST REPORT

Report No.	SARL/25/0759	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	W7-Vellalankulam Village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0759	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.31	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1017	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	620	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	274	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	74.8	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	20.9	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	187	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	87.0	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	246	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	250	1000

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TEST REPORT

Report No.	SARL/25/0759

Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	110.9	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.05	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	1.32	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.36	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/0760	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	SW1-Karupinamkulam Lake

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0760	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	136
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.13
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	351.3
B.	**Chemical parameters**			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	214
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	68.3
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	14.4
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	7.73
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	36.1
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	32.2
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	96.8
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	68.5

Shrient Analytical and Research Labs Pvt. Ltd
416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/25/0760	Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	37.2
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.56
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	1.32
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.34
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL(D.L-0.05)
19	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	33.0
20	Bio Chemical Oxygen Demand 3 Days at 27^{o}c	IS 3025 (Part 44): 1993	mg/L	7.5
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	228
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	5.9

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

*****END OF THE REPORT*****

Please Contact:
For any Technical Issues & Complaints: technical@shrientanalytical.com

Terms and conditions:

(1) The test items will not be retained for more than 15 days from the date of issue of test report. (2) The results relate only to the items tested (3) The test report shall not be reproduced except in full without the written approval of the laboratory (4) Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4. (5) The correctness of the information related to sample(s) in the Test Request Form/Customer letterhead/Email is the customer's responsibility. The laboratory reports the said information in the test report and is not liable for the same.

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TEST REPORT

Report No.	SARL/25/0761	Report Date.	10.03.2025

Customer Name & Address	Rough Stone And Gravel Quarry Of Thiru.S.Subramanian, extent of 4.41.00hectares ,Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District,
Sample Description	WATER
Sample Mark	SW2-Echchanda lake

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-0761	Sample Received on	24.02.2025
Sample Collected by	LABORATORY	Test Commenced on	24.02.2025
Sample Collected on	23.02.2025	Test Completed on	10.03.2025
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	76
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.32
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	259.1
B.	**Chemical parameters**			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	160
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	92.4
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	25.7
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	6.74
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	64.3
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	28.1
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	60.6
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	37.4

Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/25/0761	Report Date.	10.03.2025

Sl. No.	Parameters	Protocol	Unit	Result
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	40.3
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.39
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	1.25
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.29
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL(D.L-0.05)
19	Chemical Oxygen Demand	APHA 24th Edition 5220 B: 2023	mg/L	36.8
20	Bio Chemical Oxygen Demand 3 Days at 27^{o}c	IS 3025 (Part 44): 1993	mg/L	8.2
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	80.0
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.2

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
S. BALAMURUGAN
Asst.Technical Manager

*****END OF THE REPORT*****

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ANNEXURE-8

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

416/15, DHARGAS ROAD, PERUNGALATHUR, WEST TAMBARAM, CHENNAI, KANCHIPURAM, TAMIL NADU, INDIA

in the field of

TESTING

Certificate Number: TC-12339

Issue Date: 30/09/2023 **Valid Until:** 29/09/2025

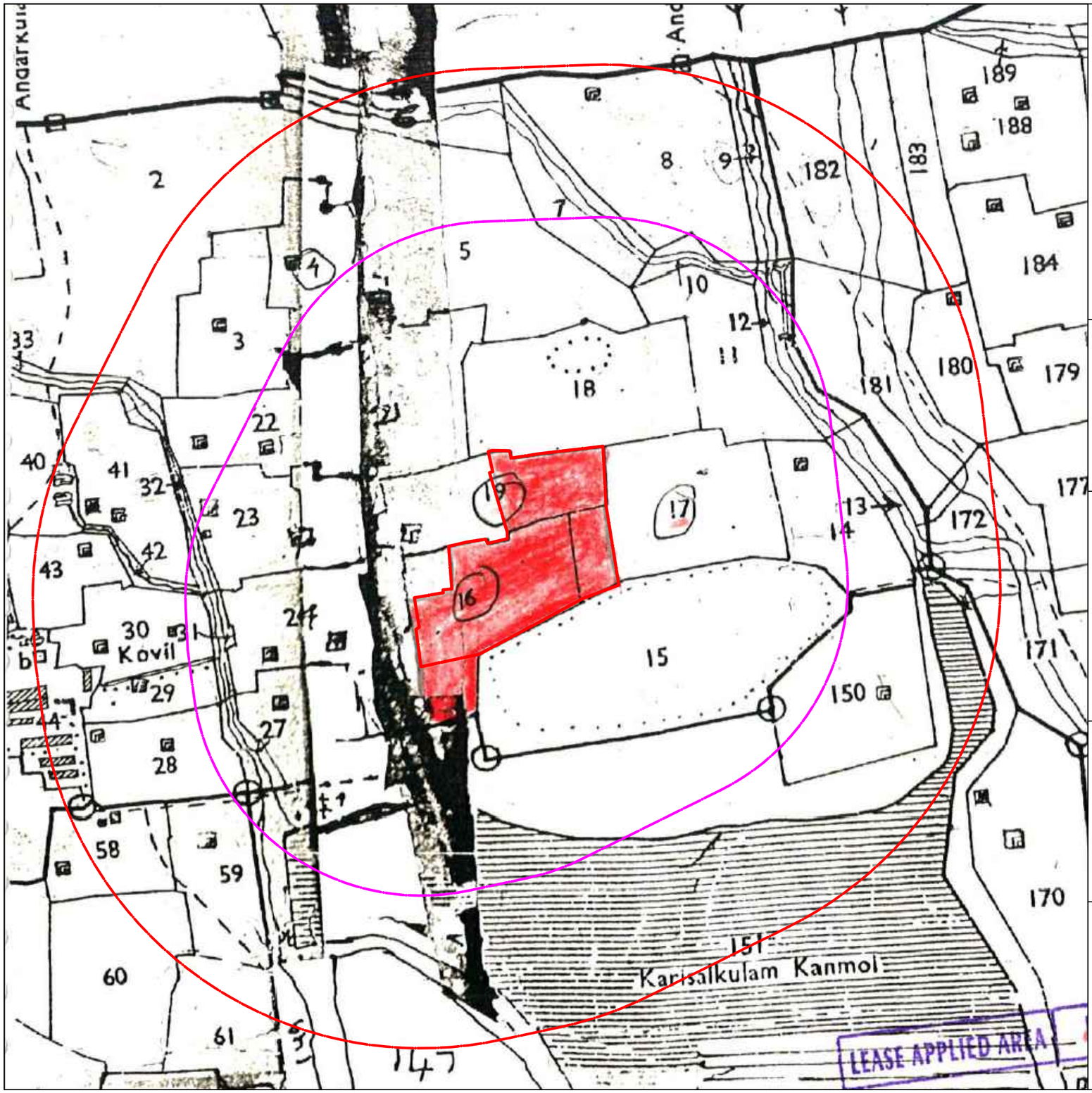
This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: SHRIENT ANALYTICAL AND RESEARCH LABS PRIVATE LIMITED

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

ANNEXURE-9



APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY LEASE APPLIED AREA:

S.F.NOS :16/7,16/8,16/9,16/10,16/11B(P),
:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT: 4.41.00 Ha,
VILLAGE: MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT: TENKASI.

INDEX

TOPO SHEET NO: 58 G/ 08

LATITUDE :09°02'11.42"N to 09°02'20.32"N

LONGITUDE :77°29'32.60"E to 77°29'41.40"E

Q.L.APPLIED AREA

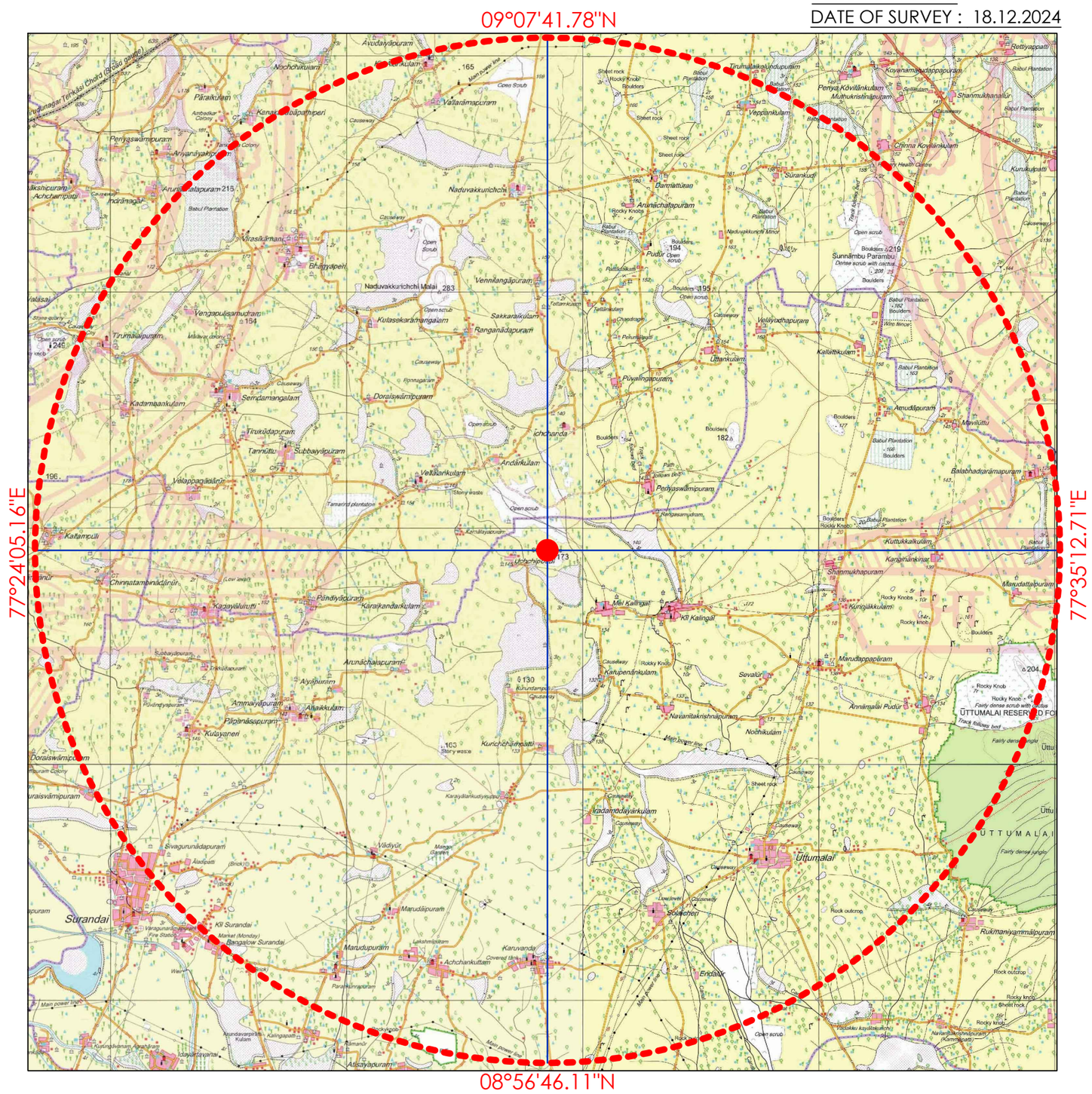
300M RADIUS

500M RADIUS

ANNEXURE-10

PLATE NO-I C

DATE OF SURVEY : 18.12.2024



APPLICANT:

THIRU.S.SUBRAMANIAN,
S/O. THIRU.SHANMUGAVEL,
196/4,NORTH STREET,
CHOKKAMPATTI VILLAGE,
KADAYANALLUR TALUK ,TENKASI DISTRICT.

QUARRY LEASE APPLIED AREA:

S.F.NOS :16/7,16/8,16/9,16/10,16/11B(P),
:16/11C,16/12,16/13,16/14,17/1,19/8
:19/9,19/10&19/11,
EXTENT : 4.41.00 Ha,
VILLAGE : MELAKALANGAL,
TALUK : V.K.PUDHUR,
DISTRICT : TENKASI.

INDEX

TOPO SHEET NO: 58 G/ 08

LATITUDE :09°02'11.42"N to 09°02'20.32"N

LONGITUDE :77°29'32.60"E to 77°29'41.40"E

Q.L.APPLIED AREA

10KM RADIUS

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

PREPARED BY :

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

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

ANNEXURE-11

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU 21.1.2025 EK 069441

S. Subramanian
Tenkasi

M. ரோஜா, த/பெ தண்டாயுதம், ப.தா.எ
உரிமம் எண்: 52/06-14/91
கச்சேரி வீதி, ஓமலூர்
சேலம் மாவட்டம்

AFFIDAVIT TO SEIAA, TAMIL NADU

I, Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, residing at No. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District- 627 855, do hereby solemnly declare and sincerely affirm that, I have applied for getting Terms of Reference to SEIAA, Tamil Nadu for quarry lease of Rough Stone and Gravel quarry over an extent of 4.41.0 Ha., of Patta land in S.F.Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 over an extent of 4.41.0 Ha., in Melakalangal Village, V.K.Pudhu Taluk, Tenkasi District, Tamil Nadu State.

1. None of the following features are located within a 10 km radius of the proposed quarry site;
   a. Protected areas notified under the Wildlife (Protection) Act, 1972 (NBWL).
   b. Wild Life Sanctuary
   c. Critically polluted areas as notified by the central pollution control board constituted under the Water (Prevention and Control of Pollution) Act 1974.
2. The proposal for Corporate Environment Responsibility (CER) activities is given as follows;

NOTARY K.SITHESWARAN B.L., ADVOCATE Salem Dt. Regn No. 10987/2015 GOVT. OF INDIA

Sl. No.	PROPOSED CER ACTIVITIES	COST IN LAKHS.
1	Plantation	5.0
2	Laying of Paver Block Providing doors to the toilets, refurbish the roof, repairing pipelines and providing RO system and providing books for the library	
3	Maintenance of the toilet for the entire lease period	
	Total	**5.0**

The above proposed CER cost will be spent on Panchayat Union Primary School, Uchipothai Village and I assure you that the proposed CER activities will be completed before the commencement of quarrying operations.

3. The proposal for an Environment Management Plan and its cost is given as follows;

Activities	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	0.44	0.44
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	8.00	0.50
	Muffle blasting – To control fly rocks during blasting	0.00	0.05
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	2.50	0.25
	No overloading of trucks/tippers/tractors	0.00	0.05
	Stone carrying trucks will be covered by tarpaulin	0.00	0.10
	Enforcing speed limits of 20 km/hr within ML area	0.30	0.03
	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.05
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	0.00	0.88
	Installing wheel wash system near gate of quarry	0.50	0.20
Sub-Total (A)		**11.74**	**2.55**
Noise Environment	Provision for Portable blaster shed	0.50	0.02
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	0.00	22.85

NOTARY K.SRINIVASAN, B.L., ADVOCATE Salem Dt-636 455 Regn No. 1090/2015 Exp.Dt. 22.02.2025 GOVT. OF INDIA

Sub-Total (B)		**0.50**	**22.87**
Waste Management	Provision for domestic waste collection and disposal through authorized agency	0.25	0.02
	Installation of dust bins	0.05	0.22
Sub-Total (C)		**0.30**	**0.22**
Mine Closure	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	0.44	0.05
	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	8.82	0.10
	Plantation inside ML area (800 Nos.)	1.60	0.24
	Plantation outside ML area (1400 Nos.)	4.20	0.42
Sub-Total (D)		**15.06**	**0.81**
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	0.10	0.01
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	0.00	0.50
	Workers will be provided with Personal Protective Equipment's	1.36	0.34
	Health checkup for workers will be provisioned	0.00	0.34
	First Aid facility Provision	0.00	0.09
	Signage & boards for safety precautions	0.10	0.02
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles / HEMMs. Flaggers will be deployed for traffic management	2.21	0.10
	Installation of CCTV cameras in the mines and mine entrance	0.30	0.05
	Implementation as per Mining Plan and ensure safe quarry working (Statutory)	0.00	10.80
	Slope Stability Analysis	2.00	0.00
Sub-Total (E)		**6.07**	**12.25**
Grand Total (A+B+C+D+E)		**33.67**	**38.70**

NOTARY K.SIVARAMAN, B.L., ADVOCATE Salem Dt-636 455 Regn No. 10987/2015 Exp.Dt. 22.02.2025 GOVT. OF INDIA

Total EMP Cost for 5 years is 247.50 lakhs i.e., Rs.33.67 Lakhs of Capital Cost + Rs.213.83 Lakhs of Recurring Cost **(For 5 Years)**

4. Details of quarry within a 500m radius of the applied area

S.No	Name of the Quarry Owner	S. F. Nos & Village	Lease Period	Area
a. Abandoned Quarry- Nil				
b. Existing Quarry				
1.	Thiru.Senthurpandian, S/o. Muthusamy Pandian, No.7-2-4, Aranmanai Street, Surandai, V.K.Pudhur, Tenkasi District.	S.F.Nos.14/2B (P), 17/2, 17/3 & 17/4 Melakalangal Village	EC grated by SEIAA, TN dated 20.01.2023 Proceedings Rc.No.M1/36644/2015, dated 02.02.2023, 02.02.2023 to 01.02.2028	4.26.5 Ha
c. Proposed Quarry				
1.	Thiru.S.Subramanian S/o. Thiru.Shanmugavel, No. 196/4, North Street, Chokkampatti Village, Kadayanallur Taluk, Tenkasi District. Pin Code – 627 855.	S.F.Nos.16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11 Melakalangal Village	Proposed for five years from the execution of the lease deed	4.41.0 Ha
Total Area of Cluster				**8.67.5 Ha**

The total lease area within the 500m radius works out to 8.67.5 Ha including this proposed lease area (4.41.0 Ha). **As such, cluster situation is applicable and Environmental Clearance for this project is applied under B1 Cluster Category.**

5. There will not be any hindrance or disturbance to the people living no uprooted/ nearby our quarry site while transporting the minerals and due to quarrying activities.

6. There is no approved habitation within a 300m radius from the periphery of our quarry.

7. I swear that afforestation will be carried out during the course of the quarrying operation and maintained.

NOTARY K.SIVARAMAN, B.A., ADVOCATE Salem Dt. 636 455 Regn No. 10987/2006 Exp.Dt. 22.02.2025 GOVT. OF INDIA

8. The required insurance will be taken in the name of the laborers working in our quarry site.
9. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for transportation of Rough Stone and Gravel.
10. I will not engage in any child labor in our quarry site and I aware that engaging in child labor is punishable under the law.
11. All types of safety / protective equipment will be provided to all the laborers working in our quarry.
12. No permanent structures, temples etc., are located within a 250m radius of the periphery of our quarry.
13. I will erect fencing around the quarry lease before commencement of mining activities.
14. I will carry out systematic and scientific mining employing a qualified mine manager, blaster.
15. I will inform DGMS before commencement of mining activities.
16. I will ensure that all the EMP measures are followed for the entire lease period.
17. I ensure to do the social and environmental commitment as mentioned in the mining plan to the best of our knowledge.

Notary Sign & Seal

28/1/2021

K.SITHESWARAN, BL.,
Advocate & Notary Public
Opp. BDO Office, Omalur (Tk),
SALEM (Dt)-636 455.
Regn. No: 10987/2015.
Cell: 94435 16211

Quarry owner sign & Seal

Thiru.S.Subramanian

NOTARY
K.SITHESWARAN, B.L.,
ADVOCATE
Salem Dt.-636 455
Regn. No. 10987/2015
Exp.DL
22.02.2025
GOVT. OF INDIA