

DRAFT EIA & EMP FOR ROUGH STONE QUARRY

CATEGORY – B1

(Submitted for Public Hearing as per the provisions of EIA Notification 2006 & its amendments thereof)

ToR Identification No. TO25B0108TN5338525N (F.No.12756), dated 24/11/2025

PROPOSED QUARRY LEASE DETAILS	
SURVEY NO	49/2 (Part-2)
VILLAGE	ADAIYUR
TALUK	TIRUVANNAMALAI
DISTRICT	TIRUVANNAMALAI
EXTENT	2.00.0 Ha
CLUSTER EXTENT	6.30.0 Ha
PROPOSED PRODUCTION OF ROUGH STONE FOR 5 YEARS	ROUGH STONE 2,32,622m ³ PEAK PRODUCTION – 47,270 m ³
LAND	GOVERNMENT PORAMBOKE LAND

(Sector No. 1(a) Sector No.1 as per NABET)

Category of the Project: B1 Cluster Mining, Total Cluster Area –6.30.0.0 Ha

Baseline Monitoring Period – October to December 2025

APPLICANT

TMT.R.KALPANA

W/o. MANIKANDAN, RESIDING AT No.798,
BAJANAI KOVIL STREET, DEVIKAPURAM,CHEPET TALUK,
TIRUVANNAMALAI DISTRICT – 606 902.

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/26-29/RA 0478, Valid Until - 03.01.2029 Contact: 97502 23535 & 94446 54520 Email: infoglobalmining@gmail.com, globalminingsolutionsale@gmail.com	M/s. SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED (NABL Accredited Testing Laboratory) Valid Until -29.09.2029 #416/15, Dhargas Road, Perungalathur, West Tambaram, Chennai, Tamil Nadu, India.

AMENDMENT PAGE

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

M/s. Global Mining Solutions, Salem is very much thankful to Tmt.R.Kalpana, Lessee for the confidence and trust placed on the organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone quarry over a lease extent of 2.00.0 Ha., & Cluster extent of 6.30.00 Ha., located at Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai 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 Adaiyur 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 Rough Stone quarry over a lease extent of 2.00.0 Ha & Cluster extent of 6.30.00 Ha., located at Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State.

For: M/s. Global Mining Solutions

M. MANIKANDAN

EIA CO-ORDINATOR
GLOBAL MINING SOLUTIONS
SALEM

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 Identification No. TO25B0108TN5338525N (F.No. 12756), dated 24/11/2025 of Draft EIA/EMP report for the Rough Stone Quarry over a lease extent of 2.00.0 Ha., & Cluster extent of 6.30.00 Ha., located at Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu Stat for the proposed production for five years is 2,32,622 m3 of Rough Stone formation 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/26-29/RA 0478, valid till 03.01.2029.

For: M/s. Global Mining Solutions

M. MANIKANDAN

EIA CO-ORDINATOR
GLOBAL MINING SOLUTIONS
SALEM




National Accreditation Board for Education and Training

Certificate of Accreditation

Global Mining Solutions, Salem

Plot No. 8, S.F.No. 13/2, A2, V5 City, RC Chettyyatty, Kottamettupatty, Onalur, Salem, Tamil Nadu – 636 455

Global Mining Solutions, Salem is Re-Accredited (RAA) as **Category-A** organisation under the QCI-NABET Scheme for Accreditation of EIA Consultant Organisations (Version 3), for the preparation of EIA/EMP reports in the sectors listed below, as per the specified categories

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including open cast / underground mining	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (a)	B
3.	Metallurgical industries (ferrous only)	8	1 (a)	A
4.	Metallurgical industries (non-ferrous only)	8		B
5.	Cement plants	9	1 (b)	A
6.	Synthetic organic chemicals industry (dyes & dye intermediates, bulk drugs and intermediates excluding drug formulations, synthetic rubbers, basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
7.	Distilleries	22	5 (g)	A
8.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Bio-tech Parks, Leather Complexes	21	7 (a)	B
9.	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (b)	B
10.	Common Effluent Treatment Plants (ETPs)	36	7 (c)	B
11.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (d)	B
12.	Building and construction projects	38	8 (a)	B
13.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved experts and sectors are mentioned in RAAC minutes dated February 05, 2026, 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/ENR/ACC/26/RA026 dated February 26, 2026. The accreditation needs to be renewed before the expiry date by Global Mining Solutions, Salem following due process of assessment.

Valid up to
January 03, 2029



Certificate No.
NABET/EIA/26-29/RA 0478

Issue Date
February 16, 2026

Varinder Kumar
Prof (Dr) Varinder S Kumar
(CEO – NABET)

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



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S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (d)	B
3.	Metallurgical industries (ferrous only)	8	3 (a)	A
4.	Metallurgical industries (non-ferrous only)	8		B
5.	Cement plants	9	3 (b)	A
6.	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
7.	Distilleries	22	5 (g)	A
8.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
9.	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	32	7 (d)	B
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11.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
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13.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved experts and sectors are mentioned in RAAC minutes dated February 05, 2026, posted on QCI-NABET website.

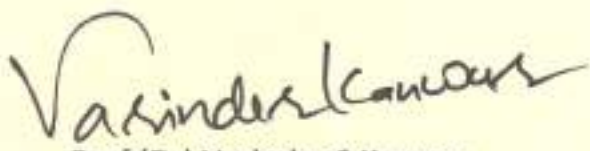
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Valid up to
January 03, 2029

Issue Date
February 16, 2026



Certificate No.
NABET/EIA/26-29/RA 0478


Prof (Dr) Varinder S Kanwar
(CEO – NABET)



DECLARATION BY EXPERTS

Declaration by Experts contributing to the Rough Stone Quarry over a lease extent of 2.00.0 Ha. & Cluster extent of 6.30.00 Ha in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai 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

M. MANIKANDAN

EIA CO-ORDINATOR
GLOBAL MINING SOLUTIONS
SALEM

Period of involvement: October to December 2025 .

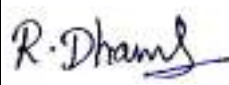
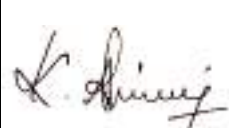
Contact information:

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. <u>Period: October to December 2025.</u>	
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. <u>Period: October to December 2025</u>	
3	SHW	Ramados N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: October to December 2025</u>	
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. <u>Period: October to December 2025</u>	
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. <u>Period: October to December 2025</u>	
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. <u>Period: October to December 2025</u>	

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. <u>Period: October to December 2025</u>	T Srilatha
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: October to December 2025</u>	R.Dhami
9	LU	Dhanalakshmi Ramanathan	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: October to December 2025</u>	R.Dhami
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: October to December 2025</u>	Sprashant
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. <u>Period: October to December 2025</u>	Shisupal Sing
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: October to December 2025</u>	Valliappan

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COMPLIANCE TO

TERMS OF REFERENCE

S.No	ToR Points	Reply	Pg. No
1. SEAC Conditions - Site Specific			
1.1	Specific Condition 1. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of required statutory personnel, appropriate environmental management, system of maintaining the haul roads and village/panchayat roads, authorized blasting operation, Monitoring system of the environmental & other statutory compliances & its reporting status, etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities	Agreed There are 6 quarries within a 500-metre radius. The proponent will take the initiative to form a cluster management committee once environmental clearance is obtained for this quarry as well as the other proposed quarry. Affidavit in this regard will be submitted during final EIA/EMP Report.	-
2	The PP should submit an affidavit to follow the scientific formation of benches for 5m *5m properly during mining as per the approved mining plan.	Agreed, An affidavit for stipulated bench formation will be incorporated in the Final Report.	
3	The PP shall ensure the installation of CCTV at the proposed quarry site and ensure its inclusion during the EIA presentation.	Agreed, The PP will install CCTV at the proposed mine lease area and submit proof in the Final EIA/EMP report.	
2. SEAC Standard Condition			
2.1	Terms of Reference		

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 (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 (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6m height and ultimate depth of not exceeding 50m.	The applied area was previously operated by another lessee, namely Thiru Thiru.R. Arasappan, prior to the year 2016. CCR is not applicable. The existing pit dimensions mentioned in the approved mining plan is given below. <table border="1"> <thead> <tr> <th>Pit No</th><th>Length in (m)</th><th>Width in (m)</th><th>Depth in (m)</th></tr> </thead> <tbody> <tr> <td>Pit I</td><td>74</td><td>40</td><td>2m AGL</td></tr> <tr> <td>Pit II</td><td>72</td><td>35</td><td>7.5m (6m AGL and 1.5m BGL)</td></tr> <tr> <td>Pit III</td><td>110</td><td>61</td><td>10m (6m AGL and 4m BGL)</td></tr> </tbody> </table>	Pit No	Length in (m)	Width in (m)	Depth in (m)	Pit I	74	40	2m AGL	Pit II	72	35	7.5m (6m AGL and 1.5m BGL)	Pit III	110	61	10m (6m AGL and 4m BGL)	-
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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 nearest habitation is Devanandal Habitation – 440m (SW) and VAO NOC regarding the location of habitations within 500m radius 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.	A Site survey has been conducted to identify and list structures located within a 300 m radius from the proposed Quarry and structures located within 300 m radius are given in section 3.3 and figure 3.2 of Chapter 3. As per the field study, only two crusher plant were observed within the 300m radius of the project site. Hence there are no habitation within 300m radius of the project site	92																

4	The PP shall submit a detailed hydrogeological report indicating the impact of proposed quarrying operations on the water bodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	The study is under progress. It will be incorporated in the final EIA & EMP.	-
5	The Project Proponent shall carry out Bio-diversity study through reputed institution and the same shall be included in the EIA report.	The bio diversity study has been carried out by our FAE is given in section 3.3.6 of Chapter 3.	112
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.	R.F in buffer zone: •Kavunttumalai R.F – 713m (W) •Adiannamalai R.F- 3.09Km (SE) •Sorakolathur R.F – 6.09Km (N) •Radhapuram R.F- 7.46Km(SW) There is no National Parks, Sanctuary, Corridors and Wildlife pathways in the core and buffer zone.	-
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 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.	The existing pit depth as per approved mining plan is 10 m (6m AGL & 4m BGL). Slope stability study will be conducted before commencement of the project.	-

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.														
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	Agreed. It will be incorporated in the final EIA & EMP.	-												
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	Controlled blasting techniques using delay detonators and optimum charge per delay will be implemented in this quarry. The details on blasting parameters are given in section 2.7 of Chapter 2.	72												
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	The applied area was previously operated by another lessee, namely Thiru Thiru.R. Arasappan, prior to the year 2016. CCR is not applicable. The existing pit dimensions mentioned in the approved mining plan is given below.	-												
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.		-												
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	- 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	<table> <tr> <td></td><td></td><td></td><td>1.5m BGL)</td></tr> <tr> <td>Pit III</td><td>110</td><td>61</td><td>10m (6m AGL and 4m BGL)</td></tr> </table>				1.5m BGL)	Pit III	110	61	10m (6m AGL and 4m BGL)	
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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).	Complied. - Project coordinates superimposed in satellite imagery are given as Figure - 2.2, Chapter - 2. - The 10km Radius Index plan showing buffer zone is given as Figure - 3.1, Chapter - 3. - The geology and geomorphology map are provided in Figure - 3.19 & 3.20, Chapter - 3. - The Soil map is provided as Figure - 3.28, Chapter - 3.	59 89 131,132 133								
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing etc.,	It 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 major trees within ML area. Fencing and plantations are under process. Greenbelt / Plantation will be 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 0.29.0 Ha will be under greenbelt and plantation. Refer section 4.2.4, chapter-4. There are no permanent structures within a 50-meter radius of the proposed project site, and a safety distance of 7.5m,10 meters along the boundary has been provided. There are no water bodies within 500 m radius of the project site.	145								

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 are estimated to be 619436 m³ Rough stone and 1677 m³ Top soil The mineable reserves of 232622 m³ Rough stone and 1085 m³ Top soil observed. The need and justification of the project is given in chapter 2. The anticipated impact and its mitigation measures are detailed in chapter 4.	70-71
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 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.	Complied. Please refer Figure 10.1	186
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 study is under progress. It will be incorporated in the final EIA & EMP.	-

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 were collected (October to December 2025) for the environmental components including land, soil, water, air, noise, biology, socio-economy, and the results have been discussed in Chapter 3. Traffic density survey is detailed in section 2.10 of Chapter 2.	90 – 134 83
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.	Detailed cumulative impact study has been carried and the same is incorporated in the Chapter 4 & 7. Accordingly, a detailed Environment Management Plan is prepared considering air, water, noise and soil environment and the details are given in Chapter 10.	147 – 158 Annexure No-4 182
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. - Rain water harvesting Plan is given in section 4.2.4 of chapter 4. - The water balance is given in Figure 4.1 of chapter 4.	144
24	Land use of the study area delineating forest area, agricultural land, grazing land. Wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use pattern of the study area is detailed in Section 3.3.7, Chapter - 3. The anticipated impact on land and its mitigative measure are detailed in Section 4.2, Chapter - 4.	119, 137

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 in Section 4.2, Chapter - 4. • Rain water will be diverted into bottom of the project area by constructing drains to store and use for dust suppression and greenbelt development. Rain water harvesting Plan is given in section 4.2.4 of chapter 4.	137 144
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. The cumulative traffic study is given in section 2.10 of Chapter 2.	83
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	The details of flora in the core zone and the buffer zone are provided in section 3.3.6 Chapter - 3 There is no standing trees in proposed mine lease area.	112
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	Complied. Mine Closure Plan has been incorporated in the approved Mining Plan and the same is incorporated in the section 2.7.3 Chapter - 2.	80 78

		Land use at mine closure stage are given in Table – 2.14 and Figure - 2.13 of Chapter 2.	79
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.	• Greenbelt/Plantation will be carried out in and around the lease area to enhance the vegetative growth and aesthetic in the area. • In the post mining stage, an area of 0.29.0 Ha of safety zone will be developed with green belt.	137,145
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 FAE of ecology and biodiversity has advised the project proponent that saplings of one year old raised in the ecofriendly bags should be purchased and planted with the spacing of 3 m between each plant around the proposed project area as per the advice of local forest authorities/botanist.	-
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 section 7.3.4, Chapter 7.	178
35	A risk assessment and Management plan shall be prepared and included in the EIA/EMP report for the complete	Risk assessment and its management is given in section 7.2, Chapter 7.	173

	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.	Occupational Health Impacts of the project and preventive measures are detailed under section 4.5.4 of Chapter-4.	161
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 500m from the lease area. Details of CER and CSR are discussed under Chapter- 8.	188
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 section 3.3.8, Chapter 3.	124
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.	179

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/TNPCCB.	The applied area was previously operated by another lessee, namely Thiru Thiru.R. Arasappan, prior to the year 2016. CCR is not applicable. The existing pit dimensions mentioned in the approved mining plan is given below. <table> <tr> <th>Pit No</th><th>Length in (m)</th><th>Width in (m)</th><th>Depth in (m)</th></tr> <tr> <td>Pit I</td><td>74</td><td>40</td><td>2m AGL</td></tr> <tr> <td>Pit II</td><td>72</td><td>35</td><td>7.5m (6m AGL and 1.5m BGL)</td></tr> <tr> <td>Pit III</td><td>110</td><td>61</td><td>10m (6m AGL and 4m BGL)</td></tr> </table>	Pit No	Length in (m)	Width in (m)	Depth in (m)	Pit I	74	40	2m AGL	Pit II	72	35	7.5m (6m AGL and 1.5m BGL)	Pit III	110	61	10m (6m AGL and 4m BGL)	-
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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.	A detailed Environmental Management Plan considering entire life has been prepared and are detailed in section 10.1.6 chapter- 10. The sworn affidavit stating to abide the EMP for the entire life of mine will be submitted in Final EIA EMP report.	182-190																
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	-																
3	Seiaa Specific Conditions																		
3.1	After detailed discussions, the Authority accepts the recommendation of SEAC-I and decided to	Agreed																	

	grant Terms of Reference (ToR) along with Public Hearing for the quantity of 2,32,622 m3 of Rough Stone up to the depth of 36m (6m AGL + 30m 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-I & normal conditions & the SEIAA Standard conditions.		
4	SEIAA Specific Conditions		
	4.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	There are 1 existing and 1 proposed and 4 expired quarry located within 500-metre radius. The proponent will take the initiative to form a cluster management committee once environmental clearance is obtained for this 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.,	Agreed. Will be complied.	-
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.	Agreed. The list of members of the committee formed will be submitted to AD/mines after obtaining Environmental Clearance.	-
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.	Agreed. Details of the Operation plan for cluster mining operations will be submitted once we get environmental clearance for all quarries proposed in the cluster area.	-
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	Risk management plan for the individual quarry is given in this report. As far as cluster working condition is concerned, once the committee is formed, risk management as a cluster including inundation of clusters and the evacuation plan will be elaborated	-

	considering the inundation of the cluster and evacuation plan.	and the same will be submitted to the EIA.	
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.	Environmental policy for the cluster will be framed by the cluster management committee and the policy will be in accordance with EPA Act, 1986 and its amendments, guidelines by MoEF&CC/SEIAA and other regulatory bodies. This policy will be displayed in the quarry.	-
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.	Agreed. It will be complied as mentioned in the Point No.4	-
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.	There are no forest area and traditional practices within the project area. However, there are some agricultural lands around the project site. It may be affected due to the quarry operation as such dust particles sedimentation in the agricultural land. It will be controlled at the source level by proper dust separation as such wet drilling, controlled blasting and water sprinkling on the project roads and project surrounding roads. As per Air Quality Modelling the impact of the air quality limited to 0.5km radius. So, there is no impact for the Agriculture, Forestry, soil located within 10km radius.	-
10	Impact on soil flora & vegetation around the project site.		
11	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	There is no standing trees in proposed mine lease area.	-

12	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Complied. The details are given in section 3.3.6, Chapter- 3 and section 4.2, Chapter 4.	112, 137
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.	182
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	Complied. The details are given in, Chapter- 2.	79

Forests

15	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.	The following Reserve Forest are •Kavunttumalai R.F – 713m (W) •Adiannamalai R.F- 3.09Km (SE) •Sorakolathur R.F – 6.09Km (N) •Radhapuram R.F- 7.46Km(SW) There are no reserve Forest area within 1 km radius. The anticipated impact on ecological environment is given in section 4.2.4 of Chapter 4.	88 145
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The anticipated impact on ecological environment is given in section 4.2.4 of Chapter 4.	145
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.	-
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There are no protected areas, National Parks, environmentally sensitive areas Corridors and Wildlife pathways within 10 km radius of the project site.	-

Water Environment

19	Hydro-geological study considering the contour map of the water table detailing the number of ground	The hydrogeological study from a reputed institute is in progress and	-

25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact of mining on soil environment has been discussed in section 4.2.2 under Chapter- 4.	142
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	The anticipated impact and its mitigation measures for Water Environment are detailed in section 4.5 of Chapter- 4.	160
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 proposed quarry operation is Opencast Mechanized operation with drilling, blasting, excavation, loading and transportation. So, the effect of Hydrothermal/Geothermal is not envisaged. This is a simple mining operation, so bio-geochemical processes are not envisaged. Due to mining operation, there may be minimum impact to the nearby water bodies due to dust sedimentation. It will be controlled by wet drilling, water sprinkling and plantation. There are no water bodies within 500 m radius of the project site.	-
Energy			
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	The measures taken to control noise, air, water, and dust have been given under Chapter 4.	160
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.	- 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. - To further reduce carbon emissions, a good greenbelt has been planned. Refer Section 4.3.4, Chapter- 4.	149
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.	Complied. Mine Closure Plan has been prepared incorporated in the approved Mining Plan/precise area communication order and the same is incorporated in the Chapter-2	80
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.	182
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.	- As per SEAC norms, PP have to plant 1000 Saplings per Ha - The safety zone, covering an area of 0.29.0 hectares, will be maintained as a green belt and planted with local species - Plantation within Safety Zone (i.e. 0.29.0 Ha) – 290 nos - For this capital cost of INR 0.29 Lakhs and recurring cost of INR 0.06 Lakhs for 5 years has been earmarked. - The breakup of the total EMP cost is detailed in Table 10.2 of Chapter 10.	187-190
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.	173
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	Complied. The details are described in Chapter- 7.	178

	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.	There are no historical places, schools, cemeteries, HT and LT lines , bird sanctuaries, and wildlife sanctuaries within 300 meters of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer, Adaiyur village, The letter copy enclosed as Annexure – 5.	Annexure No-5
38	As per the MoEF& CC office memorandum F.NO.22-65/2017-1A.11I dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted. It will be complied in the Final EIA/EMP 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.	Complied. The PP has framed detail solid waste management system for the project area and the same will be executed by proper awareness and sign boards. The sign boards will be in two language i.e., Vernacular language (Tamil) and common language (English). The plastic waste generation is very negligible and it will be collected from the source level in specific dustbin and disposed through the municipal bins.	-

Standard Terms of Reference for (Mining of minerals)

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	The applied area was previously operated by another lessee, namely (Thiru.R. Arasappan), prior to the year 2016. CCR is not applicable. The existing pit dimensions mentioned in the	

	into force, w.r.t. the highest production achieved prior to 1994.	approved mining plan is given below. <table border="1"> <thead> <tr> <th>Pit No</th><th>Length in (m)</th><th>Width in (m)</th><th>Depth in (m)</th></tr> </thead> <tbody> <tr> <td>Pit I</td><td>74</td><td>40</td><td>2m AGL</td></tr> <tr> <td>Pit II</td><td>72</td><td>35</td><td>7.5m (6m AGL and 1.5m BGL)</td></tr> <tr> <td>Pit III</td><td>110</td><td>61</td><td>10m (6m AGL and 4m BGL)</td></tr> </tbody> </table>	Pit No	Length in (m)	Width in (m)	Depth in (m)	Pit I	74	40	2m AGL	Pit II	72	35	7.5m (6m AGL and 1.5m BGL)	Pit III	110	61	10m (6m AGL and 4m BGL)	
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Pit III	110	61	10m (6m AGL and 4m BGL)																
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 Government land the applicant has obtained tender from the Government																	
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 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).	Complied. - Project coordinates superimposed in satellite imagery are given as Figure - 2.2, Chapter - 2. - The 10km Radius Index plan showing buffer zone is given as Figure - 3.1, Chapter - 3. - The geology and geomorphology map are provided in Figure - 3.19 & 3.20, Chapter - 3.	59 89 131,132 133																

		The Soil map is provided as Figure - 3.28, Chapter - 3.	
1.5	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.	The following map in 1:50,000 Scale: Geology map of the project area covering 10km radius – Figure No. 3.19. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 3.20. Drainage map – 3.22	131,132
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.	The applied area is inspected by the VAO, Revenue Inspector of Mines, Deputy Director and confirmed the land is suitable for Rough stone quarrying operation with the land use policy of the state. Precise area communication letter and Mine plan approval letter is enclosed in Annexure 2 & 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.	Environmental policy for the cluster will be framed by the cluster management committee and the policy will be in accordance with EPA Act, 1986 and its amendments, guidelines by MoEF&CC/SEIAA and other regulatory bodies. This policy will be displayed in the quarry.	186
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.	Risks are identified and the management plan is given in Chapter 7.	173

1.9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	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 3.3.7 of Chapter-3. The land use pattern at present and at the end of the quarrying period has been provided in Table 2.14, Chapter-2. The Conceptual plan of mine lease area is shown in Figure No- 2.13.	119, 137 79
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 proposal for use of land outside the mine lease area for OB dumps, etc. There are no R&R issues involved in the project.	
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. 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.	There is no Forest Land involved in the proposed project area. The proposed project area is a Government land, applicant has obtained tender from government. Approved Mining Plan is enclosed in Annexure – 2.	
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 since no forest land involved within mine lease area.	

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 since no forest land involved in mine lease area.	
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	There is no reserve Forest area within 1 km radius.	92
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.	The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.	88
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.	88
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 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	Flora and fauna composition in the core and buffer zone of the project has been studied through primary field surveys. The details are furnished in Chapter 3.	112

	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 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 falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable	
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. No habitation within 300 meter of the radius.	

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	Baseline environmental monitoring was conducted in the core zone and buffer zone during post monsoon October to December 2025 . Site specific meteorological data was also collected during the study period. The monitoring location details and the monitoring results are discussed in Chapter 3 .	90 – 134
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.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view and Detailed in Section 4.3.5	147-158
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 3.0 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 Figure No – 4.1.	144

1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis.	
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.	Rain water will be diverted into working area by constructing drains to store and use for dust suppression and greenbelt development. Details are presented in section 4.2.4 The total water requirement for the project will be 3.0 KLD comprising Drinking and domestic 1.0 KLD, Dust suppression 1.0 KLD, Greenbelt 1.0 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.1.	144
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 of the project on the surface and ground water environment and necessary control measures are discussed in Chapter 4	137
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of	The quarrying activity will not intersect ground water table as quarrying is proposed upto a depth of 36m (6m above ground level 30m below ground level) and water table is found at a depth of 70 m BGL.	

	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.	There is no seasonal stream or nallah flowing through the mining area. Also there are no water bodies within 500 m radius.							
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.	<table><tr><td>Site Elevation above MSL</td><td>221 m from MSL</td></tr><tr><td>Ultimate Depth</td><td>36m (6m above ground level 30m below ground level)</td></tr><tr><td>Ground water</td><td>70 m BGL.</td></tr></table>	Site Elevation above MSL	221 m from MSL	Ultimate Depth	36m (6m above ground level 30m below ground level)	Ground water	70 m BGL.	
Site Elevation above MSL	221 m from MSL								
Ultimate Depth	36m (6m above ground level 30m below ground level)								
Ground water	70 m 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.	There are no trees within ML area. Fencing and plantations are under process. Greenbelt / Plantation will be 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 0.29.0 Ha will be under greenbelt and plantation.							
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	The traffic density study was carried out and the same is given in section 2.10 of Chapter 2.	83						

	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.	Temporary Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in Chapter 2.	
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. Mine closure plan is detailed in Section 2.7.3 of Chapter 2.	80
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 anticipated occupational health impacts and proposed preventive measures are discussed in Chapter 10	182-190
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 major impact on public health will be there since the villages are located more than 1km from the lease area.	
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.	Details of CER and CSR are discussed under Chapter No. 8	179

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 for the project is discussed in detail in Chapter 9 .	180
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 public hearing comments will be submitted during final EIA report	
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.	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 is Rs. 257.84 Lakhs (including EMP & CER cost) CER Cost is Rs.3.00 lakhs Total EMP Cost for 5 years is 25.34 Lakhs i.e., Rs.14.02 Lakhs of Capital + Recurring cost Rs. 11.32 lakhs for five years.	
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster Management Plan is included in Chapter 7	178
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.	The Project benefits are clearly spelt out in Chapter 8 .	188
1.44	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	Yes, Complied.	

	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. J11013/41/2006-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.		

CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF THE REPORT

Environmental Impact Assessment (EIA) as a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

Tmt.R.Kalpana (Lessee), has obtained Precise Area communication letter from the Deputy Director, Department of Geology and Mining, Tiruvannamalai vide Rc.No.16/ Kanimam/ 2025 dated 11.03.2025 and the same is granted for period of 5 years. Mining plan has been prepared and got approved from the Deputy Director, Department of Geology and Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025 to quarry out Mineable reserves of 6,39,710.50Ts of Rough stone and 2,170Ts of Topsoil upto a depth of 36m (6m above ground level 30m below ground level) only. The project is situated on Government land at S.F. No 49/2 Part-2), covering an area of 2.00.0 ha, in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu.

The applied area was previously operated by another lessee (Thiru.R. Arasappan) during the lease period 13.06.2012 – 12.06.2017. CCR is not applicable. The existing pit dimensions mentioned in the approved mining plan is given below.

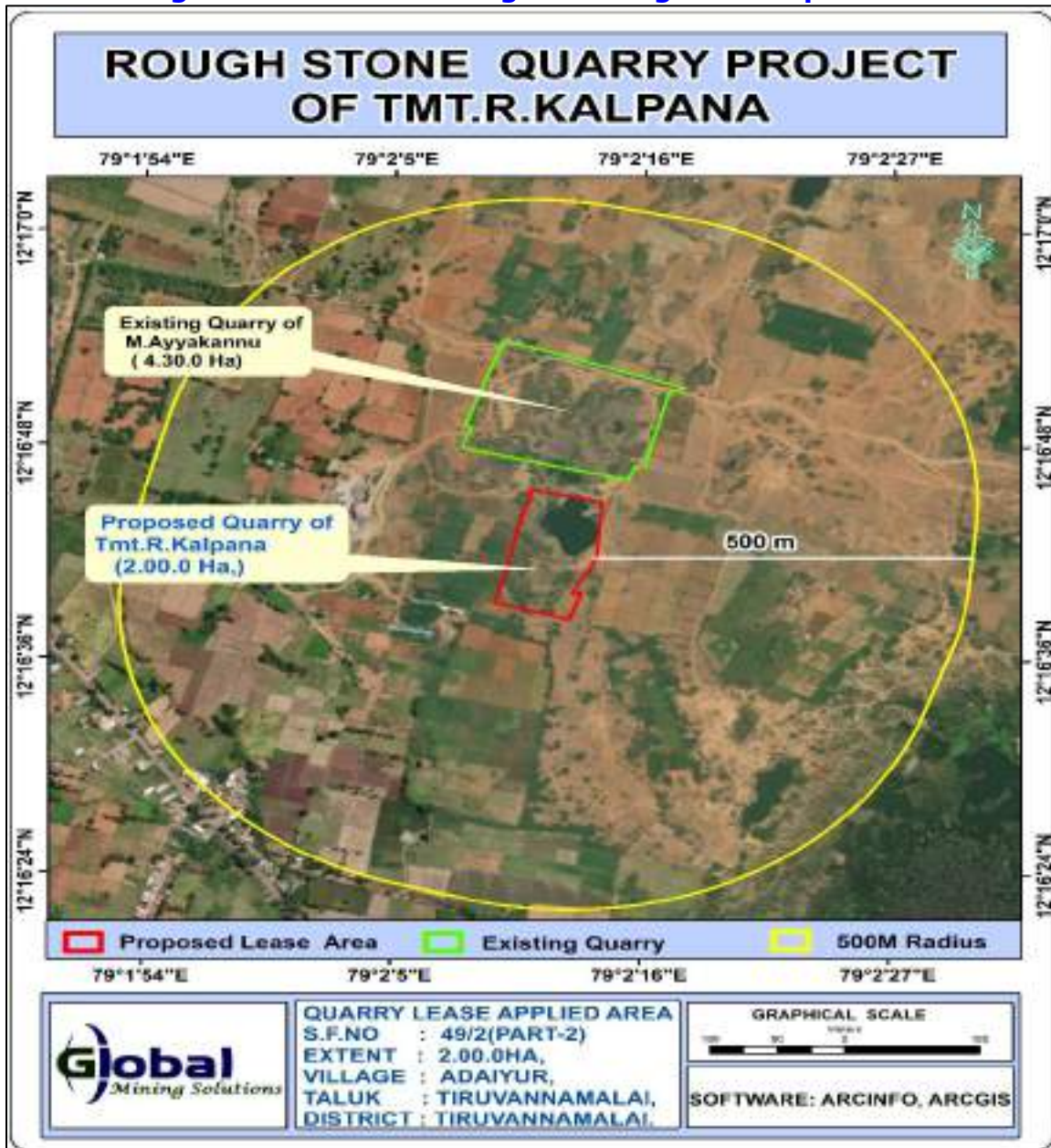
Pit No	length (Max) in(m)	Width (Max) in (m)	Depth (Max) in (m)
I	74	40	2m (above ground level)
II	72	35	7.5m (6m above ground level and 1.5m below ground level)
III	110	61	10m (6m above ground level and 4m below ground level)

Hence, this proposed quarry falls under the cluster situation due to the following proposed and abandoned quarries located within 500m radius. The details are given below.

Table 1.1 Cluster Mines Details				
S.No	Name of the Quarry Owner	S.F. Nos & Village	Lease Period	Area
a. Existing Quarry				
1.	M.Ayyankannu	Adaiyur, Tiruvannamalai 49/2(Part-1)	16.08.2023 To 15.08.2028	4.30.0 Ha
b. Abandoned Quarry				
1.	N.Harijayashree	Adaiyur, Tiruvannamalai 49/2 (Part-1)	09.11.2006 to 08.11.2011	4.30.0 Ha
2.	M.Vijai Ganesh	Adaiyur, Tiruvannamalai 49/2(Part-1)	25.04.2012 to 24.04.2017	4.30.0 Ha
3.	M.Vijai Ganesh	Adaiyur, Tiruvannamalai 49/2(Part-1)	09.11.2006 to 08.11.2011	4.30.0 Ha
4.	R.Arasappan	Adaiyur, Tiruvannamalai 49/2(Part-2)	13.06.2012 to 12.06.2017	4.30.0Ha
c. Proposed Quarry				
1.	Tmt.R.Kalpana	Adaiyur, Tiruvannamalai 49/2(Part-2)	Presently proposed	2.00.0 Ha
Total Area Under Cluster Area		6.30.0 Ha		

As per EIA notification, 2006 and its subsequent amendments the Tmt.R.Kalpana Rough Stone Quarry, cluster is falls under Schedule 1(a) Mining of Minerals. It is further classified under Category B1 due to the overall extent of cluster area is 6.30.00 Ha which is >5 Ha. Satellite image of Quarries in Cluster is shown in Fig 1.1.

Figure.1.1 Satellite Image showing cluster quarries



The ToR for preparation of EIA/EMP was approved vide ToR Identification No. TO25B0108TN5338525N (F.No.12756) dated 24/11/2025. This report has been prepared in line with the approved TOR for production of maximum excavation of 2,32,622 m³ of Rough Stone up to the depth of 36m (6m AGL + 30m BGL) as for a period of five years.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT

The project is for mining of Rough Stone (under cluster) from the S.F.No. 49/2 (Part-2 over an extent of 2.00.0 Ha., in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State. As per EIA notification, 2006 and its subsequent amendments the project comes under Schedule 1 (a) under Category B1 (Lease area >5 to 250 Ha). The proposed project details are given below.

(a) Proposed project details

Sl.No	Description	Status/Remarks
1.	Sector	Non-coal Mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone
4.	Type of Lease	Existing lease area
5.	Extent of the lease	2.00.0 Ha
6.	Existing depth	The applied area was previously operated by another lessee (Thiru.R. Arasappan) during the lease period 13.06.2012 – 12.06.2017. CCR is not applicable
7.	Proposed depth of mining (for 5 Years)	36m (6m above ground level 30m below ground level)
8.	Ultimate Pit Depth	36m (6m above ground level 30m below ground level)
9.	Method of Mining	Opencast mechanized
10.	Life of the Mine	5 Years
11.	Proposed Environmental Clearance	5 Years
12.	Proposed production quantity for 5 years 36m (6m above ground level 30m below ground level)	6,39,710.50Ts/2,32,622m ³ of Rough Stone & 2,170Ts/1085m ³ of Topsoil for the depth of 36m (6m AGL & 30m BGL)

(b) Profile of the project proponent

The proposed lessee Tmt.R.Kalpana is an Individual firm with sound experience in the identification of quarry, operation and marketing in the field of Rough Stone quarry. The proposed land is government poramboke land, please refer **Annexure no –6.**

(c) Project proponent details

Name of the proponent : Tmt.R.Kalpana
 Status of the Proponent : Individual
 Address : W/o. Manikandan,
 No.798, Bajanai Kovil Street,
 Devikapuram, Chepet Taluk,
 Tiruvannamalai District.
 Pincode-606 902.

1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION:

The proposed quarrying operation Opencast Mechanized method with 5m bench height, 5m bench width and overall bench slope is less than 45°. The quarry operation involves shallow jackhammer drilling, slurry blasting, excavation, loading and transportation.

1.3.1 SIZE AND LOCATION OF THE PROJECT

(a) Size of the project

Table 1.2 Proposed project details		
Sl. No.	Feature	Description
1	Type of land	Government poramboke land
2	Extent of lease area	2.00.0 Ha
3	Type of lease	The Applied area was previously operated by another lessee (Thiru.R. Arasappan) During the Lease Period 13.06.2012 – 12.06.2017. CCR is not applicable.
4	Geological Resource	Rough Stone – 17,03,449Ts / 619436 m ³ Top soil - 3,354 Ts / 1677 m ³
5	Mineable reserves (Quantity in Ts)	6,39,710.50 Ts / 2,32,622 m ³ of Rough Stone & 2,170 Ts /1085 m ³ of Topsoil for the depth of 36m (6m AGL & 30m BGL)
6	Proposed depth of mining	36m (6m above ground level 30m below ground level)
7	Ultimate Pit Depth	36m (6m above ground level 30m below ground level)

(b) Location of the project

The proposed project site is located in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State and its Latitude: 12°16'38.23"N to 12°16'45.53"N and Longitude: 79°02'09.62"E to 79°02'14.38"E. with Survey of India Topo Sheet No. 57 P/03.

1.3.2 IMPORTANCE OF THE PROJECT TO THE COUNTRY AND REGION

There is an increasing demand for rough stone in India and other countries. Since the construction industry is rapidly growing now, there is an increasing demand for rough stone. Thus, this project will contribute not only to the demand of Rough Stone, but also provide employment opportunities to the nearby villages.

1.4 SCOPE OF THE STUDY -DETAILS OF REGULATORY SCOPING CARRIED OUT (AS PER TERMS OF REFERENCE):

Any mining project may cause environmental impacts near the project site during its operation. The type and intensity of impacts on various components of the environment may vary depending on the nature of the project, as well as its geographical location. The net impacts of the project can be quantified through Environment Impact Assessment (EIA) studies on Physical, Biological and Socio-economic environment. The EIA studies give a basis for preparing an Environmental Management Plan (EMP) to conserve the environment of the area.

For the purpose of preparing EIA/EMP the SEIAA, Tamil Nadu has issued a Terms of Reference ToR Identification No. TO25B0108TN5338525N (F.No.12756), dated 24/11/2025 in accordance with the provisions of EIA Notification 2006 and its subsequent amendments. This EIA study includes both Core and Buffer zone i.e., the lease area and 10km radius of the project area respectively. This EIA report prepared based on the data generated from the Post monsoon season 2025 (October to December 2025) and all individual components of environment are described in detail. An in-depth analysis of available information has been made for working out an effective Environmental Management Plan.

1.4.1 PRESENT STUDY

The Project Proponent has assigned M/s. Global Mining Solutions, Salem for conducting Environment Impact Assessment / Environmental Management Plan (EIA/EMP) for this project. The Environmental Impact Assessment and Environmental Management Plan of this cluster quarry addressing all the environmental related impacts and mitigation measures. The EMP report is based on the data generated from October to December 2025 by M/s. Shrient Analytical & Research Labs Private Limited, Chennai and the data generated by the FAE of the M/s. Global Mining Solutions, Salem. The study evaluates the prevailing baseline environmental conditions. The objectives of the present study are given below.

- ✚ To prepare the present baseline scenario through primary field monitoring and secondary data for different environmental descriptors such as air, water, noise, traffic, biodiversity, socio-economic etc.
- ✚ To identify the activities of mining that have bearing on the environment
- ✚ To Assess the impact of proposed project activity
- ✚ To suggest preventive mitigation measures
- ✚ To prepare an Environmental Management Plan (EMP) including environmental monitoring.
- ✚ To Prepare Disaster Management Plan.

1.4.2 STATUS OF LITIGATIONS

This is Rough stone Quarry project. There is no litigation/court case pending against this project.

a. Precise Area Communication:

The Project Proponent has obtained Precise Area Communication from the Deputy Director, Department of Geology and Mining, Tiruvannamalai, vide Rc.No.16/Kanimam/ 2025 dated 11.03.2025. The letter copy enclosed as **Annexure – 2.**

b. Mining Plan Approval Letter:

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 Deputy Director, Dept. of Geology & Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025. The approval letter along with approved plan is enclosed as **Annexure – 3.**

c. 500m radius quarry features:

The project proponent has obtained an official letter from Deputy Director, Dept. of Geology & Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025. The letter copy enclosed as **Annexure – 4.**

d. VAO certification regarding 500 meter features of the project area.

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, Adaiyur dated 12.09.2025. **The letter copy enclosed as Annexure – 5.**

e. Land document of the proposed lease area:

It is Government land the applicant has obtained tender from the Government.

CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT

The type of the project is Opencast Mechanized Mining to excavate Rough stone within the proposed Mine Lease area with drilling, blasting, loading and transportation. This project is located at S.F. No. 49/2 (Part-2) over an extent of 2.00.0 Ha., in Adaiyur , Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the project comes under Schedule 1 (a) under Category B1 (Lease area >5 to 250 Ha), considering cluster situation and the total cluster area is 6.30.00 Ha. The details of mines located in the cluster area is certified by Deputy Director, Dept. of Geology & Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025.

Table 2.1 500m Radius Cluster Mines Details				
S.No	Name of the Quarry Owner	S.F. Nos & Village	Lease Period	Area
a. Existing Quarry				
1.	M.Ayyankannu	Adaiyur, Tiruvannamalai 49/2(Part-1)	16.08.2023 To 15.08.2028	4.30.0 Ha
b. Abandoned Quarry				
1.	N.Harijayashree	Adaiyur, Tiruvannamalai 49/2 (Part-1)	09.11.2006 to 08.11.2011	4.30.0 Ha
2.	M.Vijai Ganesh	Adaiyur, Tiruvannamalai 49/2(Part-1)	25.04.2012 to 24.04.2017	4.30.0 Ha
3.	M.Vijai Ganesh	Adaiyur, Tiruvannamalai 49/2(Part-1)	09.11.2006 to 08.11.2011	4.30.0 Ha
4.	R.Arasappan	Adaiyur, Tiruvannamalai 49/2(Part-2)	13.06.2012 to 12.06.2017	4.30.0Ha
c. Proposed Quarry				
1.	Tmt.R.Kalpana	Adaiyur, Tiruvannamalai 49/2(Part-2)	Presently proposed	2.00.0 Ha
Total Area Under Cluster Area		6.30.0 Ha		

The total lease within the 500m radius (Existing + Abandoned + Proposed) (1 no + 4 nos + 1 no) works out to 6.30.00 Ha, including this lease area. As such, the cluster situation TOR is applicable for this project.

2.2 NEED FOR THE PROJECT

- Proposed mining project will fulfill the local market requirement for real estate and infrastructure industry. This project will also provide employment to local people helping them earn livelihood.
- Employment generated consequent to the mining activity in the project will benefit local and rural population and will have multiplier effects on local economy.
- The Project will give tremendous boosts to the local and regional economy benefiting the population.
- The social benefits arising out of this proposal can be expressed in terms of increase in the standards of living of local population, educational opportunities, training and development of skills etc.

2.3 LOCATION (MAPS SHOWING GENERAL LOCATION, SPECIFIC_LOCATION, PROJECT BOUNDARY & PROJECT SITE LAYOUT):

This project site is located in Adaiyur, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State. The Nearest Railway line is Tiruvannamalai Railway Station - 6.30 Km (SE) side of the area. The National Highway (NH-38) Tiruvannamalai- Vellore Road- 3.6km (E) side of the area. The State Highway ((SH-133A) Tiruvannamalai – Avalurpettai Road- 5.7Km (SE) side of the area. The general location is given in Figure 2.1. The specific location is given in Figure 2.2.

FIGURE 2.1 LOCATION MAP

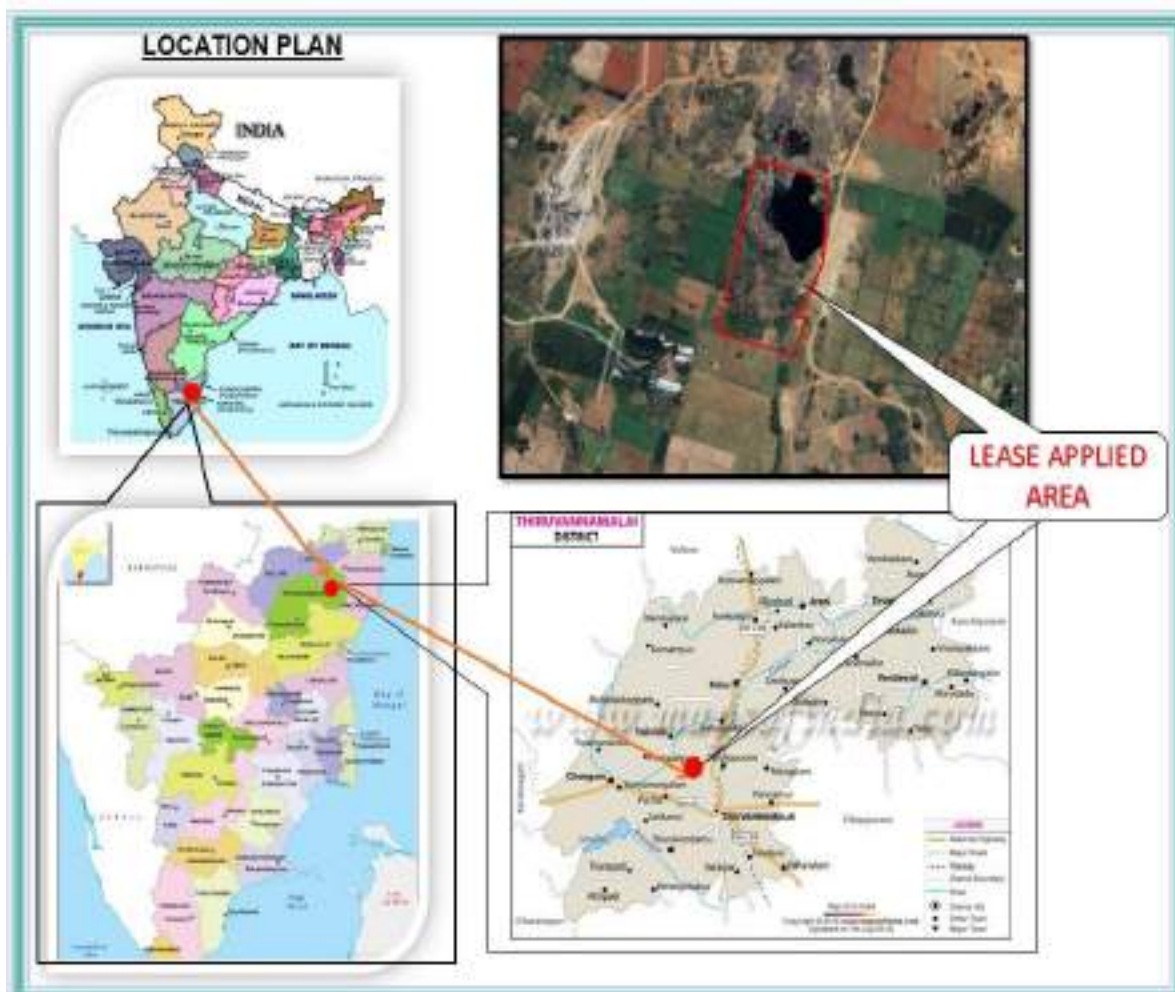


Table 2.2 Co-Ordinates of the Project Site

Corners	Co-ordinates		Distance between the corners
	Latitude	Longitude	
1	12° 16' 44.86" N	79° 02' 14.38" E	1-2 = 100.0m
2	12° 16' 41.62" N	79° 02' 14.08" E	2-3 = 66.2m
3	12° 16' 39.72" N	79° 02' 13.03" E	3-4 = 12.4m
4	12° 16' 39.74" N	79° 02' 13.43" E	4-5 = 48.8m
5	12° 16' 38.23" N	79° 02' 12.93" E	5-6 = 104.2m
6	12° 16' 39.16" N	79° 02' 09.62" E	6-7 = 201.4m
7	12° 16' 45.53" N	79° 02' 11.22" E	7-1 = 97.8m

FIGURE 2.2 GOOGLE IMAGE SHOWING PROJECT SITE

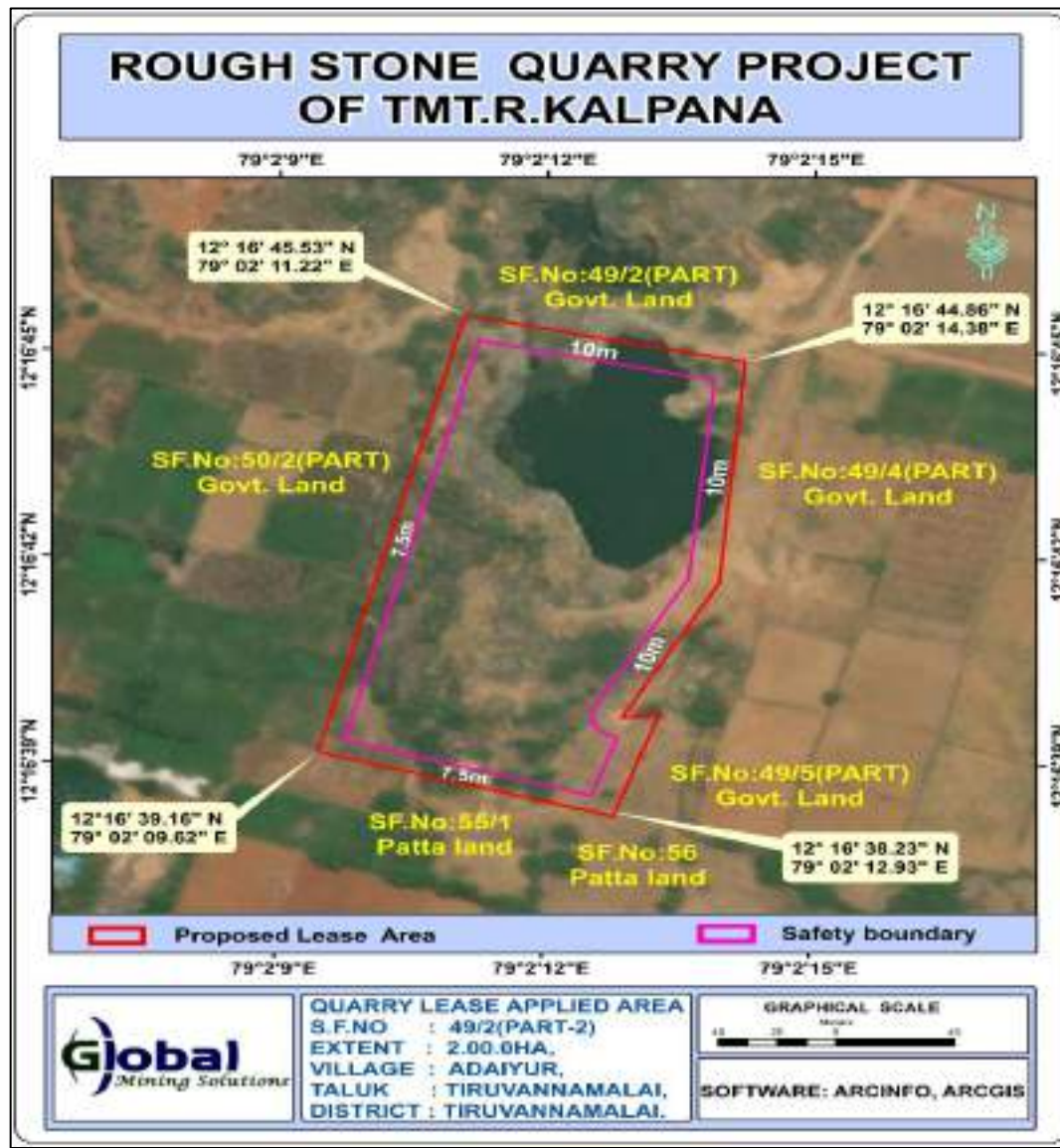
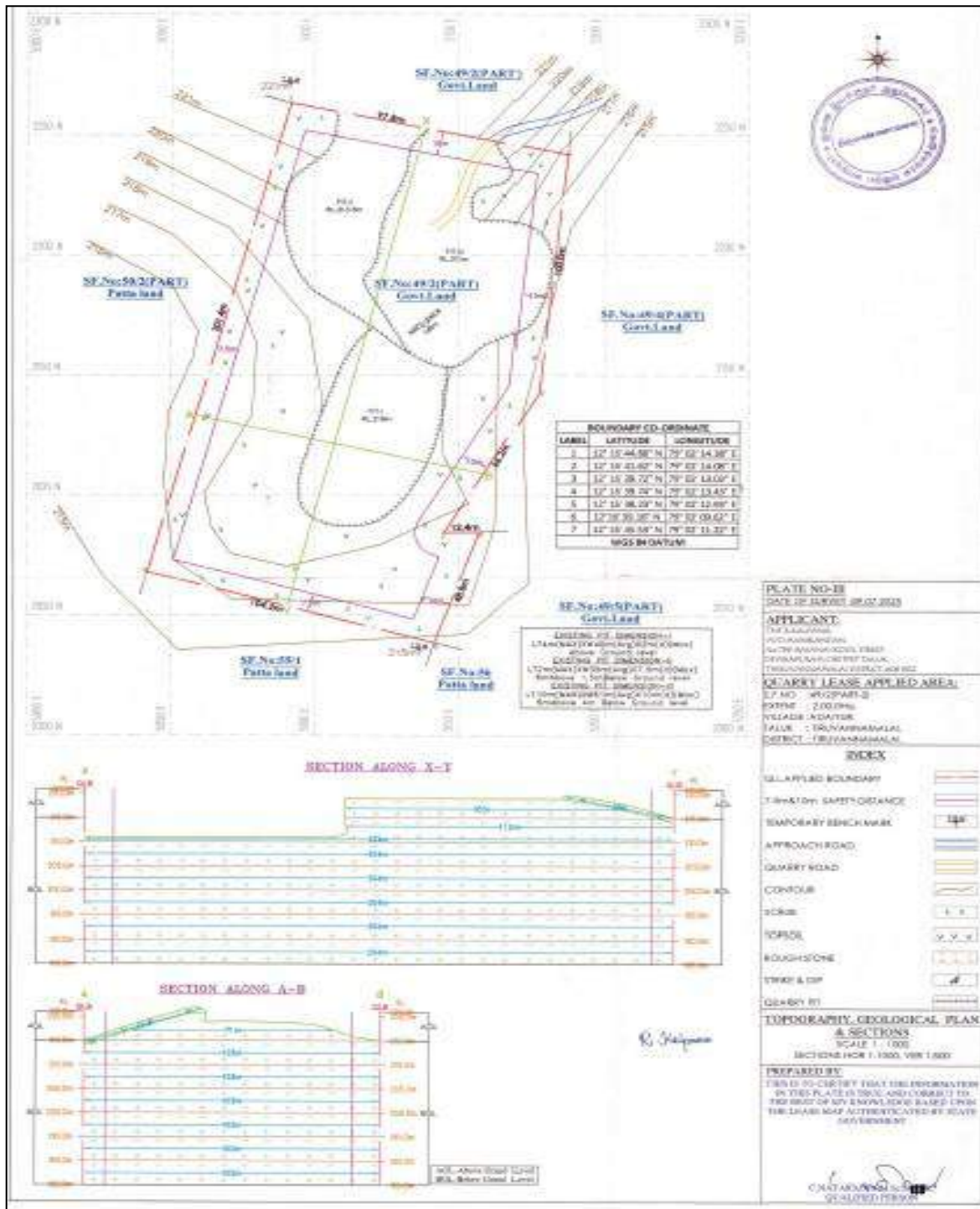


FIGURE - 2.4 GEOLOGY MAP OF PROJECT AREA



2.3.1 LAND USE OF THE PROJECT AREA

The proposed Mine Lease area is government poramboke land and the Land use pattern of the project site is given below Table 2.3.

Table 2.3 Mine Lease Area and its Ownership

Location	S.F. No	Area in Ha	Remarks
Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District	49/2 (Part-2)	2.00.00	It is Government land the applicant has obtained tender from the Government.

Table 2.4 Site Connectivity

S.No	Description	Details	Distance & Direction
1	Village	Adaiyur Village	571m(SE)
2	Highway	(NH-38) Tiruvannamalai- Vellore (SH-133A) Tiruvannamalai – Avalurpettai	3.6km (E) 5.7Km (SE)
3	Railway Station	Tiruvannamalai to Polur line Tiruvannamalai Station	4.3Km (NE) 6.26Km(SE)
4	Airport	Chennai International Airport	143.4 km(NE)

Figure 2.5 Topo Map showing existing site features

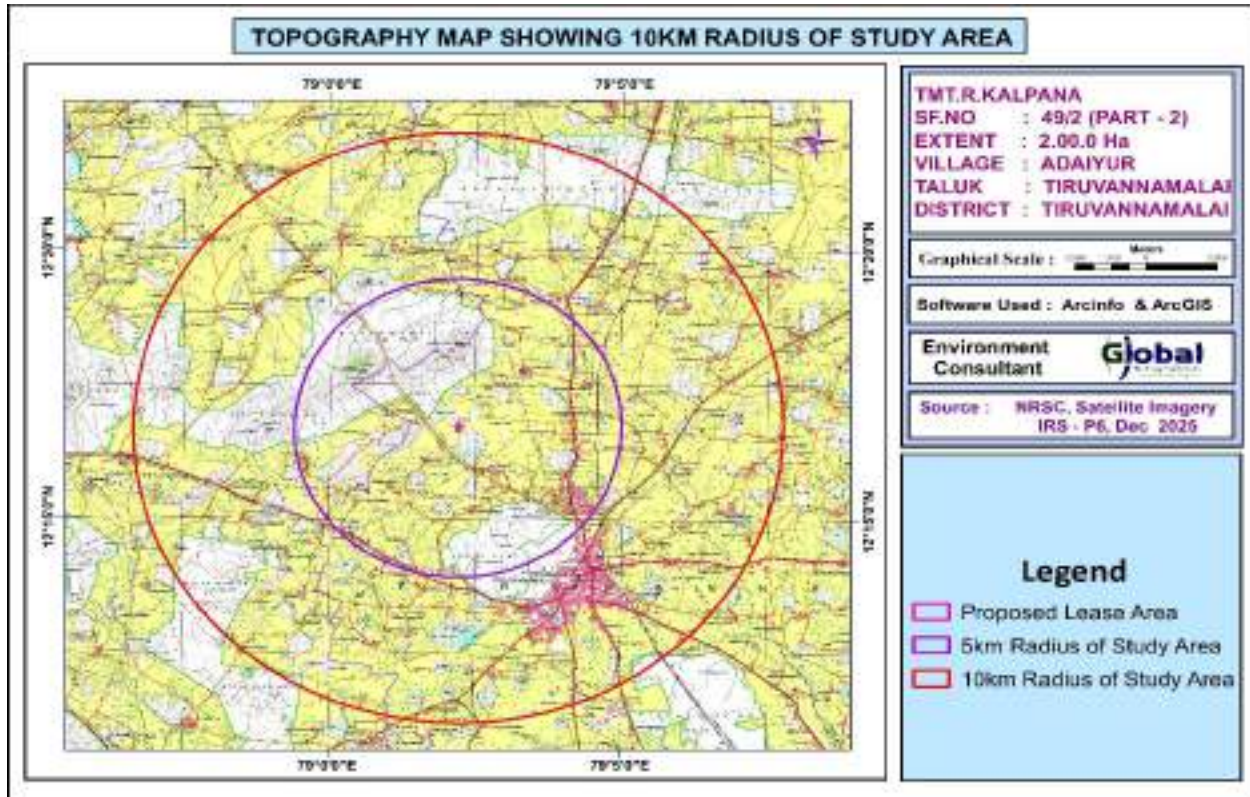


FIGURE 2.6 PROJECT SITE PHOTOGRAPHS



2.4 SIZE OR MAGNITUDE OF OPERATION(INCL.ASSOCIATED ACTIVITIES REQUIRED BY OR FOR THE PROJECT):

The proposed production of rough stone is 6,39,710.50 Ts (2,32,622 m³) of Rough stone and 2,170 Ts Top soil by Opencast Mechanized mining method. The details of geological and mineable reserves in the lease area have been provided below in the subsequent sub section.

2.4.1 STATUS OF STATUTORY CLEARANCES, PERMISSIONS, NO OBJECTION CERTIFICATES, CONSENTS:

The mining project will be implemented after getting all the Statutory Clearances, Permissions, No Objection Certificates, consents etc. which are required/necessary for this project under various Acts, Rules and Regulations is as given in table below:

Table - 2.5 Status of Statutory Clearances, Permissions, NOC, Consents

S.No	Particular	Status
1	Mining Plan Approval Status	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 Deputy Director, Dept. of Geology & Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025.
2	Environment Clearance Status	ToR Letter Received vide file no TO25B0108TN5338525N, dated 24/11/2025
3	Grant of Consent to Establish (CTE)	After 30 days from grant of EC (Duration as per TNPCB)
4	Grant of Consent to Operate (CTO)	After 30 days from grant of EC (Duration as per TNPCB)

2.5 PROPOSED SCHEDULE FOR APPROVAL & IMPLEMENTATION

Proposed schedule for approval of the proposed mining project is given as under:

Table - 2.6 Proposed Schedule for Approval

S.N	Activity Description	April 2026	May 2026	June 2026	May 2026
1	Submission of Final EIA/EMP Report to SEIAA-TN				
2	Consideration for EC by SEAC				
3	Recommendation of SEAC to SEIAA				
4	Grant of EC by SEIAA				

Proposed schedule has been prepared as per EIA Notification, 2006

Note: Application was submitted to Parivesh Portal on 13.09.2025, ToR was granted on 24.11.2025. Baseline data Collection during Post Monsoon (October to December 2025). After obtaining EC from SEIAA-TN, CTE and CTO under section 21 of the Air (Prevention and Control Act) 1981 and section 25/26 Water (Prevention and Control of Pollution Act) 1974 will be obtained from Tamil Nadu State Pollution Control Board (TNPCCB).

2.5.1 IMPLEMENTATION

Implementation of the proposed mining project will be done in accordance with the existing Acts and Rules applicable on mining operations as well as in accordance with any Act/Rule/Guidelines issued by Central or State Government from time to time and as per Mining Plan and Progressive Mine Closure Plan approved by Deputy Director, Dept. of Geology & Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025.

2.6 TECHNOLOGY & PROCESS DESCRIPTION

2.6.1 BASIC REQUIREMENTS FOR THE PROJECT

The project requirements such as water, power, man-power, fuel, machinery with source of supply is described in the sections below.

2.6.2 WATER REQUIREMENTS

In the proposed mines water will be mainly used for domestic purpose, dust suppression & plantation. Total water requirement for the project is 3.0 KLD which will be sourced from outside agencies. Negligible sewage of 0.5 KLD will be generated, for

which a septic tank with soak pit will be set up. The water balance diagram is given below.

FIG 2.7 WATER BALANCE DIAGRAM

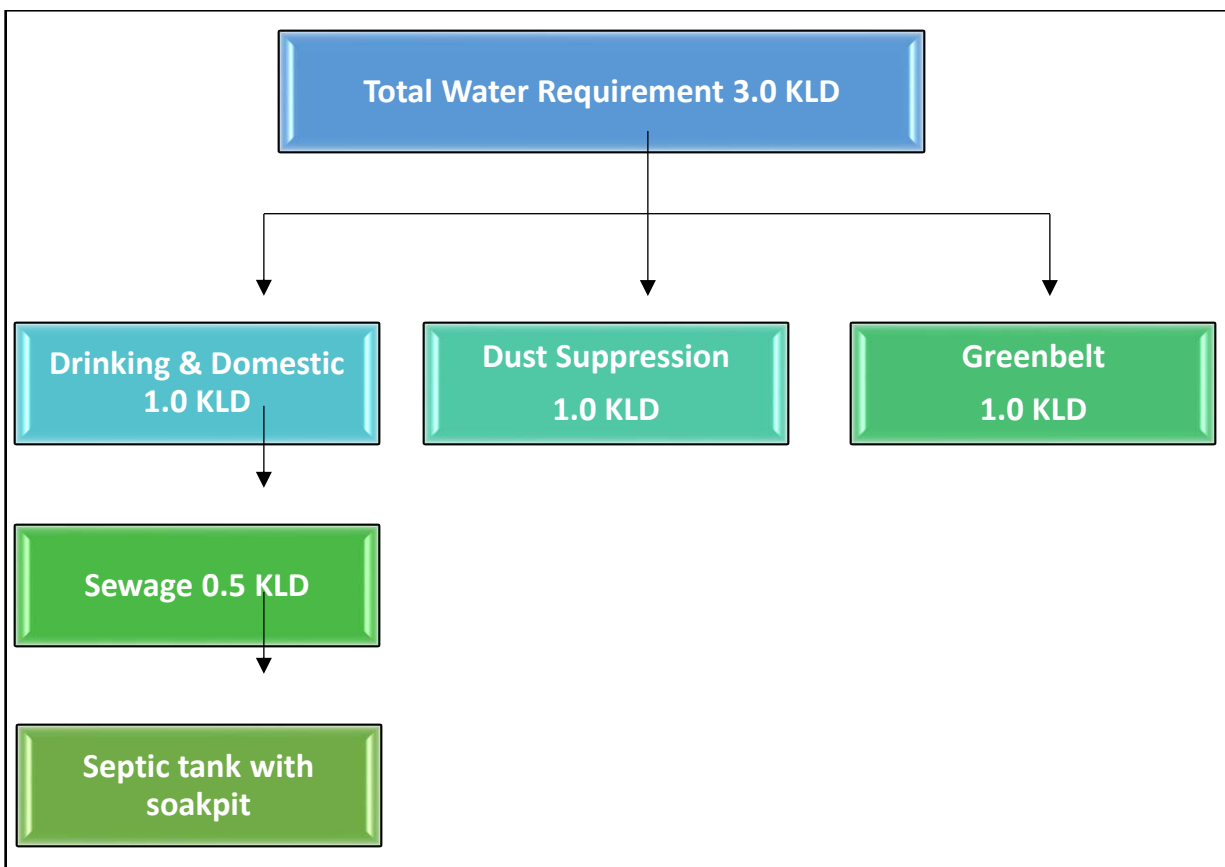


Table - 2.7 Water Requirement

S. No	Particular	Water Requirement (KLD)
1	Dust suppression	1.0
2	Drinking/Domestic	1.0
3	Greenbelt/Plantation	1.0
Total		3.0

2.6.3 POWER REQUIREMENT

Total Fuel requirement is 1,86,098 Litres for entire life of the project. Power will be used only in the office building

2.6.4 MAN POWER REQUIREMENT

Total Manpower requirement will be 27 persons which out of which 15 persons (Mines manager, Foreman, Mining Mate, etc.,) and other are drivers and workman's categories. Beside this, 12 workmen will be drivers and workmen. Preference will be given to the locals as per their eligibility.

S.No	Description	Employment potential
1	Mines Manager	1 No.
2	Foreman / Mate	2 Nos.
3	Operator	8 Nos.
4	Mechanic	1 No.
5	Driver	3 Nos.
6	Labours	12 Nos
Total		27 Nos

2.6.5 EXTENT OF MECHANIZATION

Table 2.8 Machineries involved in the project				
S.No.	Particulars	capacity	Motive Power	Nos
1.	Jack hammer	32mm dia	Compressed air	3
2.	Compressor	1 psi	Diesel drive	1
3.	Excavator with Bucket and Rock Breaker	0.90 m ³	Diesel drive	1
4.	Tippers	5/10 Ts	Diesel drive	3

Source: Approved Mining Plan

Note: The mining equipment's of the above capacities are adequate for total material handling requirements for the proposed production of Rough stone in the ML area.

2.6.6 GEOLOGY AND TOPOGRAPHY

Topography

The mine lease area of 2.00.0 Ha is covered in the Survey of India Toposheet 57 P/03 and is bounded by Latitude: 12°16'38.23"N to 12°16'45.53"N and Longitude: 79°02'09.62"E to 79°02'14.38"E. No major river is found nearby the lease applied area. Water table is found at a depth of 70 m. Temperature of the area is reported to be 18° C to a maximum of 42° C during summer. Rainfall of this area is about 800 mm to 900 mm during the both NE & SW monsoons.

The topo map showing the lease area of the proposed quarry is given in Figure 2.1 and Satellite map showing proposed lease area is given in Figure 2.2.

The elevation of the proposed quarry is 221 m (maximum) from MSL. There is no forest land in the mine lease area. The project site is dry land which is not fit for any cropping.

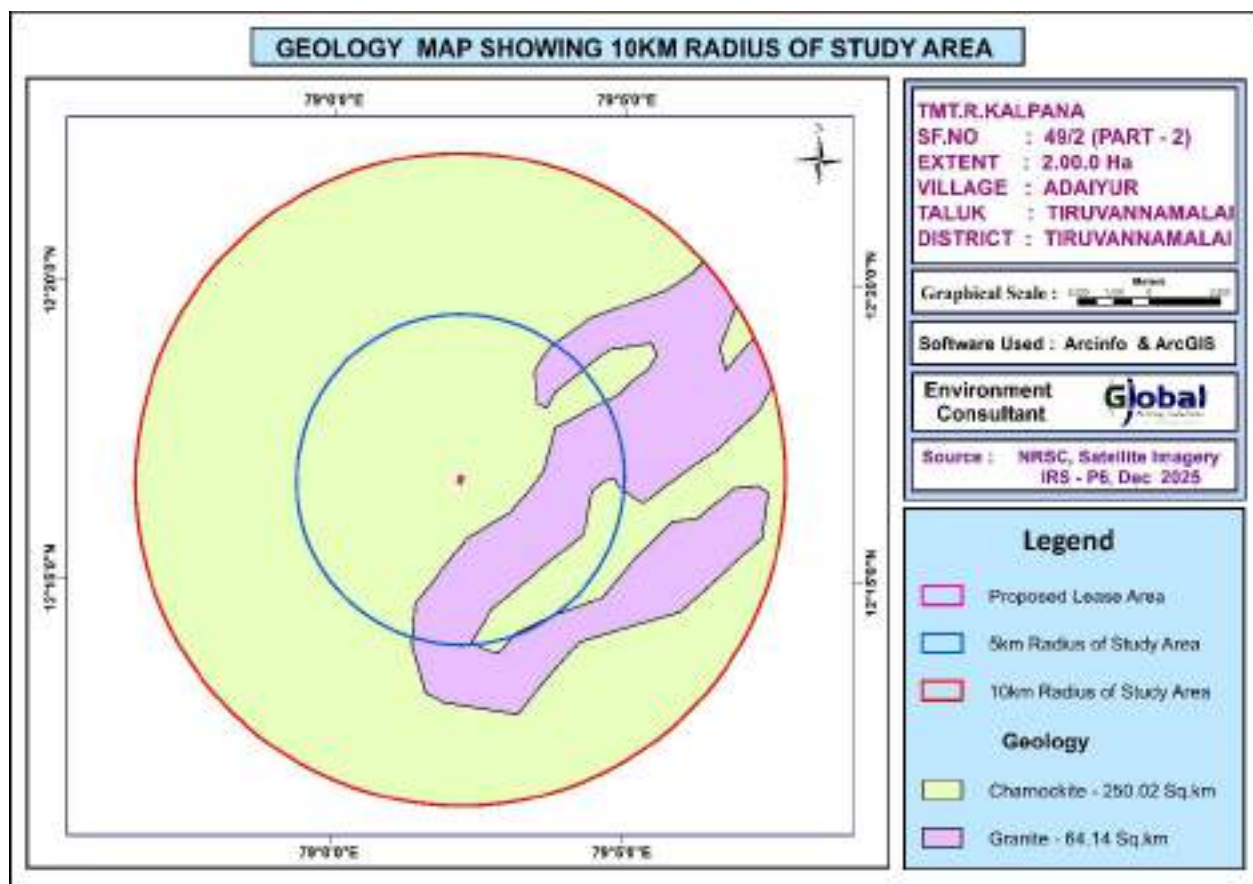
2.6.7 Regional Geology

Geologically Tiruvannamalai District is mostly underlain by the Archaean crystalline and metamorphic complex. The geology of the district is complicated due to recurring tectonic and magmatic activities occurred during. Pre-Cambrian period. Hornblende Biotite Gneisses are the oldest rocks of the district. It is very fissile and present widely in plains. The gneisses are highly weathered upto 30 m at some places.

The Charnockites are coarse grained, massive and foliated at places and their colour is bluish dark to grey. They are the second largest rock type present in the district. They are massive and less weathered than the gneisses. They exhibit 2 to 3 distinct set of joints and most of them are vertical with steep dips. Iron ore deposits associated with quartz feldspathic gneiss and garnetiferous quartz gneisses are present in some

areas. These rocks are highly folded and jointed and less weathered. Quartzite and crystalline lime stones are exposed in patches in north and central parts of the district. The thickness of these bands varies from a few meters to ten meters and the length extends to few kilometers. Numerous lenses of dunite with magnesite veins of various dimension are exposed within gneiss .There are number of basic dykes present in the study area. Granites are found in some parts of the district. They are massive and jointed poorly. Several faults and shears are occurring mostly with north east-southwest trend. They are expected to influence the course of groundwater movement, its storage and developmental potentials in the district. Regional Geology map for the 10 Km radius from the proposed project site is given as Figure 2.4

FIGURE 2.8 REGIONAL GEOLOGY MAP-10 Km RADIUS FROM PROJECT AREA



2.6.8 Local Geology

The area is underlain by the wide range of charnorokite group, Migmatite complex, Alkali complex, upper Gondwana and Quaternary alluvium. Charnokite group of rocks occupy major part of the area and comprise charnokites, metaphyroxenites, pyroxene granulites and magnetite quartzite. The migmatic rocks derived from granulites comprise variants of gneisses viz. garnet gneiss, biotite gneiss, hornblende biotite gneiss and pink migmatites.

Granite and granulite are also seen in large areas around west cheyyar. Edidote hornblende gneiss forming part of alkali complex is seen NW of cheyyar bordering Tiruvannamali District. The strike of the Charnockite formation is N45°E – S45°W with vertical dipping. The general geological succession of the area is given as under.

↑	Age		Rock Type
	Recent	-	Reddish soil
	Unconformity		
	Archaean	-	Dolerite dyke Charnockite Peninsular Gneissic complex and Calc Gneiss

Table 2.9 Geological Resources

Section	Topography	Bench	Length in (m)	Width in (m)	Depth in (m)	Topsoil m ³	Rough stone in m ³	Bulk Density	Topsoil in Ts	Geological Resources of Rough stone in Ts
XY-AB	Above ground level	I	39	43	1	1677	-	2.00	3354	-
		II	95	71	4	-	26980	2.75	-	74195.00
	Below ground level	III	112	103	4	-	46144	2.75	-	126896.00
			204	103	1	-	21012	2.75	-	57783.00
		IV	204	103	5	-	105060	2.75	-	288915.00
		V	204	103	5	-	105060	2.75	-	288915.00
		VI	204	103	5	-	105060	2.75	-	288915.00
		VII	204	103	5	-	105060	2.75	-	288915.00
		VIII	204	103	5	-	105060	2.75	-	288915.00
	Total					1677	619436	-	3354	1703449.00

The quarrying is restricted up to a depth of 36m (6m above ground level 30m below ground level) only. Availability of resources is given below.

Topsoil Formation : 3,354 Ts
The Geological Resources of Rough stone : 17,03,449 Ts

Already excavated

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

Pit No	length (Max) in(m)	Width (Max) in (m)	Depth (Max) in (m)
I	74	40	2m (above ground level)
II	72	35	7.5m (6m above ground level and 1.5m below ground level)
III	110	61	10m (6m above ground level and 4m below ground level)

Table 2.10 Mineable Resource

The available mineable reserve calculated by deducting 7.5m & 10m safety distance and bench loss.

Section	Topography	Bench	Length in (m)	Width in (m)	Depth in (m)	Topsoil in m ³	Rough stone in m ³	Bulk Density	Topsoil in Ts	Mineable Reserves of Rough stone in Ts
XY-AB	Above ground level	I	31	35	1	1085	-	2.00	2170	-
		II	95	71	4	-	26980	2.75	-	74195.00
	Below ground level	III	100	76	4	-	30400	2.75	-	83600.00
			167	76	1	-	12692	2.75	-	34903.00
		IV	157	66	5	-	51810	2.75	-	142477.50
		V	147	56	5	-	41160	2.75	-	113190.00
		VI	137	46	5	-	31510	2.75	-	86652.50
		VII	127	36	5	-	22860	2.75	-	62865.00
		VIII	117	26	5	-	15210	2.75	-	41827.50
	Total					1085	232622	-	2170	639710.50

2.7 PROJECT DESCRIPTION INCLUDING DRAWING SHOWING PROJECT LAY OUT COMPONENTS OF PROJECT ETC., SCHEMATIC REPRESENTATION OF THE FEASIBILITY DRAWING WHICH GIVE INFORMATION IMPORTANT FOR EIA PURPOSE.

2.7.1 PROCESS DESCRIPTION

PROPOSED METHOD OF MINING

Opencast mechanized method with 5.0 m height 5.0m width and overall, 60° slope of the bench. It is proposed to excavate 6,39,710.50 Ts (232622 m³) of Rough Stone and 2,170 Ts of Topsoil upto a depth of 36m (6m above ground level 30m below ground level) only. No wastage is envisaged as the entire material available is Rough Stone only.

TIMING

Mining will be done on single shift basis. Timing will be 8 hours from 8 AM to 1 Noon and 2 PM to 5 PM. Lunch time will be provided between 1 Noon and 2 PM. Timing may be variable from season to season depending upon the sunrise and sunset. Weekly one day will be declared as holiday.

BENCH GEOMETRY

Height (max) and Width (max) of the benches will be maintained as 5m each and number of proposed benches is 8, overall slope angle will be at around 70° with the horizontal.

DEVELOPMENT OF MINING FACES

The proposed mining method is Opencast Mechanized mining. Site preparation as such bush cleaning, approach road, office and sanitary facilities will be done after obtaining all the statutory clearances as such Environmental Clearance, Consent to Operate, Lease Deed, etc., Once site is ready will start the quarrying operation and it is anticipated in the month of May 2026.

DRILLING & BLASTING

Drilling will be done up to maximum depth of 36m (6m above ground level and 30m below ground level) Drilling diameter will be 32 mm. Jackhammer will be used for drilling with water spray. Powder factor of explosives for breaking such hard rock shall be in the order of 6-7 Tonnes per Kg of explosives. Small dia 25 mm slurry explosive is proposed to be used for shattering and heaving effect for removal of Rough Stone. The proposed blasting pattern is given as Figure 2.9.

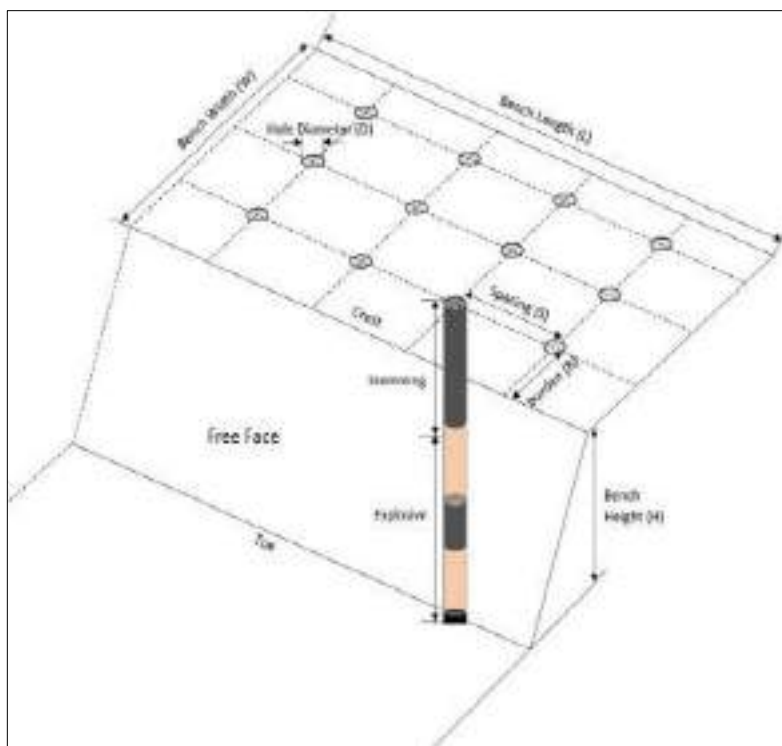


FIGURE 2.9 BLASTING PATTERN

LOADING& TRANSPORTATION OF ROUGH STONE

Hydraulic excavator will be used for lifting and loading of the rough stone. This excavator in combination with Tippers (10MT) capacity of 3 nos will be used.

PROCESS DESCRIPTON

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.

- 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.

The process diagram is provided in Figure 2.10. The mineable plan and cross section and production plan and cross section is given in Figure No. 2.11 - Figure No. 2.12.

FIGURE 2.10 FLOW CHART OF THE QUARRY OPERATION

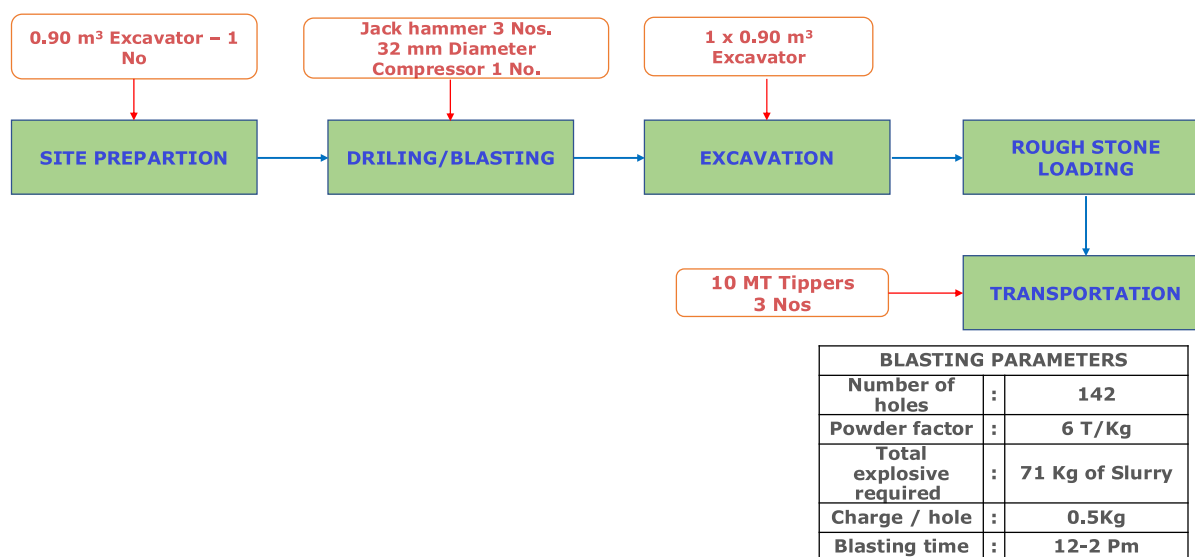


TABLE - 2.11 MINING DETAILS

Sl. No	Description	Details	Remarks
1.	Method of Mining	Opencast Mechanized Mining with 5.0 m height 5.0 m width and overall 70° slope of the bench. Hydraulic excavator will be used for the excavation and 5/10T tippers will be used for the Hauling.	Excavator - 1 No. Tippers - 3 Nos.
2.	Mineral Use	The excavated Rough Stone will be used for construction industries for Government & Public sector projects besides catering for domestic housing and infrastructure projects in and around the district.	-

3.	Proposed Depth of mining for the first five years	36m (6m above ground level 30m below ground level)	The water table in the area is around 70m BGL
4.	Proposed Production quantity	6,39,710.50Ts/2,32,622m ³ of Rough Stone & 2,170Ts/1085m ³ of Topsoil for the depth of 36m (6m AGL & 30m BGL)	5 years
5.	Safety Zone	Out of 2.00.0 Ha, 0.29.0 Ha will be maintained as a Safety Zone during mining operations.	Around 290 Nos saplings of local species like Neem, Pungai, etc., will be planted and maintained.
6.	Water requirement	3 KLD	Procured by the outside water.
7.	Energy requirement	1,86,459 liters of HSD (Entire Project Life)	All the equipment will be diesel-operated. No electricity is needed for mining operations.
8.	Manpower	Total manpower	This project will give employment opportunities to 27 people.
9.	Shift	General Shift	8.00 AM – 5.00 PM
10.	Project Cost	257.84 Lakhs	Including Fixed Asset + Operational & EMP cost
11.	EMP Cost	25.34 Lakhs	5 years
12.	CER Cost	Rs. 3.0 Lakhs.	The amount will be utilized for the development of nearby government schools.

2.7.2 YEAR WISE PRODUCTION & EXCAVATION DETAILS

Year wise Production of Rough stone from the area will be upto maximum capacity. The recovery factor is up to 100% hence no waste expected to be generated. All

excavated quantity is saleable. The summary of proposed development and production during the mine plan period is given in Table 2.12.

Table 2.12 Summary of production for 5 Years

Year	Section	Topography	Bench	Length in (m)	Width in (m)	Depth in (m)	Tops oil in m³	Rough stone in m³	Bulk Density	Tops oil in Ts	Mineable Reserves of Rough stone in Ts
I	XY-AB	Above ground level	I	31	35	1	1085	-	2.00	2170	-
			II	95	71	4	-	26980	2.75	-	74195.00
		Below ground level	III	50	76	4	-	15200	2.75	-	41800.00
				50	76	1	-	3800	2.75	-	10450.00
Total							1085	45980	-	2170	126445.00
II	XY-AB	Below ground level	III	50	76	4	-	15200	2.75	-	41800.00
				117	76	1	-	8892	2.75	-	24453.00
			IV	67	66	5	-	22110	2.75	-	60802.50
				Total							-
III	XY-AB	Below ground level	IV	90	66	5	-	29700	2.75	-	81675.00
			V	60	56	5	-	16800	2.75	-	46200.00
Total							-	46500	-	-	127875.00
IV	XY-AB	Below ground level	V	87	56	5	-	24360	2.75	-	66990.00
			VI	97	46	5	-	22310	2.75	-	61352.50
Total							-	46670	-	-	128342.50
V	XY-AB	Below ground level	VI	40	46	5	-	9200	2.75	-	25300.00
			VII	127	36	5	-	22860	2.75	-	62865.00
			VIII	117	26	5	-	15210	2.75	-	41827.50
			Total							-	47270
Grand Total							1085	232622	-	2170	639710.50

Figure : 2.11 Mineable plan and Cross section

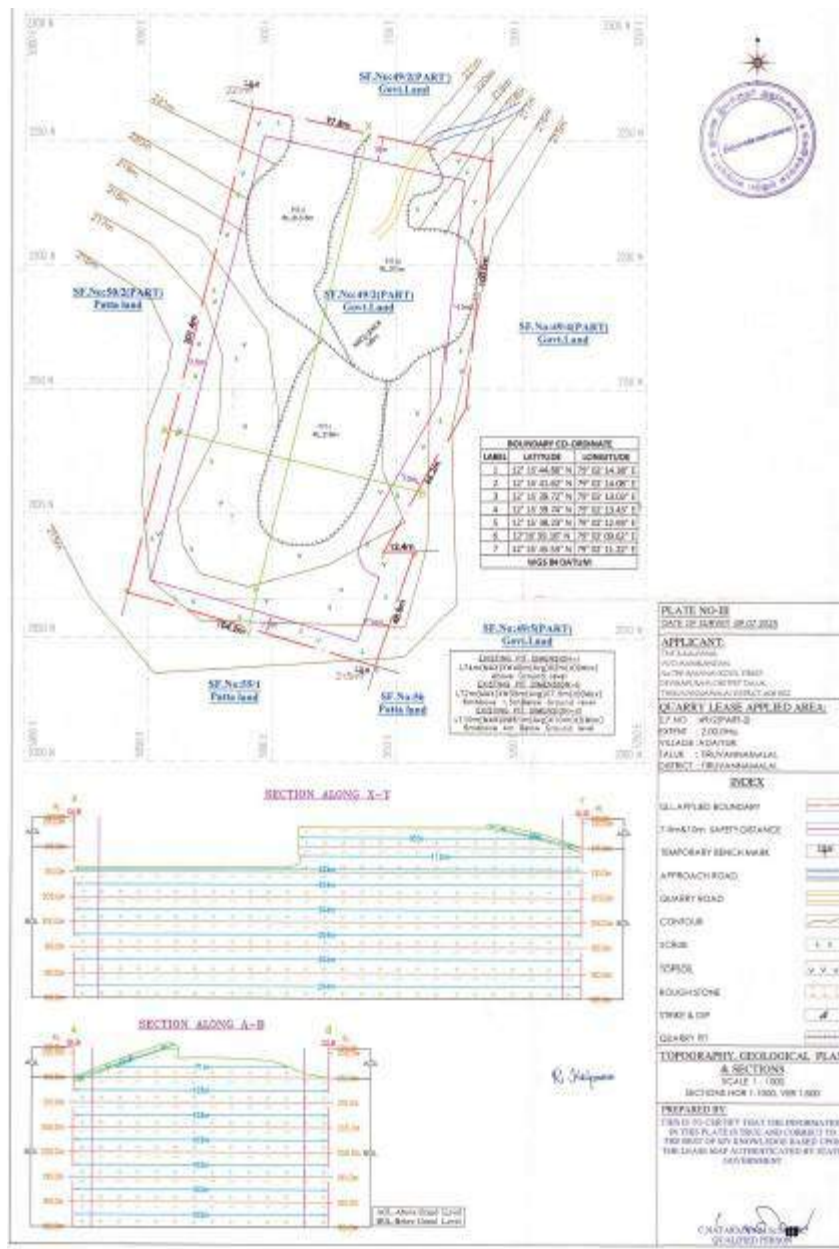
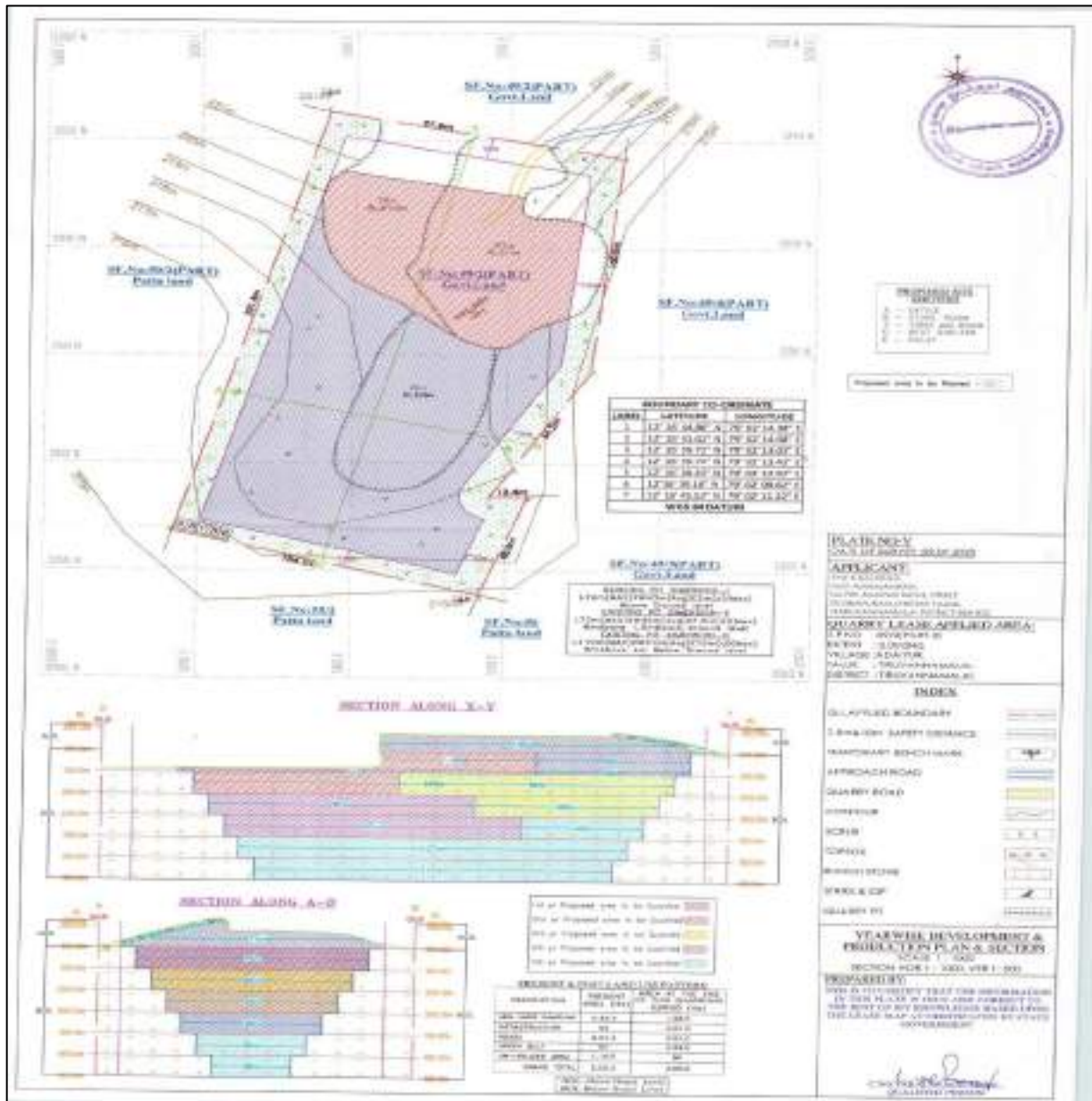


Figure 2.12 Production plan and Cross section



2.7.3 CONCEPTUAL PERIOD

During conceptual stage the mined-out area will be converted into water reservoir and safety zone as well as upper benches will be used for plantation at the conceptual period. It will also serve the purpose as socio economic and corporate social responsibility of the lessee by way of supplying water for irrigation purpose or at will of the local people. This will help in ground water recharging as well. The conceptual

plan and section of mine lease area is given in Figure 2.13. Ultimate extent and size of the quarry at the conceptual stage is given below as Table 2.13 and Land Use pattern is given as Table 2.14 The conceptual plan is given as Figure 2.13.

TABLE 2.13 Ultimate Pit Dimension			
Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)
Ultimate Pit dimension at the end of Mining Plan Period as per approved Mining Plan			
I	196	86	36m (6m above ground level 30m below ground level)

Table 2.14 - Land use pattern of the Project site

Description	Present Area in Ha.	Area at the end of life of Quarry in Ha.
Quarrying pit	0.85.0	1.69.0
Infrastructure	Nil	0.01.00
Roads	0.01.00	0.01.00
Greenbelt	Nil	0.29.0
Unutilized	1.14.0	Nil
Total	2.00.00	2.00.00

- At the end of life of mine, the excavated mine pit / void of 1.69.0 Ha will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt (0.29.0 Ha.) will be developed along the safety barrier and top benches and 0.01 Ha are approach road and Infrastructure.

the mining operations to meet the environmental standards and environmental operating conditions are as follows:

2.8.1 AIR QUALITY MANAGEMENT

Drilling

Drilling machines are proposed to be equipped with wet drilling arrangements and cyclone dust collectors.

Blasting

- Controlled blasting is proposed to be adopted and optimum use of explosive energy will help in reducing the air pollution.
- Secondary blasting will be avoided.
- Rock breakers are proposed to be used for breaking over sized boulders in order to reduce the dust generation.
- Use of good quality of explosives having proper oxygen balance with regular monitoring.
- Ensuring proper stemming after charging of explosives. Proper stemming material will help in minimizing dust throw thereby lowering the spread of dust particles in ambient air pollution.
- Water spray on blasted muck pile before dozing/loading to control dust generation.

Loading & Transportation

- Water spray on haulage roads, access roads, operating benches and proper maintenance of haul roads.
- Development of green belt/plantation around mine boundary, roads and other places will be carried out to control the air pollution.
- Proper maintenance of the HEMMs & transportation vehicles will be done.
- Vehicular emissions will be kept under norms.
- Personal Protective Equipment like dust masks will be provided to all employees.
 - Regular air quality monitoring will be carried out.
- Compliance of conditions laid by MoEF&CC and TNPCB to minimize environmental impacts

2.8.2 NOISE MANAGEMENT

Drilling

- Drilling with sharp drill bits to achieve optimum drilling performance and to reduce noise generation at source will be adopted.
- Personal protective equipments i.e. earplug in drilling & in high noise area shall be used.

Blasting

- As blasting will be done in accordance with standards prescribed by DGMS for controlled blasting; therefore, ground vibrations will not affect the structures in the vicinity of mine area.
- Explosives charge per hole and per delay will be maintained as per DGMS guidelines.
- Blasting will be carried out by use of non-electric detonators (NONEL) system and the impacts of noise generated due to blasting are momentary.
- Vibrations and noise generated by blasting will be monitored regularly

Transportation

- Adequate silencers in HEMMs will be provided to reduce generation of noise.
- Proper and regular maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- All HEMMs will be equipped with acoustic a/c closed cabins for operators.
- The workers employed at HEMMs will be provided with protective equipment, earmuffs and earplugs as protective measures from the high noise level generated at the mine site and wherever required.
- Development of green belt & plantation around the mining activity and other areas, will be carried out.
- Regular monitoring of noise will be carried out.

2.8.3 WATER MANAGEMENT

Waste Water

Septic Tanks and soak pits will be provided for the disposal of effluent generated from mine office.

Surface Run-off

- Garland drains are proposed to be constructed around the temporary overburden soil dump to channelize the runoff water from dumps and also around the active pit to restrict rainy water from entering in to the working pit.
- Rain water falling directly into the mine pits will be stored and used for plantation & dust suppression.
- Regular monitoring of water quality will be carried out

GREENBELT/ PLANTATION

The mine lease area is devoid of major plantation. Shrubs and bushes are majorly found within the lease area. The proponent has planned to develop green belt in an area of 0.29.0 Ha. Trees like Pungai, Vagai, Vembu, Manjal konrai, Naval, Puvarasu, etc., will be planted around the mine lease area. As per SEAC norms, PP have to plant 1000 Saplings per Ha. The safety zone, covering an area of 0.29.0 hectares, will be maintained as a green belt and planted with local species As per SEAC norms, PP have to plant 1000 Saplings per Ha. The safety zone, covering an area of 0.29.0 hectares, will be maintained as a green belt and planted with local species

Plantation within Safety Zone (i.e. 0.29.0 Ha) – 290 nos

2.9 ASSESSMENT OF NEW & TESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE:

From the nature and extent of the deposit, the reserves and the quality have been proved with adequate degree of reliability. Considering the type of mineralization, opencast mechanized method is the most feasible method for mining in the proposed mine lease. It is also a matter of fact that the mining machineries are upgrading with time and therefore the project proponent would act fast to adopt more advanced equipment and automation for safe and environment friendly mining technology in the years to come.

2.10 VEHICULAR TRAFFIC DENSITY

The proposed quarry is located in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai, Tamil Nadu State. The final product from the quarry will be transported through Gulalpadi to Tiruvannamalai road located at a distance of 431 m

in western side of the project. Traffic density study was carried out in Gulalpadi to Tiruvannamalai road. The details of transport route from the quarry shown below:

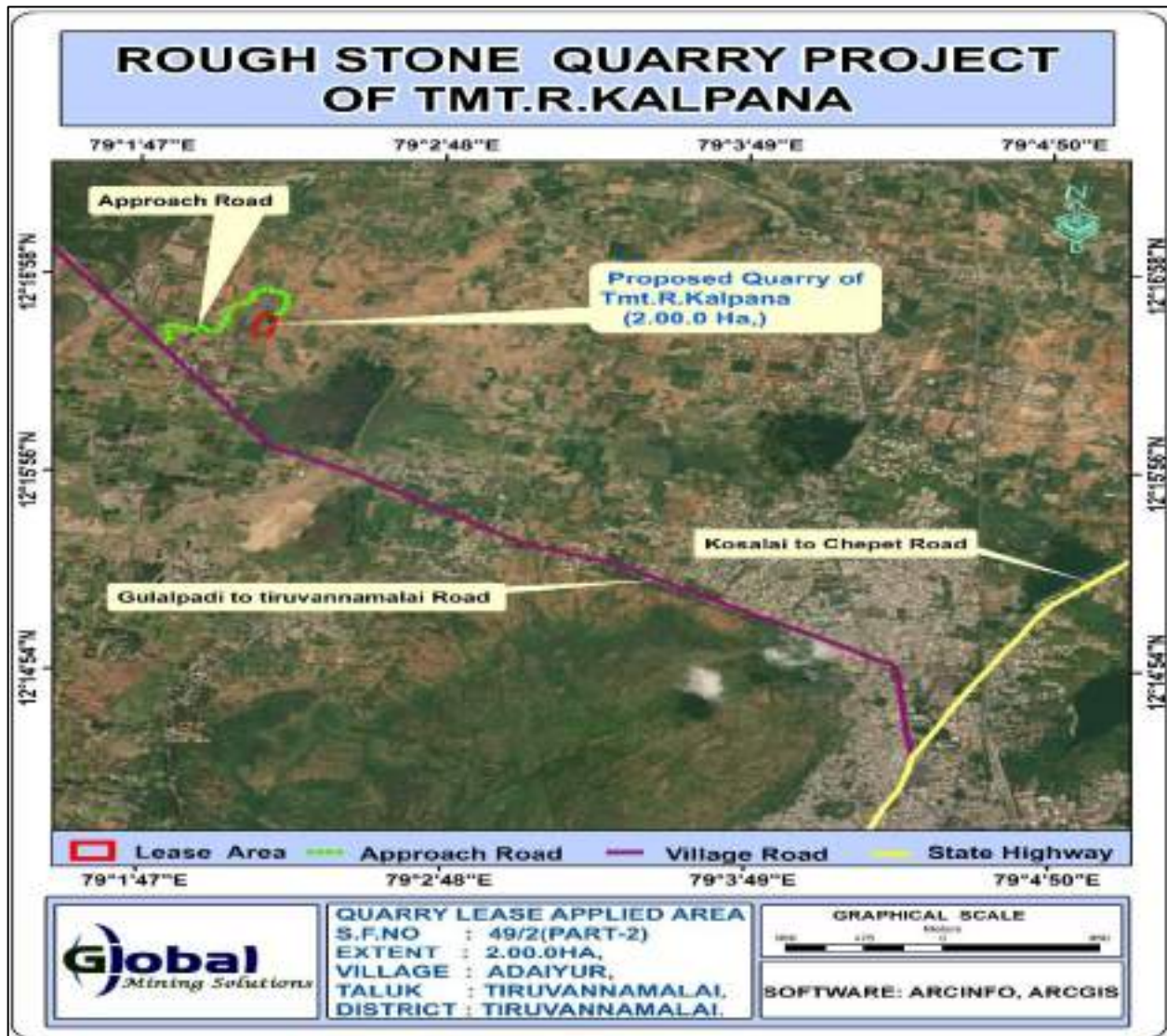


Figure 2.14 Mineral Transportation Map

The vehicular traffic survey will be carried out in the route through which mined out minerals are transported. Within 500 m radius, there is one existing quarry, 4 abandoned quarry and one proposed quarry including this proposal. The final product from this quarry will be transported through Gulalpadi to Tiruvannamalai road – 1.5 km – W.

Methodology

Vehicle Count

The vehicles passing through the road (in both ways) were counted separately for 24 hours at the one elected location from 06.00 hrs to 06.00 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

Mineral Transportation

Table 2.15 Mineral Transportation			
Production Per day in tons			
Quarry	Quarry Name	Total Mineral in tons per day	No. of Lorry Load per day
P1 (Proposed)	(Tmt.R.Kalpana)	1172	117
Total		1172	117

Since the existing quarry (1 No) are already integrated into the current traffic flow, the incremental traffic volume has been calculated considering only the proposed

quarries. Accordingly, the proposed projects are expected to generate 117 trips per day.

Table 2.16 Summary on Traffic Volume

Route	Existing Traffic Survey in PCU	Incremental Traffic due to project (cluster)	Total traffic survey volume	Hourly capacity in PCU as per IRC -1960 guidelines
Gulalpadi to Tiruvannamalai road	250	44	294	1500

Table 2.17 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
Gulalpadi to Tiruvannamalai road	250	0.16	24	0.16	0.32	B* Reasonable Flow

2.10.1 Infrastructure Requirement

This is a proposed project. Site services like mine office, first aid room, toilets etc. will be provided as semi-permanent structures.

2.10.2 Project Cost

The total project cost of this Rough stone Quarry is Rs. 257.84 Lakhs (including EMP & CER cost).

CHAPTER 3

DESCRIPTION OF THE ENVIRONMENT

3.1. STUDY AREA, PERIOD COMPONENTS AND METHODOLOGY

The project area is located in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State over an extent of 2.00.0 Ha., The project area is considered as Core zone and the area in the surrounding 10km radius is considered as Buffer Zone. The baseline environmental monitoring was conducted by Shrient Analytical & Research Labs Private Limited, Chennai it is an NABL and MOEF recognized laboratory for various components of environment, viz. Air, Noise, Water, Land was carried out during the post-monsoon season i.e. October to December 2025 in the study area covering 10 km radial distance from the Rough stone mine. Other environmental data on flora and fauna, land-use pattern, forest etc. were also generated through field surveys and secondary information collected from different State Govt. departments. Sampling methods and analysis. Socio-economic survey was conducted, through interaction with the people, sarpanch and medical officers by floating questionnaires and collection of information are supported by census data for demographic structures, amenities, and infrastructure availability within the study area. Baseline values for various environmental components are discussed in this Chapter.

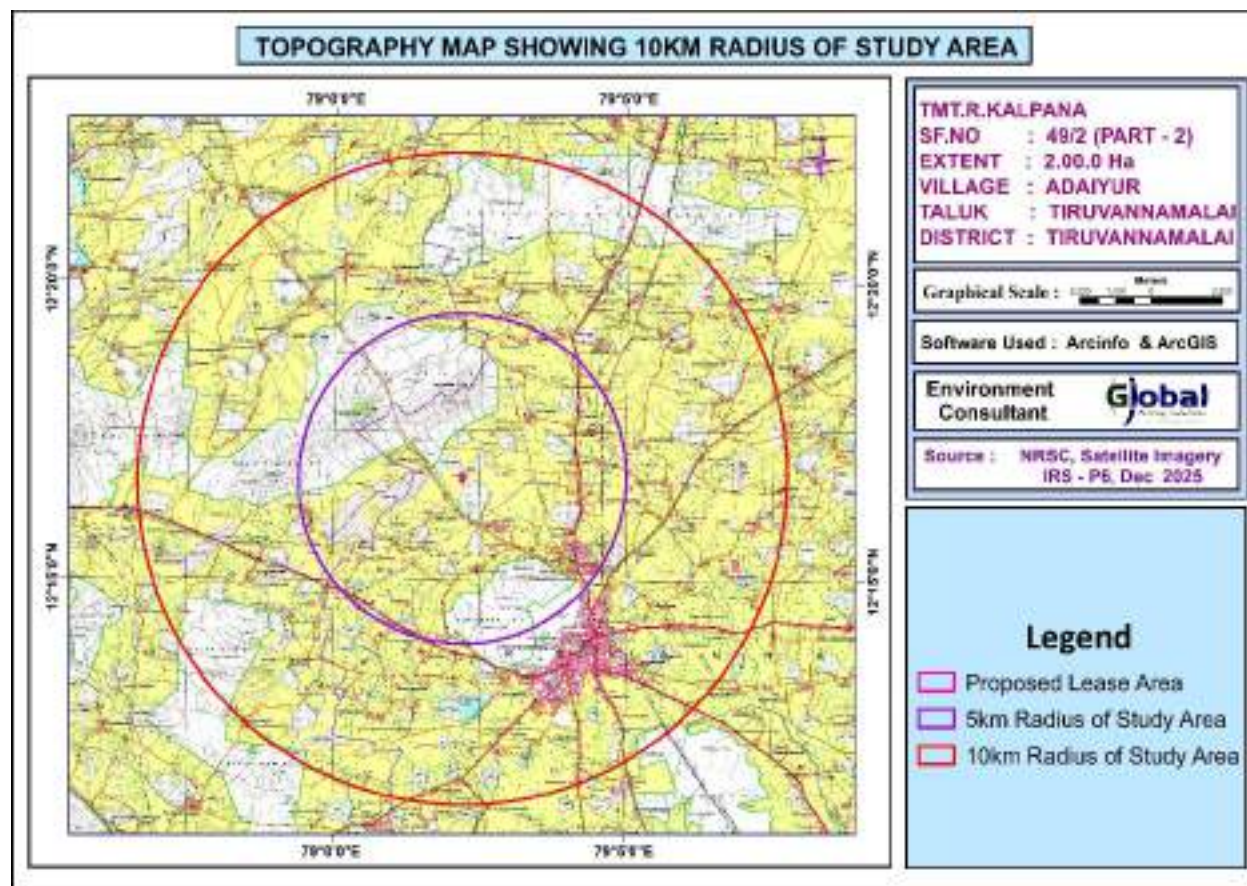
ENVIRONMENTAL SETTING OF THE STUDY AREA

Table 3.1 Description of the lease area		
S.No.	Areas	Distance from project site
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 10km radius
2	Areas which are important or sensitive for ecological reasons	

A	Wetlands, water courses or other water bodies,	Water bodies	Distance	Direction
		Odai	430m	SW
		Nochimalai Tank	460m	SE
		Kosalai Tank	1.64 km	SE
		Devanambattu Tank	2.5 km	S
		Devananda Tank	1.76 km	NW
		Venkikak Tank	2.8 km	SE
		Meelnachipattu Tank	7.26 km	NW
		Melpadur Chitheri	6.77 km	NW
		Narthavadi Tank	8.4 km	NW
		Adaiyur Tank	7.8 km	SE
B	Coastal zone, biospheres,	Nil within 10km radius		
C	Mountains, forests	- Kavunttumalai R.F – 713m (W) - Adiannamalai R.F- 3.09Km (SE) - Sorakolathur R.F – 6.09Km (N) - Radhapuram R.F- 7.46Km(SW)		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 15km radius		
4	Inland, coastal, marine or underground waters	Nil within 15km radius		
5	State, National boundaries	Nil within 15km radius		
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 15km radius		
7	Defense installations	Nil within 15km radius		
8	Densely populated or built-up area	Densely Populated Tiruvannamalai -7.4km (SE)		
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Densely Populated Tiruvannamalai -7.4km (SE)		

10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

FIG 3.1 ENVIRONMENTAL SETTING OF THE STUDY AREA



STUDY PERIOD

The relevant information and data (both primary and secondary) were collected in core as well as buffer zone (10 km distance from the mine boundary) during Post-monsoon season (Oct., to Dec., 2025) in accordance with the guidelines for preparation of EIA studies in order to assess the impact of the mine site within the 10 Km study area on existing physical, biological and social environment.

3.2 ESTABLISHMENT OF BASELINE FOR VALUED ENVIRONMENTAL COMPONENTS:

Information on the following components/parameters were collected to understand the existing scenario of the core and buffer area:

- ✚ Meteorological environment
- ✚ Air environment
- ✚ Water environment
- ✚ Noise environment
- ✚ Soil environment
- ✚ Biological environment
- ✚ Land use & Land cover
- ✚ Socio economic environment
- ✚ Hydrogeology

BASELINE DATA COLLECTION

Baseline environment data on various components of the environment in the study area were collected during the post-monsoon season (Oct., to Dec., 2025) to assess the present scenario of the area. Details are given in the table given below.

Baseline data collection During Post Monsoon Season (Oct., to Dec., 2025)

Sr.No	Environment al Component	Primary data		
		Parameters	Frequency	Monitoring/S ampling locations
1	Land	Agriculture, Habitation, Industry, Stony waste/ Quarries, Forest area, Plantation/ Vegetation,	Once in a Season	10 km radius study area

		Open scrub, Water bodies etc.		
2	Meteorology	Temperature, Relative Humidity, Wind Speed, Wind Direction.	Hourly	1
3	Air	PM10, PM2.5, SO2, NO2, CO & PAH	twice a week (24 hourly)	6
4	Noise	Equivalent noise levels in Leq in dB (A)	Once in a season (day & night time)	6
5	Water	Parameters as per IS 10500 - 2012	Once in a season	
A	Ground Water & SW	Parameters As per IS 2720/USDA	Once in a season	6 +2(sw)
6	Soil	Parameters As per IS 2720/USDA	Once in a season	6
7	Biological Environment	Flora and Fauna	Once in a season	Study Area
8	Socio-Economic Environment	Socio-Economic Environment	Once in a season	Study Area

INSTRUMENTS USED FOR ENVIRONMENTAL BASELINE DATA COLLECTION

The following instruments were used at the site for environmental baseline data collection work.

- Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460.
- Fine Particulate Matter (FPS) Sampler APM 550
- Sound Level Meter Model Envirotech SLM - 100
- Digital D.O. Meter Model - 831 E (CPCB Kit)
- Weather Monitoring Station Model Enviro WM 271
- Water Level Indicator and
- Global Positioning System (GPS) Apart from collecting samples of air, water, noise and soil from representative sampling points given in proceeding sections, the data on land use, vegetation and agricultural crops were also collected by the field team through interaction with a large number of local inhabitants of the study area and different Government departments/agencies. This provided an excellent

opportunity to the members of the field team for obtaining clear scenario of the existing environment of the study area.

3.3. BASE MAP OF ALL ENVIRONMENTAL COMPONENTS

(ENUMERATION OF THE STRUCTURES LOCATED WITHIN 300M RADIUS FROM THE PROPOSED QUARRY SITE)

A site survey has been conducted to identify and list structures located within a 500 m radius from the proposed Quarry and are detailed below. There are no permanent structures within a 300 m radius from the project site. The PP has obtained a letter from Village Administrative Office (VAO), Adaiyur stating that there are no structures situated within 300 m radius.

As per filed study, there are 11 structures observed within 300m radius of the proposed site which are shown above. There are no habitations within 300m radius of the project site.

FIG 3.2 GOOGLE MAP SHOWING 100M INTERVAL FOR 300M RADIUS FROM THE LEASE AREA

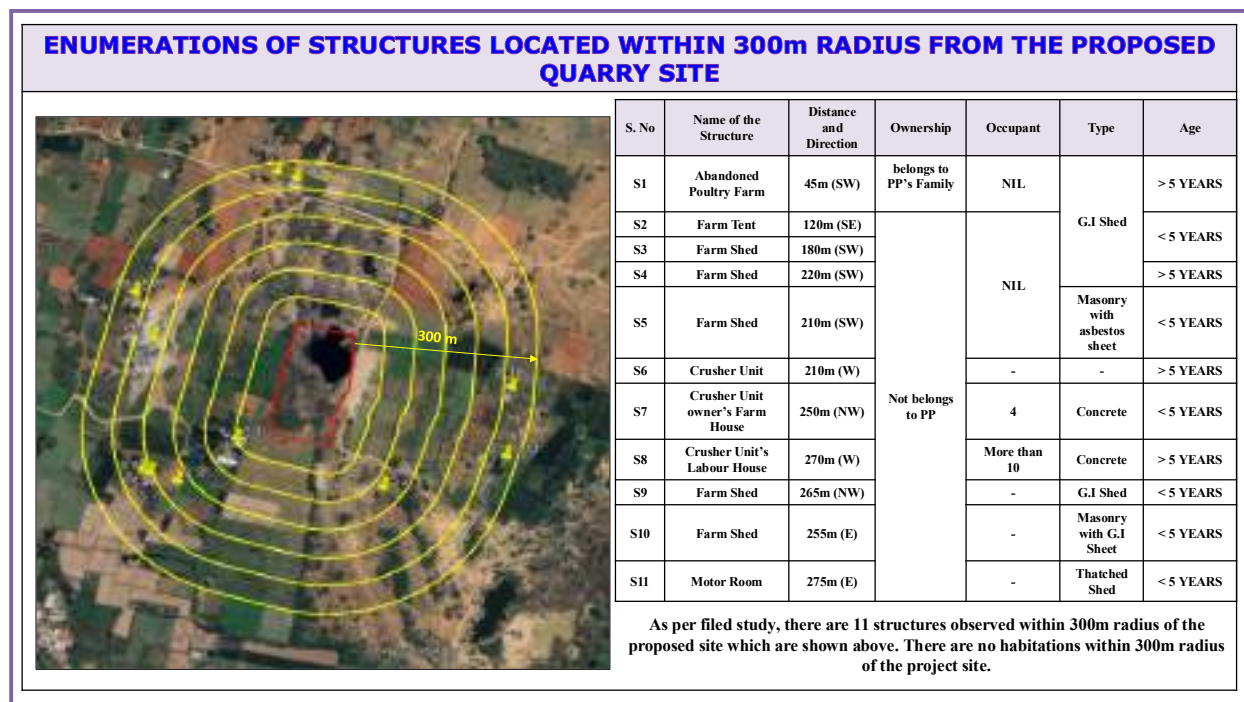
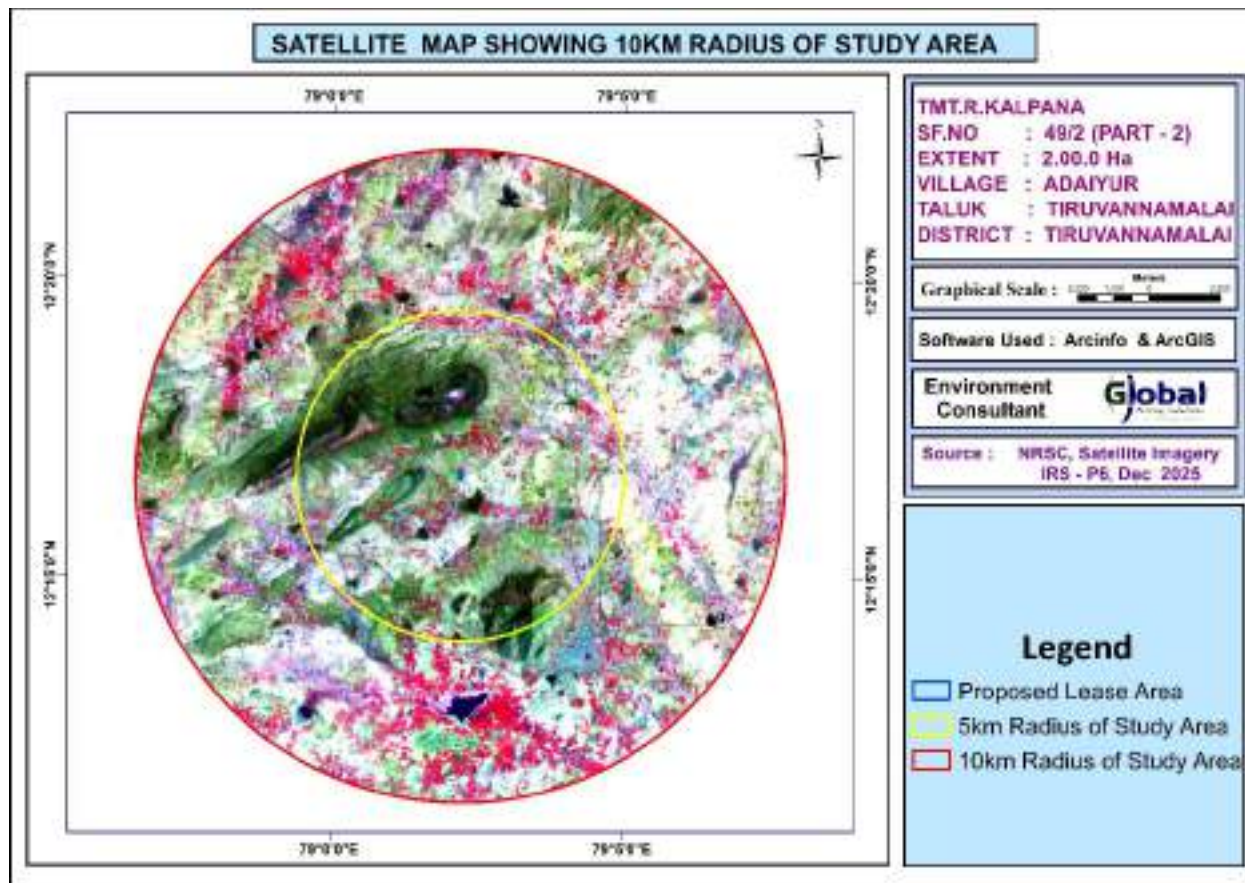


FIGURE - 3.3 SATELLITE MAP OF THE PROJECT AREA (10 KM RADIUS)



3.3.1 METEOROLOGICAL ENVIRONMENT

Meteorological conditions prevailing in the buffer zone is given below

Climate

From the middle of February, temperature increases steadily. In May which is usually the hottest month in the interior, the mean daily maximum temperature rises to 38° to 42° degree Celsius and during winter period it drops to 28° to 33° Celsius. The weather is quite hot in May and June and the maximum temperature sometimes reaches 42°Celsius. With the onset of the southwest monsoon by beginning of June, there is some drop in temperature.

Rainfall

Tiruvannamalai district generally experiences hot and humid climate conditions. The district receives rain under the influence of both southwest and northeast monsoons. Most of the precipitation occurs in the form of cyclonic storm caused due to depressions in Bay of Bengal chiefly during NE monsoon period. The SW monsoon is highly erratic and summer rains are negligible. The average rain fall in the in the region of the project area is 800-900 mm per annum during Southwest and Northeast Monsoons.

Rainfall received from 2017 to 2021 is given below.

Table 3.2 Rainfall data					
Actual Rainfall in mm					Normal rainfall in mm
2017	2018	2019	2020	2021	
1201	792	1002	1035	1512	985

Relative Humidity

The relative humidity in general during the year is between 55 and 65 percent in the region of the project area, except during the northeast monsoon season, when it is over 65 per cent. However, the coastal areas will be comparatively more humid.

Seismic information

The study area falls in Zone II, which comes under the least active zone. The seismic map of India is given as Fig 3.5.

FIG 3.4 SEISMIC MAP OF INDIA

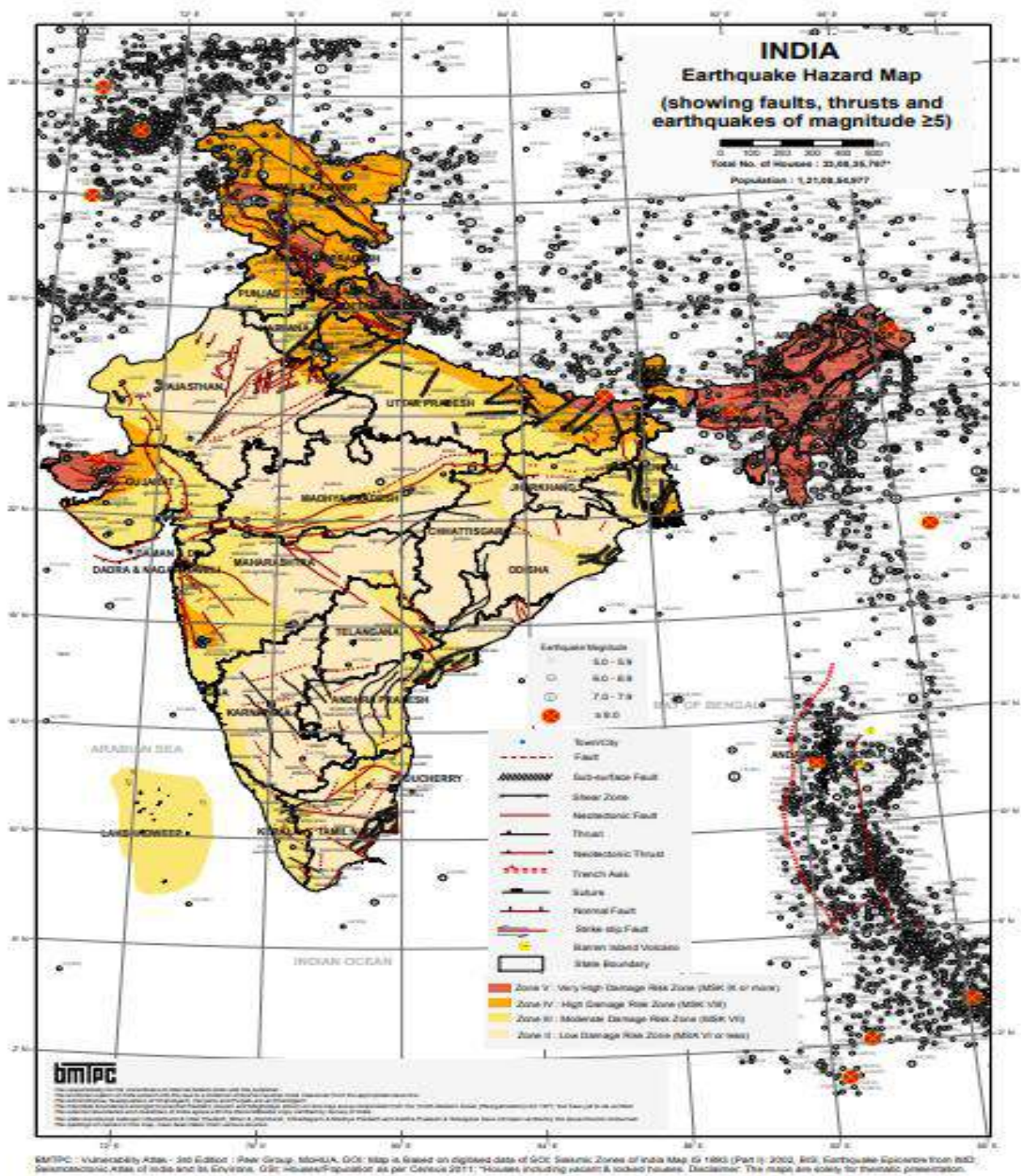
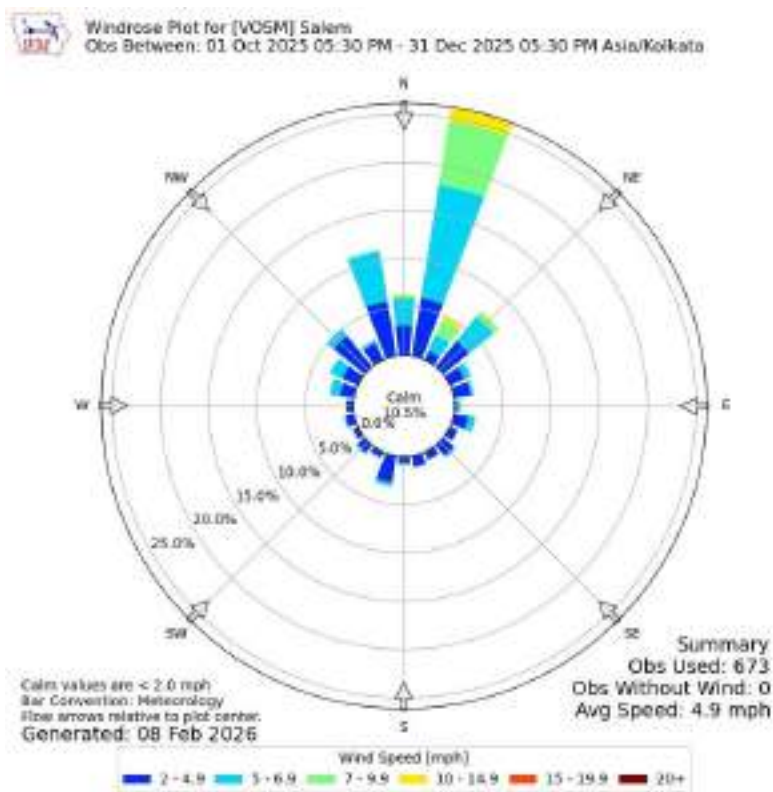


FIG 3.5 WIND ROSE PLOT DURING OCTOBER TO DECEMBER 2025



Meteorological data of the project area

S.NO	Parameters		Oct to Dec 2025
1.	Temperature ($^{\circ}\text{C}$)	Min	25
		Max.	45
		Avg	33
2.	Relative Humidity (%)	Avg	65
3.	Wind Speed (km/h)	Min	0
		Max	38
		Avg	16
4.	Wind Direction	Blowing From – SW Blowing Towards - NE	

3.3.2 AMBIENT AIR MONITORING DATA

Ambient air quality monitoring has been carried out in 6 locations. One in the core zone and remaining five locations in the buffer zone areas. Monitoring locations have been chosen such that the measurement represents the overall air condition prevailing

in the area. The study area represents mostly rural environment with stone mining quarries & crushers.

The regional climatologically data, was used as a guideline to know the predominant wind direction during study period. The locations were identified keeping in view predominant wind directions prevailing during study period, sensitive receptors, human settlements, and mining activities around.

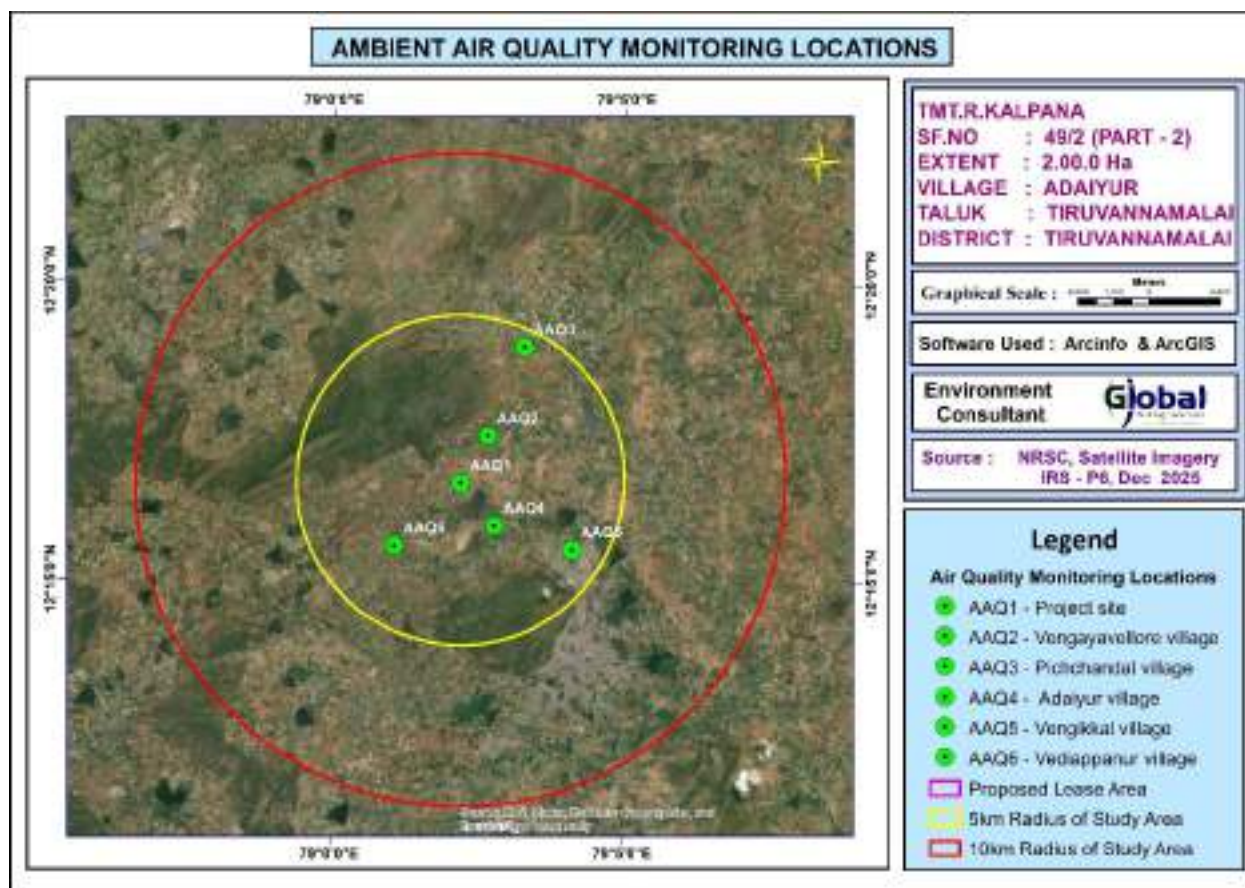
The levels of Respirable Particulate Matter (PM₁₀), Fine Particulates (PM_{2.5}), Sulphur Dioxide (SO₂) and Oxides of Nitrogen (NO_x) were monitored for establishing the baseline status. PM₁₀ were sampled with the help of Respirable Dust Samplers on filter papers and SO₂ & NO_x were absorbed in the respective absorption media in the impingers attached to RD samplers and analyzed Spectro-photometrically. PM_{2.5} was monitored with the help of Fine Particulate Samplers. The monitoring locations for ambient air study are given in Table – 3.4 and Figure 3.6 below.

Table 3.3 Methodology for Air Quality Monitoring

1.	Monitoring Period	Summer (October 2025 – December 2025)
2.	Monitoring Location	The monitoring locations for ambient air study is given in Table – 3.4 and Figure 3.7.
3.	Selection Criteria	The monitoring location is selected based on terrain & wind direction. Locations were chosen in upwind, downwind and crosswind
Methodology		
4.	A. Sampling	(IS-5182:Part 1:2018)
	B. Analysis	
	Parameters	Protocol
5.	Particulate Matter (PM ₁₀)	Gravimetric (IS 5182: Part 23:2017)
	Particulate Matter (PM _{2.5})	Gravimetric (IS 5182: Part 24:2019)
	Sulphur Dioxide	Colorimetric (West & Gaeke Method) (IS 5182: Part 02: 2017)
	Nitrogen Dioxide	Colorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2017)
	Carbon Monoxide	CO Monitor
	Monitoring Frequency	2 days in a week, 4 weeks in a month for 3 months in a season.

Table 3.4: Details Of Ambient Air Quality Monitoring Locations				
S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ 1	Project site core zone	-	12°16'38.98"N 79° 2'12.33"E
2	AAQ 2	Vengayavellore village	1.58 km NE	12°17'26.50"N 79° 2'39.97"E
3	AAQ 3	Pichchandal village	4.47 km NE	12°18'55.97"N 79° 3'16.88"E
4	AAQ 4	Adaiyur village	1.66 km SE	12°15'55.96"N 79° 2'46.93"E
5	AAQ 5	Vengikkal village	3.91 km SE	12°15'32.37"N 79° 4'6.33"E
6	AAQ6	Vediappanur village	2.76 km SW	12°15'35.60"N 79° 1'4.74"E

FIG 3.6 BASE MAP OF AMBIENT AIR MONITORING LOCATIONS



The concentrations of various air pollutants at the 6 locations are given below. For all the components in the table, the unit are in $\mu\text{g}/\text{m}^3$.

Table.3.5 Results of Air sampling Analysis in 6 locations

Station ID	Min	Max	Avg.
Particulate matter PM-_{2.5} (µg/m³)			
AAQ-1	23.8	31.6	27.7
AAQ-2	17.7	27.2	22.45
AAQ-3	18.9	27.2	23.05
AAQ-4	20.4	28.7	24.75
AAQ-5	23.5	28.6	26.05
AAQ-6	22.1	33.6	27.85
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Particulate matter PM-₁₀ (µg/m³)			
AAQ-1	49.9	68.9	59.4
AAQ-2	38.8	50	44.4
AAQ-3	41	51.8	46.4
AAQ-4	44	57.3	50.65
AAQ-5	46.3	60.1	53.2
AAQ-6	47.8	59.2	53.5
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	6.3	8.6	7.45
AAQ-2	4	6.2	5.1
AAQ-3	4	6.1	5.2
AAQ-4	4.3	6.1	5.2
AAQ-5	4	7.1	5.55
AAQ-6	4.4	6.9	5.65
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	10.6	12.7	11.65
AAQ-2	7.7	10.3	9
AAQ-3	7.2	8.8	8
AAQ-4	7.7	10.8	9.25
AAQ-5	8.1	11.9	10
AAQ-6	9.1	10.8	9.95
CPCB NAAQS 2009 for NO₂ - 80 µg/m³			

The results are summarized in graph and given as below Fig. 3.6

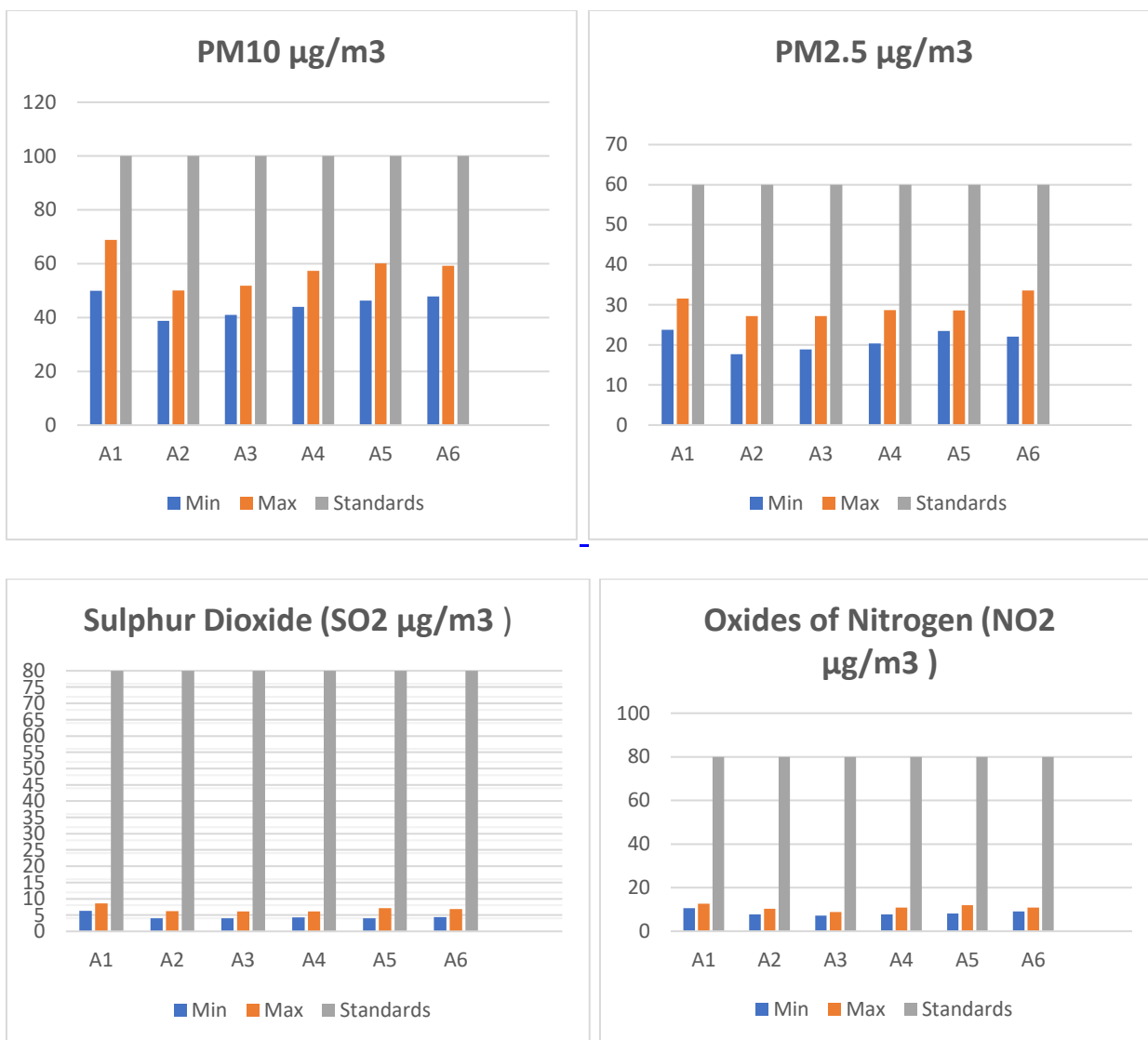


FIG 3.7 Graphical Representation of Air Quality Data

Discussion

From the table it is seen that, in core zone, the PM10 values were in the range of 49.9 – 68.9 $\mu\text{g}/\text{m}^3$. PM2.5 values in the range of 23.8– 31.6 $\mu\text{g}/\text{m}^3$. SO2 levels were ranging from 6.3 – 8.6 $\mu\text{g}/\text{m}^3$ and NO2 levels were ranging from 10.6 – 12.7 $\mu\text{g}/\text{m}^3$. In buffer zone, the PM10 values were in the range of 38.8 – 60.1 $\mu\text{g}/\text{m}^3$. PM2.5 values were in the range of 17.7 – 33.6 $\mu\text{g}/\text{m}^3$. SO2 levels were ranging from 4.0 – 7.1 $\mu\text{g}/\text{m}^3$. NO2 levels were ranging from 7.2 – 9.95 $\mu\text{g}/\text{m}^3$. While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM10, PM2.5, SO2, NO2 & CO were

found to be well within the prescribed standards. The maximum value of all four parameters is observed in the mine lease area except for So₂. The main contributing factor is the presence of another existing Quarries and crusher near to the project site.

3.3.3 WATER ENVIRONMENT

Assessment of baseline data on water environment includes:

- Identification of water resources
- Collection of water samples
- Analyzing water samples collected for physico-chemical parameters as per standards.

Surface Water

There is Odai is located at a distance of 430m in Southwest direction, Nochimalai Tank- 460m (SE), Kosalai Tank -1.64 km SE, Devanambattu Tank -2.5 Km S of lease area. The rainfall over the area is moderate, the rainwater storage in open wells, trenches is in practice over the area and the stored water acts as source of freshwater. The prevailing status of surface water quality has been assessed during the study period. Surface water quality locations and results are provided in Table 3-6 and Figure 3.9.

Ground Water

The rainfall is the main source for the availability of water both in surface and sub-surface. The quantum of rainfall varies every year depending upon the monsoon. However, the extraction of surface and sub-surface water is increasing year by year. It leads to environmental impact on the water sources like depletion of water level, deterioration of water quality. It makes the demand for the quantification of available water and also its quality for various purposes like agriculture, industries, drinking and domestic purposes. Total six (06) ground water monitoring locations were identified for assessment in different villages around the project site based on the usage of sub surface water by the settlements/ villages in the study area. The groundwater results are compared with the acceptable and permissible water quality standards as per IS: 10500 (2012) for drinking water. Groundwater quality monitoring locations and results are given in Table 3.5 and Figure 3.8.

Sampling Locations

six (6) ground water and two (2) surface water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on water bodies. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012. The water sampling locations are given in Table 3.6 and shown as Figure 3.8.

The monitoring locations were selected based on:

- Location of the major water bodies
- Location of project site,
- Likely areas that can represent baseline conditions

Water bodies nearby

Table 3.6 Water Sampling Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
Ground Water			
1	GW1	Project site core zone	12°16'38.98"N 79° 2'12.33"E
2	GW2	Vengayavellore village	12°17'26.50"N 79° 2'39.97"E
3	GW3	Pichchandal village	12°18'55.97"N 79° 3'16.88"E
4	GW4	Adaiyur village	12°15'55.96"N 79° 2'46.93"E
5	GW5	Vengikkal village	12°15'32.37"N 79° 4'6.33"E
6	GW6	Vediappanur village	12°15'35.60"N 79° 1'4.74"E
Surface water sampling locations			
1	SW1	Kosalai Tank	12°15'49.08"N 79° 2'29.91"E
2	SW2	Devandal tank	12°15'39.81"N 79° 1'34.17"E

FIG 3.8 BASE MAP OF GROUND WATER SAMPLING LOCATIONS

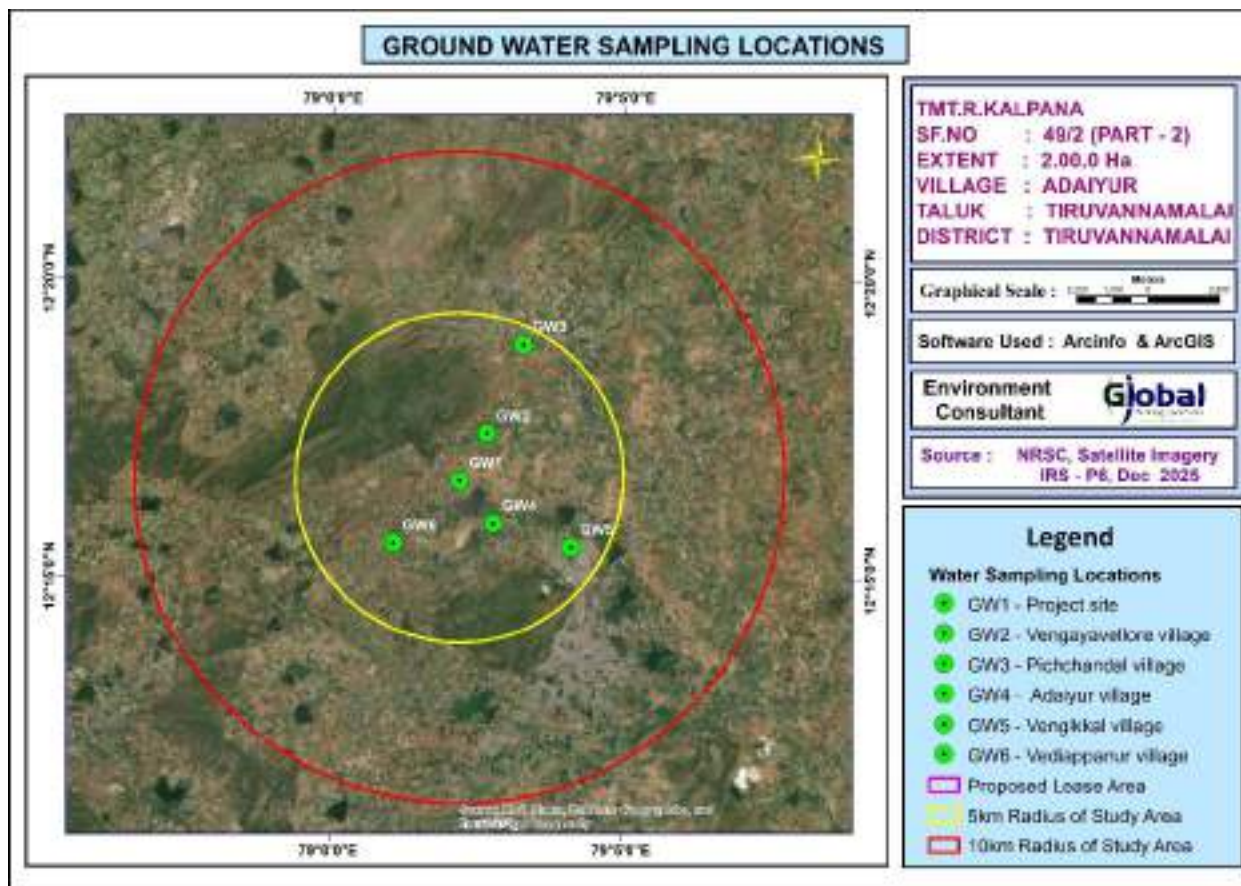


FIG 3.9 BASE MAP OF SURFACE WATER SAMPLING LOCATIONS

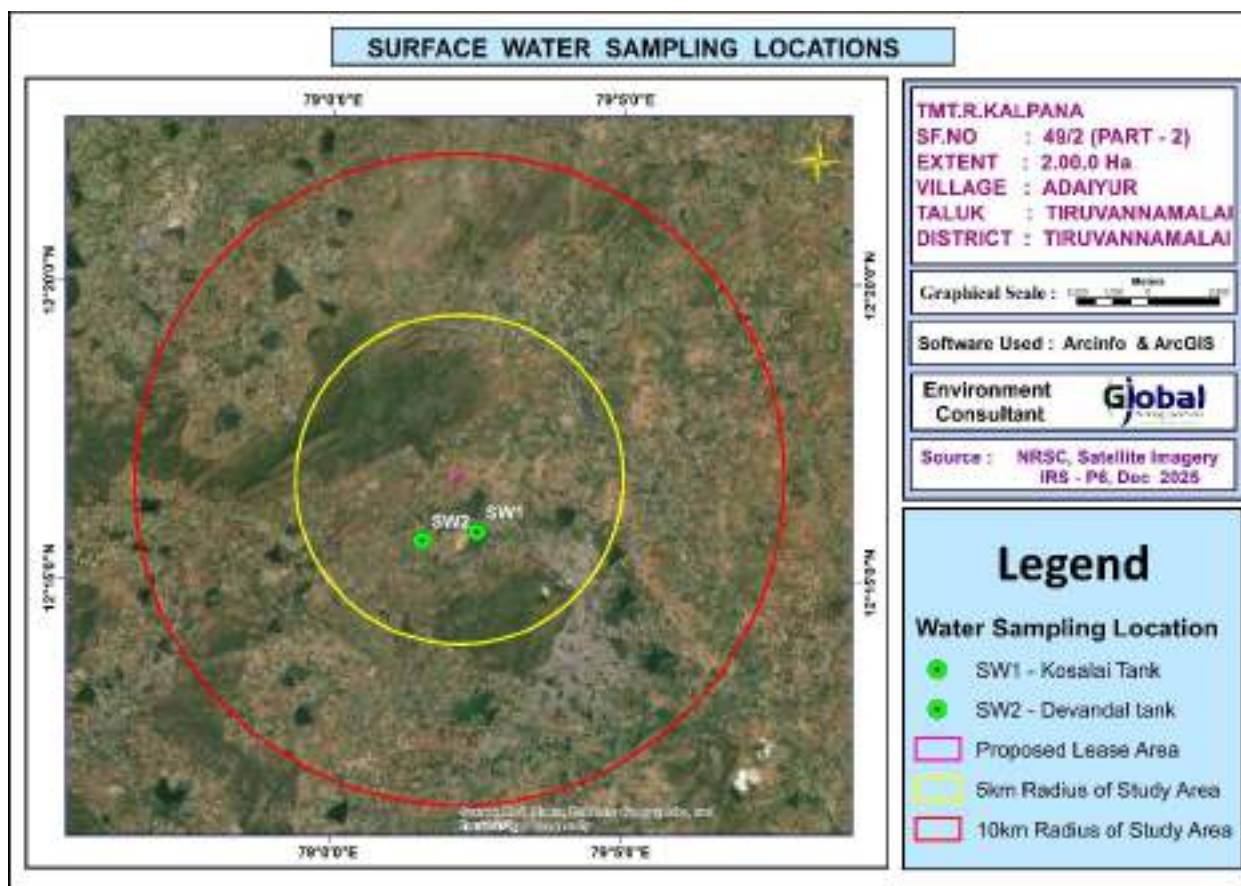


Table 3.7 Surface Water Analysis Results

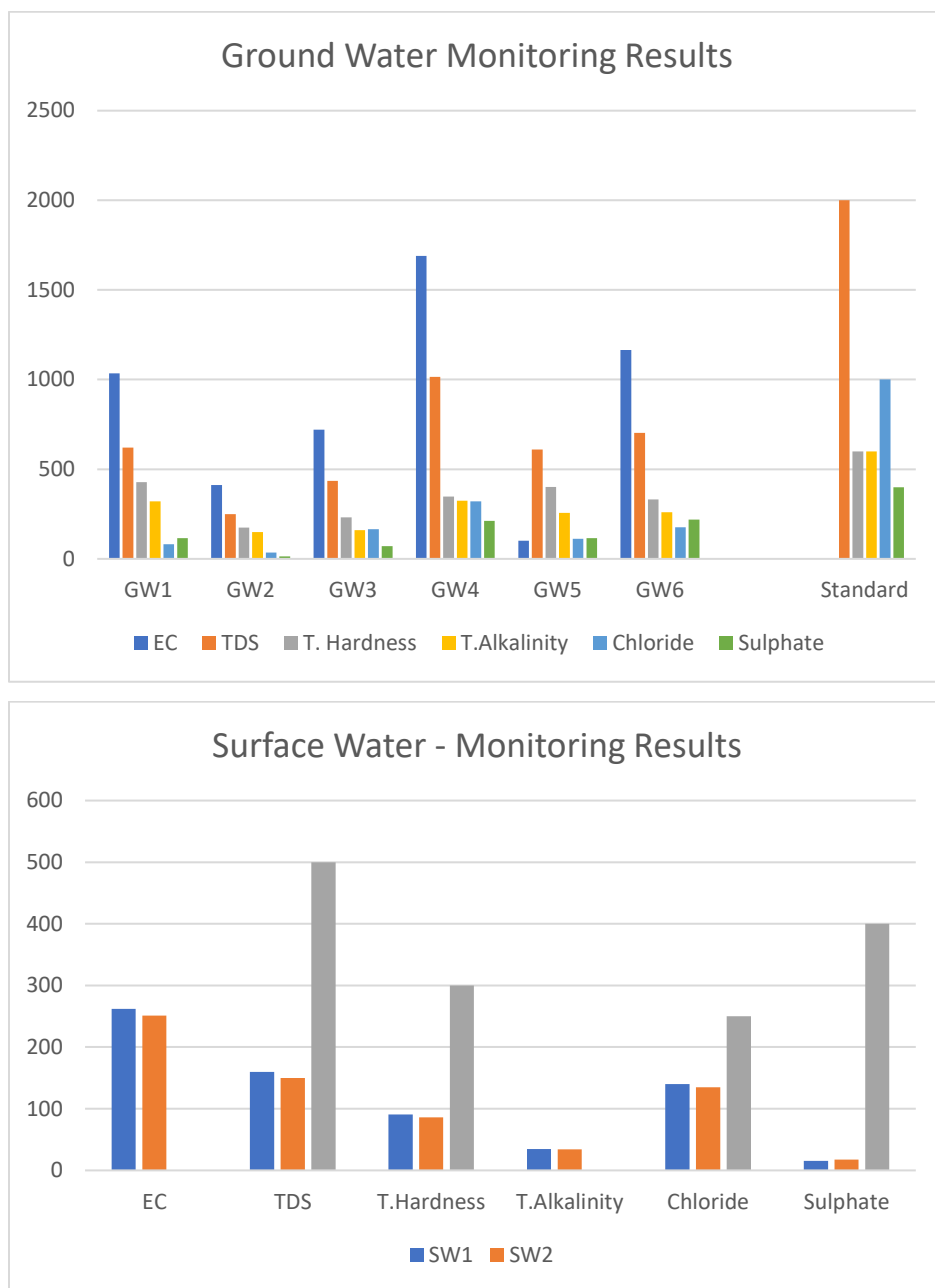
S.No	Parameter	Unit	SW1	SW2	Surface water standards (IS 2296 Class-A)
1	Odour	-	<1.0	<1.0	-
2	Turbidity	NTU	7.76	7.95	1
3	pH at 25 °C	-	262	251	6.5-8.5
4	Electrical Conductivity	µs/cm	160	150	-
5	Total Dissolved Solids	mg/l	90.5	86.2	500
6	Total hardness as CaCO3	mg/l	22.3	21.4	-
7	Calcium as Ca	mg/l	8.33	7.85	300
8	Magnesium as Mg	mg/l	55.8	53.5	-
9	Calcium as CaCO3	mg/l	34.7	32.7	-

10	Magnesium as CaCO ₃	mg/l	34.6	34.2	-
11	Total alkalinity as CaCO ₃	mg/l	140	135	-
12	Chloride as Cl ⁻	mg/l	BDL (D.L - 0.2)	BDL (D.L - 0.2)	-
13	Free Residual chlorine as Cl ⁻	mg/l	15.2	17.6	250
14	Sulphates as SO ₄ ²⁻	mg/l	BDL(D.L - 0.01)	BDL(D.L - 0.01)	400
15	Iron as Fe	mg/l	BDL(DL-1.0)	BDL(DL-1.0)	1.0
16	Nitrate as NO ₃	mg/l	0.25	0.22	20
17	Fluoride as F	mg/l	BDL(D.L-0.05)	BDL(D.L-0.05)	1.5
18	Manganese as Mn	mg/l	BDL (D.L – 4.0)	BDL (D.L – 4.0)	0.5
19	COD	mg/l	BDL (D.L – 2.0)	BDL (D.L – 2.0)	-
20	BOD	mg/l	BDL (D.L – 2.0)	BDL (D.L – 2.0)	-
21	TSS	mg/l	6.2	6.1	-
22	DO	mg/l	<1.0	<1.0	-

The samples were analyzed by Shrient Analytical & Research Labs Private Limited; Chennai and the results are summarized above.

Table 3.8 Results of Ground Water sampling Analysis in 6 locations							Specification/ Limit (As per IS:10500: 2012)	
	W1	W2	W3	W4	W5	W6	Desirable	Permissible
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity	<1	<1	<1	<1.0	<1	<1	<1	<5.0
pH at 25 °C	7.42	7.84	6.97	7.38	7.42	7.25	6.5 - 8.5	No Relaxation
Electrical Conductivity	1034	412.6	720.5	1690	1012	1165	-	-
Total Dissolved Solids	620	250	435	1015	610	702	500	2000
Total hardness as CaCO ₃	428	174	232	348	401	332	200	600
Calcium as Ca	83.2	44.8	58	66.8	78	74.4	75	200
Magnesium as Mg	52.8	14.9	20.9	43.4	49.4	35.0	30	100
Calcium as CaCO ₃	208	112	145	167.0	195	186	-	-
Magnesium as CaCO ₃	220	62	87	181	206	146	-	-
Total alkalinity as CaCO ₃	320	150	160	325	256	260	200	600
Chloride as Cl ⁻	81.5	34.5	166	330	112	176	250	1000
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)	0.2	1
Sulphates as SO ₄ ²⁻	115	13.5	70.6	212	116	220	200	400
Iron as Fe	0.05	0.04	0.03	0.07	0.05	BDL(D.L - 0.01)	0.3	No Relaxation
Nitrate as NO ₃	2.36	BDL(D.L-1.0)	3.54	2.65	2.99	2.34	45	No Relaxation
Fluoride as F	0.33	0.26	0.29	0.41	0.29	0.45	1.0	1.5
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)	0.1	0.3

FIG 3.10 VALUES OF FEW COMMON PARAMETERS IN WATER ANALYSIS



Discussion

Surface Water

The pH varied from 7.76 to 7.95 while turbidity found to be less than 1, which is within the permissible limit of 5.0. Total Dissolved Solids varied from 150 to 160 mg/l.

Chloride varied between 135 mg/l, 140 mg/l. Nitrates are BDL mg/l, while sulphates varied from 15.2 to 17.6 mg/l.

Ground Water

Suitability of ground water for drinking/irrigation/industrial purposes is determined keeping in view the effects of various chemical constituents present in water as required human use, plant use. Though many ions are very essential for the growth of plants and human body but when present in excess, have an adverse effect on health and growth.

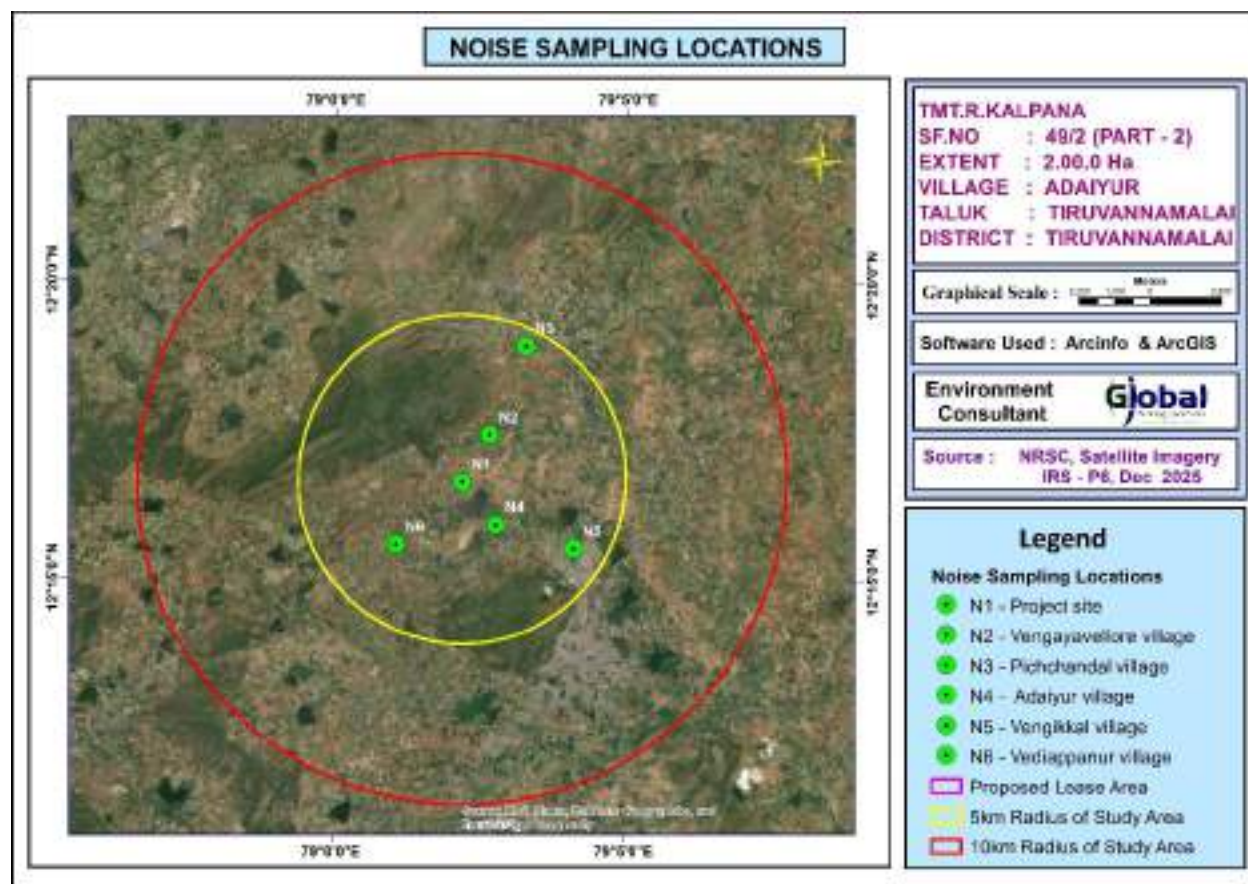
As Per the data it has been observed that the pH value varies from 6.97 – 7.84, Chlorides Ranges From 34.5 - 330 mg/l, Sulphates value found to be between 13.5 – 220 mg/l, Fluoride value varies from 0.26 – 0.45mg/l, Total Hardness varies from 176 – 425 mg/l, and Total dissolved solid 174 – 428 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

3.3.4 NOISE MONITORING

Noise level monitoring was calculated using a noise level meter by NABL Accredited lab and the results are summarized below.

The noise monitoring locations are given in Fig 3.11

FIG 3.11 BASE MAP OF NOISE MONITORING LOCATIONS

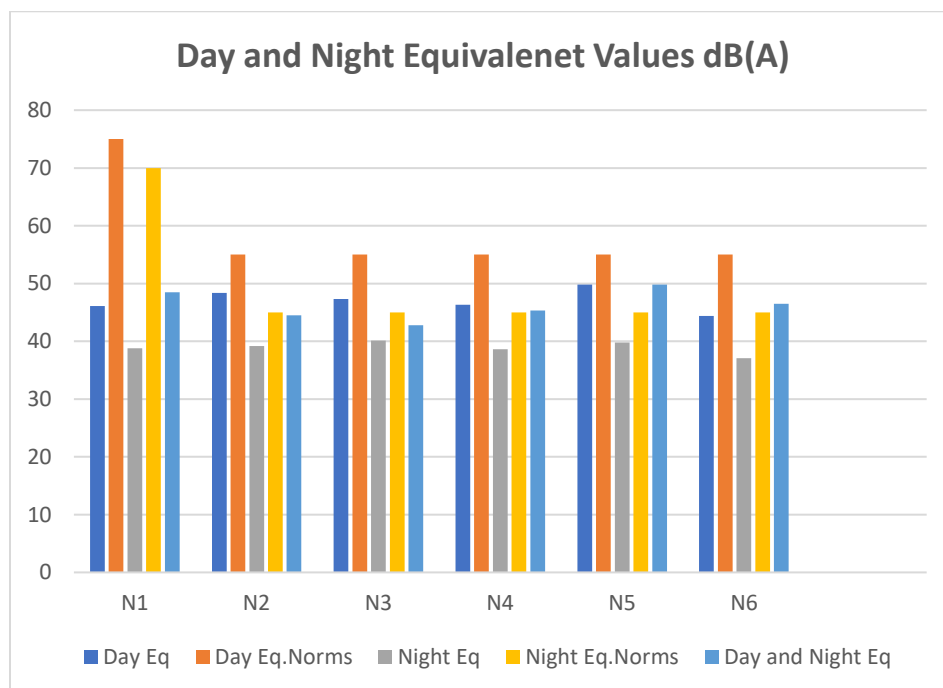


The results are given in Table below.

Table 3.9 Noise monitoring results					
S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	Project site core zone	46.1	38.8	75	70
2	Vengayavellore village	48.4	39.2		
3	Pichchandal village	47.3	40.1		
4	Adaiyur village	46.3	38.6		
5	Vengikkal village	49.8	39.8		
6	Vediappanur village	44.4	37.1		

The results are plotted as below.

FIG 3.12 DAY AND NIGHT EQUIVALENT VALUES IN 6 LOCATIONS



Discussion

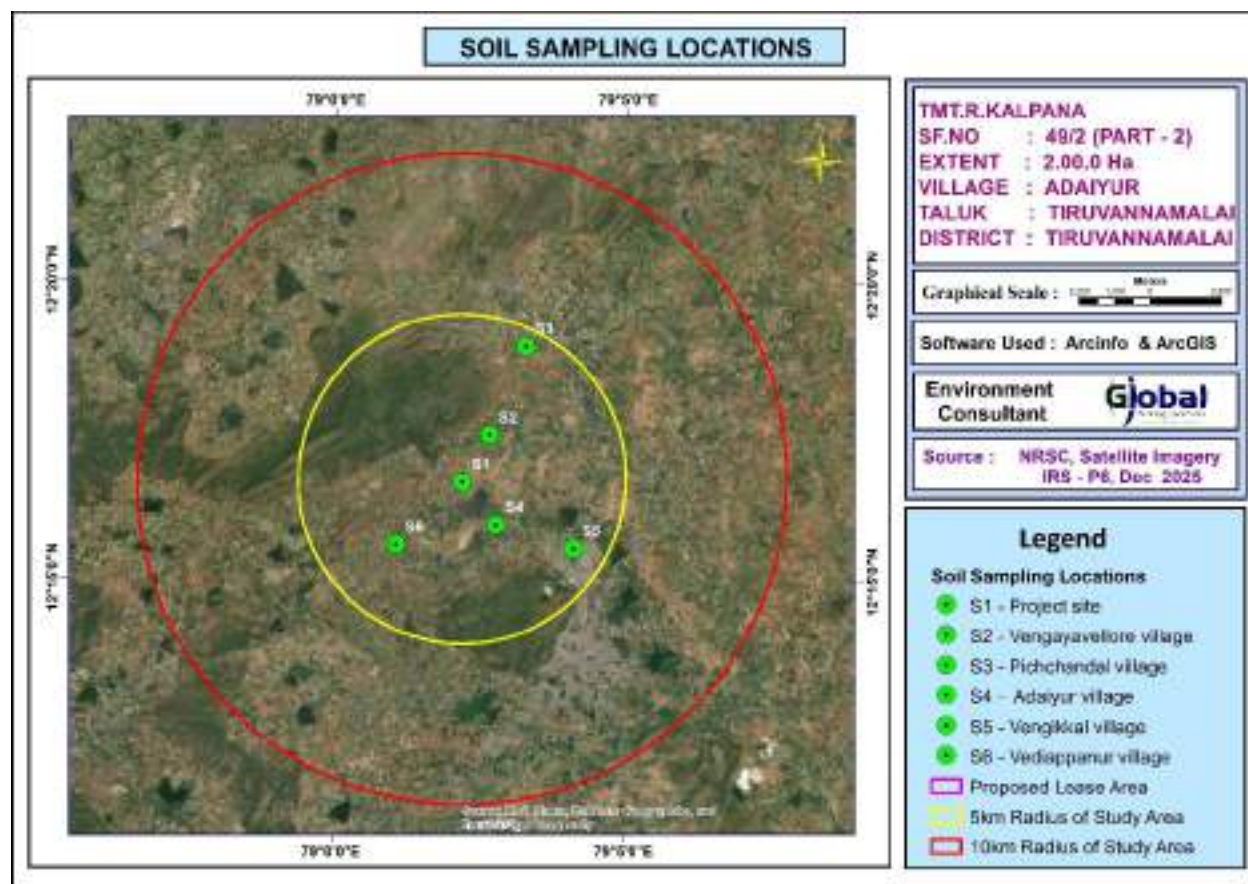
From the table it is observed that the day Equivalent Noise (Leq-d) level were ranging from 44.4 to 48.4 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 37.01 to 43.01 dB(A). Day and Night Equivalent Noise (Leq-n) level were ranging from 43.01 to 48.4 dB (A). While comparing with the MoEF Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels are within the limit values.

After commencement of mine operation the anticipated noise level will be 42 dB – 60 dB in the N1 location. (Project Site). It is very negligible and within the prescribed standards of MoEF & CC and DGMS.

3.3.5 SOIL SAMPLING ANALYSIS

Soil samples have been collected from the mine lease area and 6 other locations from project site, Vengayavellore village, Pichchandal village, Adaiyur village, Vengikkal Vediappanur village. The locations are shown in figure below.

FIG 3.13 BASE MAP OF SOIL SAMPLING LOCATIONS



The results are summarized in the table below.

Table 3.10 Results of Soil Sample Analysis								
S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25 °C	-	7.56	6.98	6.85	6.99	7.12	7.54
2	Electrical Conductivity	µmhos/cm	75.68	80.24	47.32	62.45	55.39	121
3	Dry matter content	%	96.57	93.25	96.57	95.89	96.11	94.36
4	Water Content	%	3.43	6.75	3.43	4.11	3.89	5.64
5	Organic Matter	%	0.49	0.52	0.69	0.75	0.96	0.94
6	Soil texture	-	LOAM	CLAY LOAM	loam	loam	loam	SANDY LOAM
7	Grain Size Distribution	%	50.32	30.79	49.01	34.65	40.12	66.65
	i. Sand							
	ii. Silt							
9	iii. Clay	%	20.72	26.89	19.3	19.83	23.37	9.61
10	Phosphorous as P	mg/kg	1.42	1.32	1.75	1.25	2.32	1.78

11	Sodium as Na	mg/kg	662	550	428	387	420	469
12	Potassium as K	mg/kg	354	323	636	590	664	305
13	Nitrogen and Nitrogenous Compounds	mg/kg	190	212	154	205	244	176
14	Total Sulphur	%	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)
15	Porosity	%	19.8	19.5	20.6	22.1	23.6	21.1
16	Water Holding Capacity	Inches/foot	40	44	42	40	42	38

3.3.6 BIOLOGICAL ENVIRONMENT

Study of the biological environment of any area comprises of well-planned ecological survey for the floristic and faunal composition of the areas through various scientifically planned techniques. Accordingly, the ecological survey for the proposed Rough Stone quarry area including core and buffer zone were carried out to identify various species occurring in the area.

Flora in the study area

An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological (Terrestrial and Aquatic Ecosystems) conditions. The objective of the survey is as follows:

- Generate existing data from field observations of various terrestrial floristic occurrences.
- Collect secondary data from Government records as well as through discussion with Forest officials, knowledgeable public etc.,
- Compare the data with authentic past records to identify changes, if any.
- Identify the impact of project operations on the biological aspects.

To accomplish the above objectives, a general ecological survey covering an area of 10 km radius was conducted. The locations were identified for phyto-sociological aspects to assess the current status.

FLORISTIC COMPOSITION IN CORE ZONE

The lease area is a non- forest, private land with scrub and thorny bushes. In the core zone, there are no trees.

FLORISTIC SCENARIO IN BUFFER ZONE AREA

The present report gives the review of published secondary data and the results of field sampling conducted during **October 2025 – December 2025** and there are no forest blocks in study area. The detailed ecological assessment of the study area has been carried out and are presented in below Table. Flora is assessed based on quadratic survey to calculate phytosociological parameters like density, frequency, dominance, relative density, relative frequency, relative dominance and importance value index.

Table 3.11 Assessment of trees

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	Citrus limon	Lemon	2	2	4	0.50	50.00	1	0.28	1.80	3.85	6.07	11.72
2	Ficus benghalensis	Krishna Fig, Krishna's	5	2	4	1.25	50.00	2.5	0.07	4.50	3.85	1.52	9.87
3	Thespesia lampas	Common mallow, kattupparuthi	2	4	4	0.50	100.00	0.5	0.28	1.80	7.69	6.07	15.57
4	Musa paradisiaca	Plantain, vazhai	10	4	4	2.50	100.00	2.5	0.50	9.01	7.69	10.79	27.50
5	Azadirachta indica	Veppai,	14	4	4	3.50	100.00	3.5	0.44	12.61	7.69	9.49	29.79
6	Psidium gujava	Guava	5	2	4	1.25	50.00	2.5	0.16	4.50	3.85	3.42	11.77
7	Syzygium cumini	Nagai	3	3	4	0.75	75.00	1	0.20	2.70	5.77	4.22	12.69
8	Adina cordifolia	Manjakadambu	1	1	4	0.25	25.00	1	0.14	0.90	1.92	2.98	5.80
9	Acacia chundra		1	1	4	0.25	25.00	1	0.18	0.90	1.92	3.89	6.71
10	Erythrina indica	Mullu murungai	1	1	4	0.25	25.00	1	0.15	0.90	1.92	3.12	5.94
11	Euphorbia antiquorum	Kalli	15	4	4	3.75	100.00	3.75	0.27	13.51	7.69	5.87	27.08
12	Ailanthus excelsa	Perumaram	7	2	4	1.75	50.00	3.5	0.21	6.31	3.85	4.56	14.71
13	Pongamia pinnata	Indian beech, pungam	4	2	4	1.00	50.00	2	0.15	3.60	3.85	3.27	10.72
14	Acacia leucophloea	Velvelam	10	4	4	2.50	100.00	2.5	0.26	9.01	7.69	5.48	22.18
15	Morinda tinctorial	Nuna	4	1	4	1.00	25.00	4	0.09	3.60	1.92	1.95	7.48
16	Dalbergia sissoo	nukkam totakatti	1	1	4	0.25	25.00	1	0.20	0.90	1.92	4.22	7.04

17	Erythrina variegata	Kalyana murungai	2	1	4	0.50	25.00	2	0.10	1.80	1.92	2.07	5.79
18	Borassus flabellifer	Palmyra palm	5	2	4	1.25	50.00	2.5	0.16	4.50	3.85	3.42	11.77
19	Thespesia lampas	Common mallow, kattupparuthi	1	1	4	0.25	25.00	1	0.11	0.90	1.92	2.44	5.26
20	Lannea coromandelica	Indian Ash Tree, Moya, Wodier	9	1	4	2.25	25.00	9	0.28	8.11	1.92	6.07	16.10
21	Samanea saman	Thoongumoonjj maram	3	3	4	0.75	75.00	1	0.22	2.70	5.77	4.74	13.21
22	Prosopis juliflora	Algaroba, Mesquite	5	3	4	1.25	75.00	1.67	0.10	4.50	5.77	2.19	12.46
23	Eucalyptus globulus	Blue gum	3	3	4	0.75	75.00	1	0.10	2.70	5.77	2.19	10.66
Total			111	52					4.65				

Table 3.12 Assessment of Shrubs

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	Unnichi	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	Stachytarphaeurticifolia	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	Woodfordiafruticosa	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	Vishapoundu	50	13	24	2.08	0.54	3.85	25.77	13.13	Not Assessed

Table 3.13 Assessment of herbs and grasses

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	Ruellia strepens	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	

Table 3.14 Evenness and species Richness by Margalef

Details	H	Hmax	Evenness	Species Richness (Margalef)
Trees	3.21	3.52	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.

Fauna in the study area

There is no specific Fauna found within ML area. The buffer zone Fauna in the area is studied by direct observation method. Secondary data collected from Forest department and the same is used in this report. People in the nearby locality were also consulted. The commonly found fauna in the area are given below.

Table 3.15 List of Fauna

S.No	Common name	Scientific name	Family	IUCN / WPA schedule
MAMMALS				
1	Indian Palm squirrel	Funambulus palmarum	Squirrel	IV
2	Hare	Lepus nigricollis	Leporids	IV
3	House rat	Rattus rattus	Murids	IV
4	Mannuli paambu	Eryx johani	Boidae	-
5	Indian Grey Mongoose	Herpestes edwardsii	Mongoose	IV
6	Field mouse	Rattus norvegicus	Murids	IV
7	Rusty spotted Cat	Felis rubiginosa	Felidae	IV
REPTILES				
1	Common Garden lizard	Calotes versicolor	Agamid lizards	IV
2	Rough tailed Sand boa	Gongylophis conicus	Boidae	IV
3	Indian Cobra	Naja naja	elapid snakes	II
4	Indian mud turtle	Lissemys punctate	Softshell turtles	IV
5	Common Green Snake	Passerita mycterizaris	Colubrid Snakes	IV
6	Common rat snake	Ptyas mucosus	Colubrid Snakes	II
BIRDS				
1	Grey Partridge	Francolinus pondicerianus	Phasianidae	IV
2	Indian Ring Dove	Streptopelia decaocto	Pigeons and doves	IV
3	Red collared dove	Streptopelia tranquebarica	Pigeons and doves	IV
4	Astur badius	Shikra	Accipitridae	IV

5	Black Drongo	Dicrurus macrocerus	Drongos	IV
6	House Sparrow	Passer domesticus	Sparrow	IV
7	Weaver bird	Ploceus Philippines	Ploceidae	IV
8	Rose Ringed Parakeet	Psittacula krameria	Parrots	IV
9	Little egret	Egretta garzetta	Heron	IV
10	Redvented BulBul	Pycnonotus cafer	Bulbul	IV
FISH				
1	Common carp	Cyprinus earpio	Minnows and Carps	IV
2	Tilapia	Oreochromis mossambicus	Cichlid	IV
3	Carplet	Amblypharyngodon Sp	Cyprinidae	IV
4	Trout	Chela sp	-	IV
5	Punctatus	Ophiocephalus	Snakehead	IV

The core zone of the area is government poramboke land, no forest land is involved in the project area. The proposed quarry area is covered by thorny bushes. There is no Wild Life Sanctuary or National Park within the study area of 10km. There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area. Hence this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.

3.3.7 LAND USE

Remote Sensing Satellite Data Used for the Study

For Land-use and land cover study, sensing satellite data of Geo EYE has been used as per Figure No. 1. A land use map showing 10 Km radial distance. The geographical coordinates of the project are by **Latitude:** 12°16'38.23"N to 12°16'45.53"N **Longitude:** 79°02'09.62"E to 79°02'14.38"E.

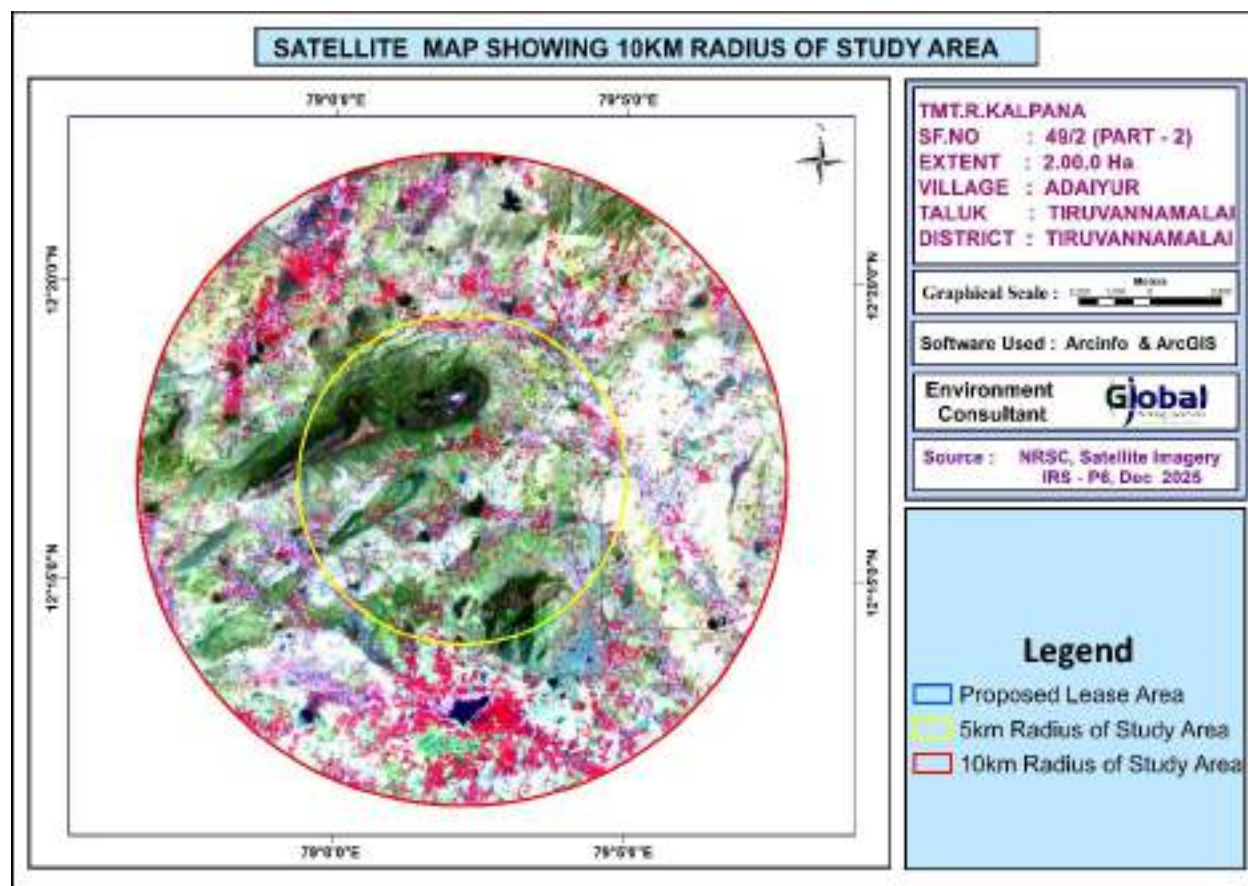


Figure No. 3.14: Remote Sensing Satellite Image

Selection of remote sensing satellite image (RSI) is on the availability of cloud free data and interpretability of predominant landuse and land cover (LULC) category. The examination of satellite data showed that the region is always covered by clouds with lesser percentage during summer due to cluster habitation. But rained crops are cultivated during southwest monsoon and hence a data acquired during first onset of precipitation is preferred so as to delineate crop and fallow land parcels of agricultural category. Delineation of scrub land is also possible since land with scrub could be easily distinguished from crop vegetation and separated. This may be an arduous task during monsoon since the entire area would be witnessed with sudden sprout of lush natural vegetation, mostly *prosopis*, with first onset of precipitation.

Methodology Adopted for the Land Use Study

Present study involves micro level analysis of landuse pattern showing 10 km radius and changes in landuse pattern using satellite data. This necessitates a careful analysis of satellite data adopting a well-defined methodology.

To cater the requirement, a preliminary assessment of terrain using digital analysis helping to infer relationship between terrain and landuse has been carried out. Such an approach provides lucid understanding of landuse units and enhances the knowledge on the landuse pattern assisting in impact assessment.

The knowledge base thus generated is used to delineate various landuse units while carrying out interpretation of the satellite image. The derived landuse information is transformed into a GIS based spatial database using geo-referencing techniques. Besides, a limited but well focused field investigation also carried out and coordinates of significant landuse units using handheld GPS (Global Positioning System) are gathered to be used as control points for geo-referencing. Interpreted landuse units are verified in the field to carryout necessary corrections wherever is required before preparing final landuse map.

Using the image elements such as color, tone, texture, size, shape and associated elements various landuse units are delineated following the categorization and nomenclature adopted for the national level landuse classification system as recommended by National Remote Sensing Centre (NRSC), Department of Space, Government of India. Some of the landuse units that are identified in the study area are listed in Table No. 3.15 given below.

Field 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.

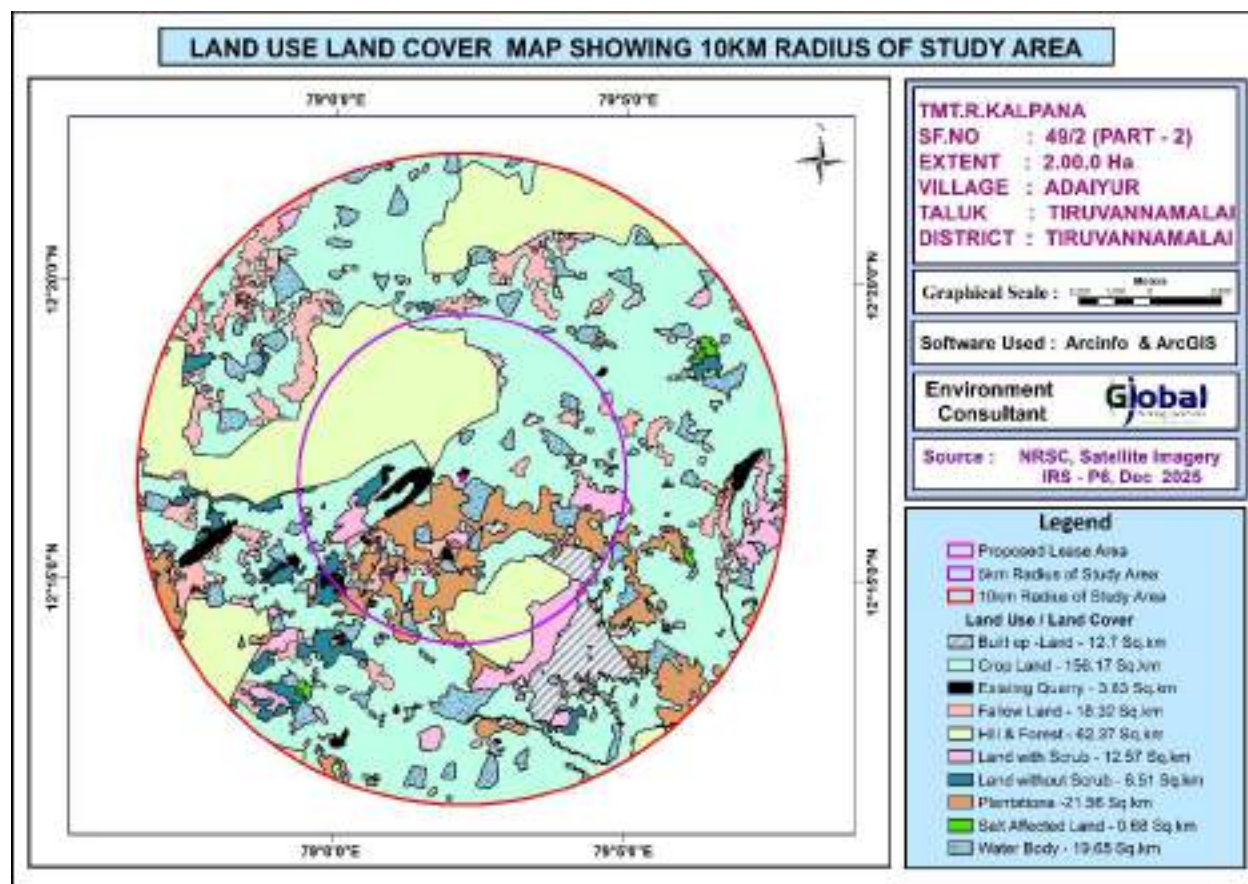
Table No.3.16: Major Land use Units of the Study Area

Sr.No	1 st level classification	2 nd level classification
1	Built-Up Or Habitation	Residential
		Commercial / Industrial
2	Agriculture	Crop / Fallow Land
		Plantation
3	Water Bodies	Reservoir / Lake / Pond
		River
4	Vegetation Cover	Scrub
		Open Vegetation
		Close Vegetation
		Mangroves
5	Waste Land	Open Without Scrub
		Open With Scrub
6	Others	Mudflow
		Salt Pan
		Brick Manufacturing

Land Use Pattern of 10 km Radial Buffer Area of Project Site

A supervised classification (Digital Interpretation) technique has been adopted for land use classification based on the NRSC Classification Level II for the preparation of land use mapping. The satellite images from NRSC satellite imagery IRS-P6 December 2024 as well as the projection UTM (Universal Traverse Mercator) and datum WGS1984 (World Geodetic System), Northern Hemisphere. The main objective of this section is to provide a baseline status of the study area covering 10 km radius around the mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future. The land use map of the study area is given in Figure 3.21

FIG 3.15 LAND USE/LAND COVER MAP OF THE STUDY AREA



Land Use / Land Cover Classification classified into first level classification and second level classification and major land use/land cover classes were demarcated in the study area following Level II classification. A thematic map of 1:50,000 scale was generated incorporating these classified categories considering the area of the project.

Table 3.17 Land use pattern of the Study area of 10 km radius

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1	Built-up land	12.7	4.04
2	Crop land	156.17	49.71
3	Existing quarry	3.63	1.15
4	Fallow land	18.32	5.83
5	Hill and Forest	62.37	19.85
6	Land with scrub	12.57	4

7	Land without scrub	6.51	2.07
8	Plantations	21.56	6.86
9	Water bodies	19.65	6.25
10	Salt Affected land	0.68	0.21
	Total Area	314.16	100

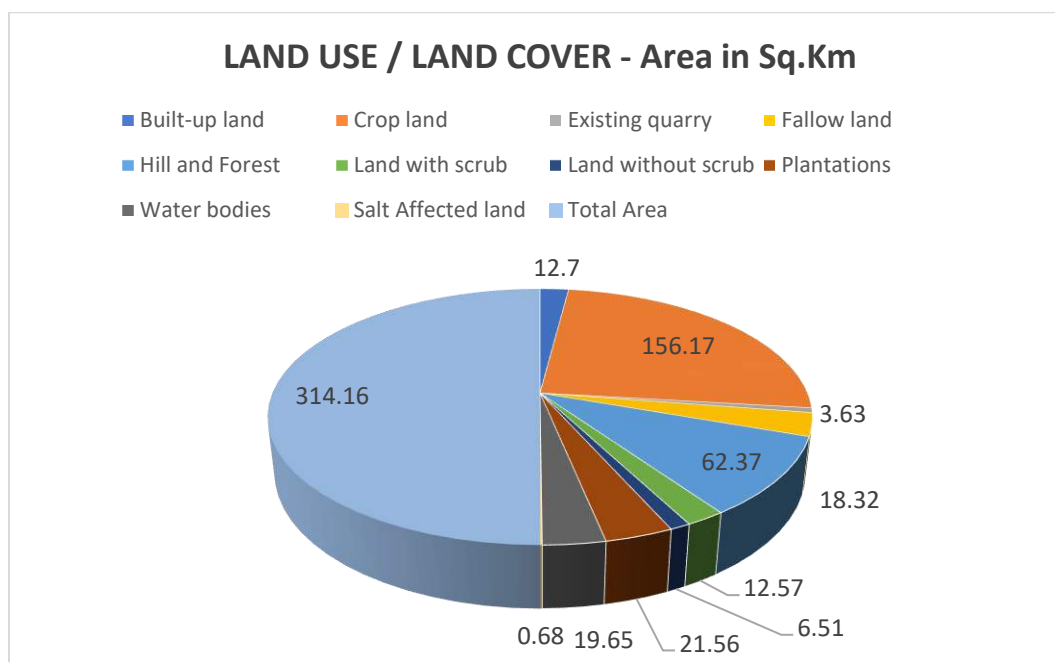


FIG 3.16 LAND USE/LAND COVER AREA

3.3.8 SOCIOECONOMIC ENVIRONMENT

The socio-economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used. The following data area collected from secondary data:

- Demographic pattern.
- Health pattern
- Occupational structure.

Adaiyur is a large village located in Tiruvannamalai Taluka of Tiruvannamalai district,

Tamil Nadu with total 934 families residing. The Adaiyur village has population of 4236 of which 2170 are males while 2066 are females as per Population Census 2011.

In Adaiyur village population of children with age 0-6 is 528 which makes up 12.46 % of total population of village. Average Sex Ratio of Adaiyur village is 952 which is lower than Tamil Nadu state average of 996. Child Sex Ratio for the Adaiyur as per census is 872, lower than Tamil Nadu average of 943.

Adaiyur village has higher literacy rate compared to Tamil Nadu. In 2011, literacy rate of Adaiyur village was 80.12 % compared to 80.09 % of Tamil Nadu. In Adaiyur Male literacy stands at 87.13 % while female literacy rate was 72.86 %.

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

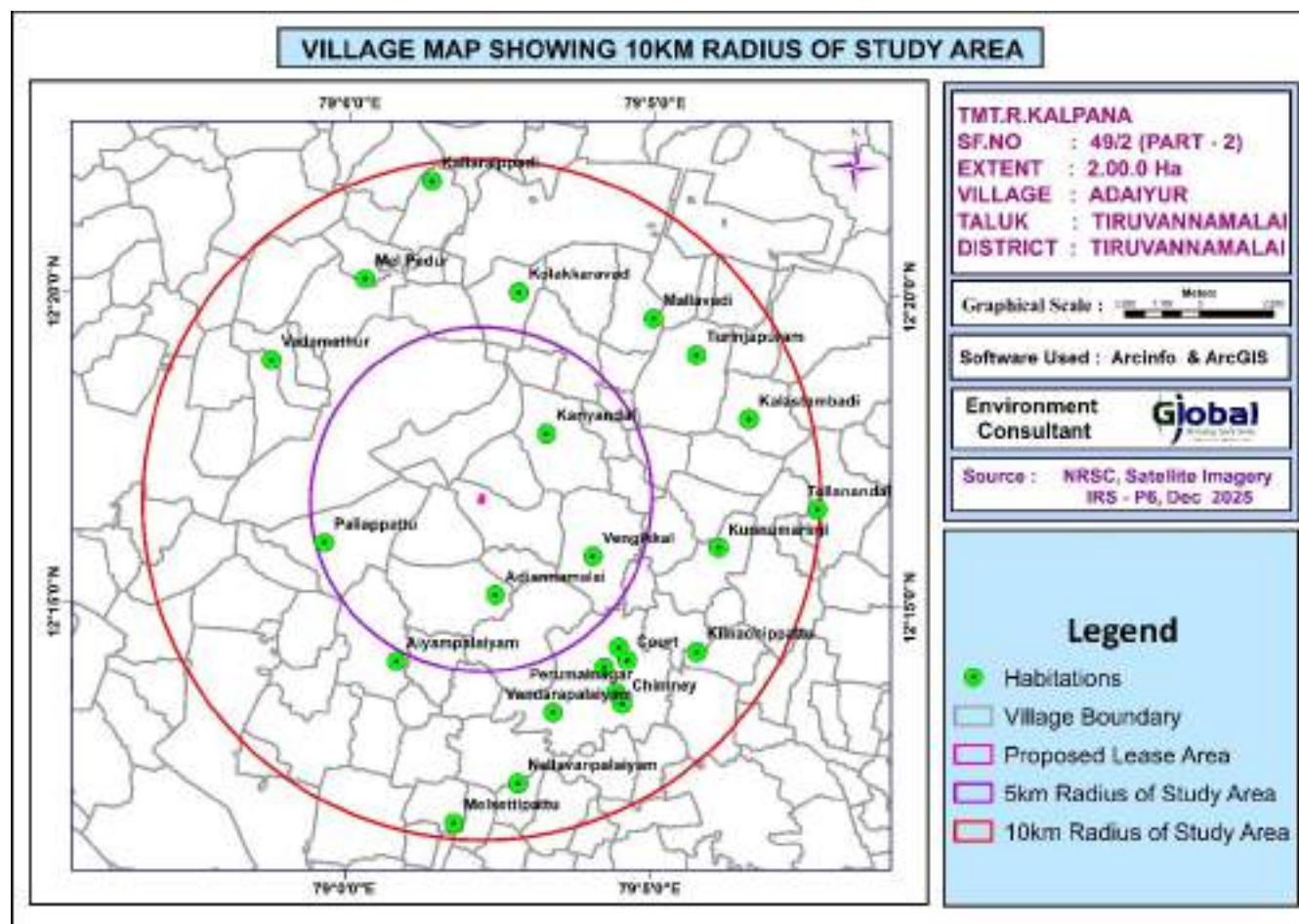
Tiruvannamalai District

The total population of this district 2464875 comprising 1235889 Men and 1228986 women as per 2011 census. The urban population is 494945 constituting 20 % of the total Population, the remaining 80% ie.1969930 is rural population. The density of the population is 399 per sq.km. The total literate among male are 909803 and that of female are 717010.

3.11.1 DETAILS OF VILLAGES

The profile of the villages located in the study area is given in Fig 3.17 below.

FIG 3.17 VILLAGE MAP OF THE STUDY AREA



DETAILS OF VILLAGES

The project is located in Tiruvannamalai Taluk, Tiruvannamalai District. From the secondary data, study area villages were observed in the study area of 10km radius. List of villages are given below.

Table 3.18 Village Details in study area				
S.No.	Village/Town Name	Radius	Taluk Name	District Name
1	Kariyandal	0-5 km	Tiruvannamalai	Tiruvannamalai
2	Vengikkal			
3	Adiannamalai			
4	Aiyampalaiyam			
5	Paliappattu			
7	Kallaraippadi	5-10 km		
8	Mel Padur			
9	Kolakkaravad			

10	Mallavadi			
11	Turinjapuram			
12	Kalastambadi			
13	Tellanandal			
14	Kunnumarinji			
15	Kilnachippattu			
16	Court			
17	Chimney			
18	Perumalnagar			
19	Vandarapalaiyam			
20	Nallavanpalaiyam			
21	Melsettipattu			
22	Vadamathur			

Table 3.19 - Population profile of the Tiruvannamalai District

Population profile of the study area		
Particulars	No of Population	Percentage (%)
A. Population break-up by Gender		
Male Population	1235889	50.14
Female Population	1228986	49.85
Total	2464875	100
B. Population break-up by Caste		
Scheduled Caste	282615	49.99
Scheduled Tribes	282714	50.00
Total	565329	100
C. Literacy Level		
Total Literate Male	909803	55.92
Total Literate Female	717010	44.08
Total	1626813	100
D. Occupational structure		
Main workers	829944	77.94
Marginal workers	234839	22.06
Total	565,223	100

From the above table, it could be noted that the total population of the district was 2464875 out of which male and female accounted 50.12 and 49.87 per cent respectively. Further it could be seen that most of the workers were dependent on agriculture (77.94 per cent). The marginal workers were found to be in allied sectors only

The district population is 2,464,875 in 2011 as against 2,186,125 in 2001. The decadal growth rate of the population in the district is 12.75 percent. The density of the population in the district is 473 persons per sq.km in 2011, as against 424 in 2001 which is due to the increased population. The urban population is 494945 constituting 20 % of the total Population, the remaining 80% ie.1969930 is rural population. SC population is 565329, ST Population is 90954.

Infrastructure facilities in the study area

Education

Table 3.20 Educational infrastructure -10 km radius from proposed mine lease		
S. No.	Particulars	Available in village (Nos)
1	Govt. Primary School	21
2	Govt. Middle School	14
3	Govt. Secondary School	6
4	Govt. Senior Secondary School	2
5	Govt. Arts and Science Degree College	0
6	Govt. Engineering College	0
7	Govt. Medicine College	1
8	Govt. Management Institute	0
9	Govt. Polytechnic	0
10	Govt. Vocational Training School/ITI	0

Healthcare

In the study area, the following facilities are available.

Table 3.21 Medical Infrastructure-10 km radius from proposed mine lease		
S.No.	Particulars	Available in village (Nos)
1	Community Health Centre	0
2	Primary Health Centre	2
3	Primary Health Sub Centre	9
4	Maternity And Child Welfare Centre	2
5	TB Clinic	2
6	Hospital Allopathic	0
7	Veterinary Hospital	4

Other Infrastructure

The other infrastructure facilities available are given below.

Table 3.22 Other Infrastructure-10 km radius from proposed mine lease		
S.No.	Particulars	Available in village
1	Tap Water-Treated	22

2	Covered Well	15
3	Hand Pump	14
4	Tube Wells/Borehole	20
5	Post office	2
6	Public bus services	15
7	Commercial Bank	3
8	Cooperative bank	2

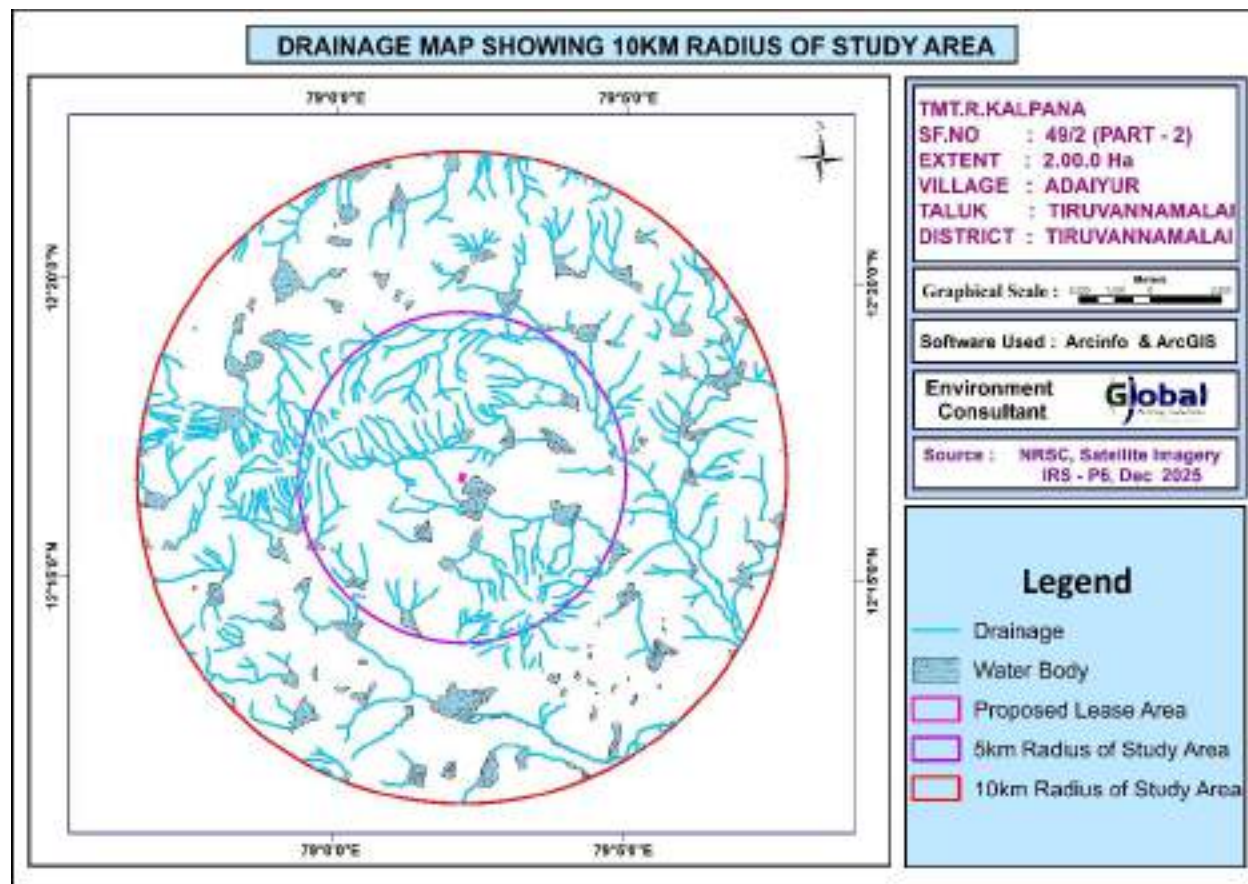
3.3.9 HYDROGEOLOGY OF THE STUDY AREA

There is Odai is located at a distance of 430m in Southwest direction, Nochimalai Tank- 460m (SE), Kosalai Tank -1.64 km SE, Devanambattu Tank -2.5 Km S of lease area. The hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

HYDROGEOLOGICAL STUDY

To assess the hydrogeological condition of the surrounding proposed mine lease area. The study area is located in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State is considered to understand the nature of the general hydrogeological conditions of the surrounding proposed mine lease area.

FIGURE 3.18 10 KILOMETER RADIUS OF THE DRAINAGE MAP



PHYSIOGRAPHY AND DRAINAGE

Proposed Mine lease area is dry Government poramboke land with majority of the area is observed with hard rock formation. There is no any seasonal or perennial Odai within the M.L area. The drainage pattern of the region is plane to sub-dendritic.

Drainage: The drainage pattern study reveals that from the proposed mine lease area with around 1 Km radius and 10 Km study observed in Figure 3.26. There is Amaravathi River is located at a distance of 6.2 km in Southeast direction of lease area of the proposed site.

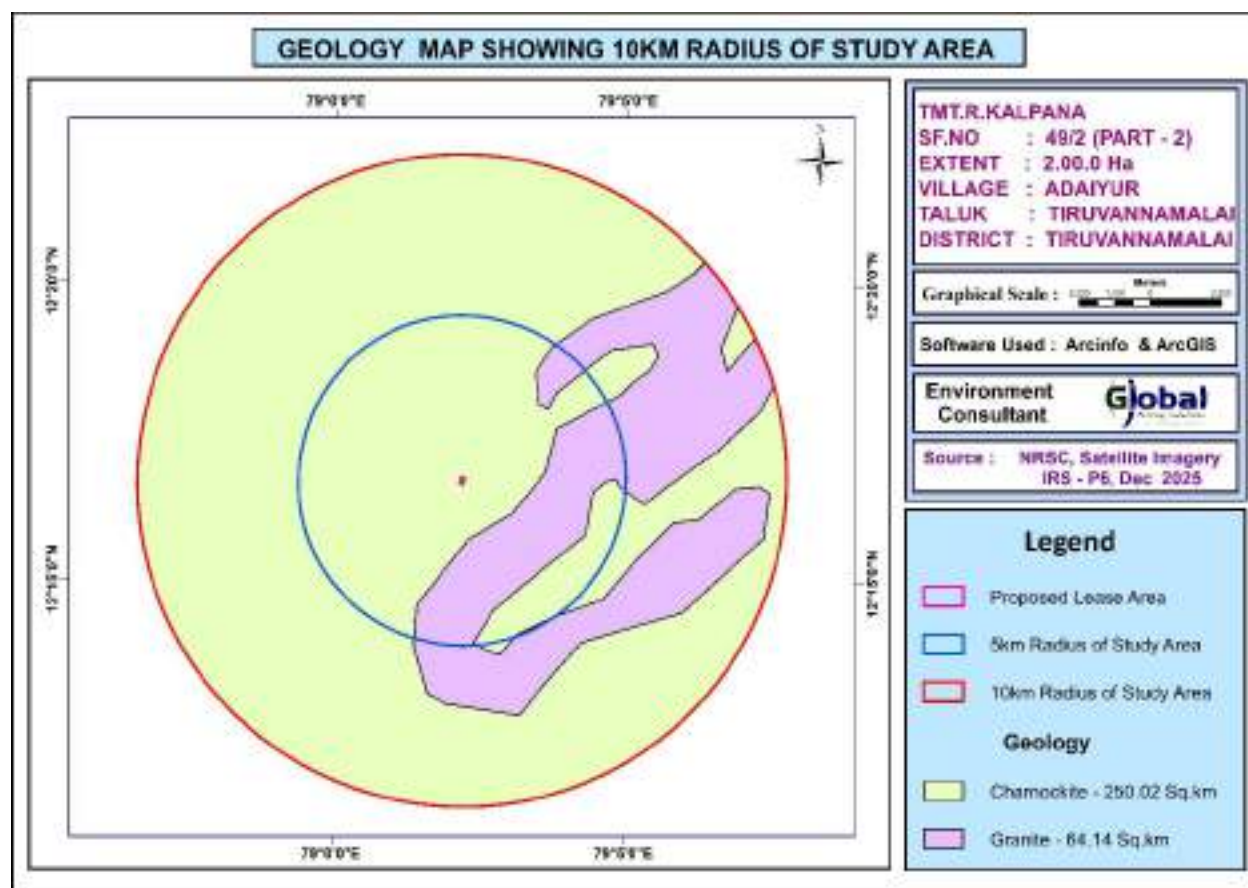
GEOLOGY, GEOMORPHOLOGY AND SOIL

Geology:

The regional geology of the study area is shown below Figure 3.19. The type of rock formation in the core and buffer zone is Charnockite and Granite. The geology of the study area is detailed below.

Sl.No.	Geological description	Area in sq.km	Area in percentage
1	Charnockite	250.02	79.58
2	Granite	64.14	20.41
Total		314.16	100.00

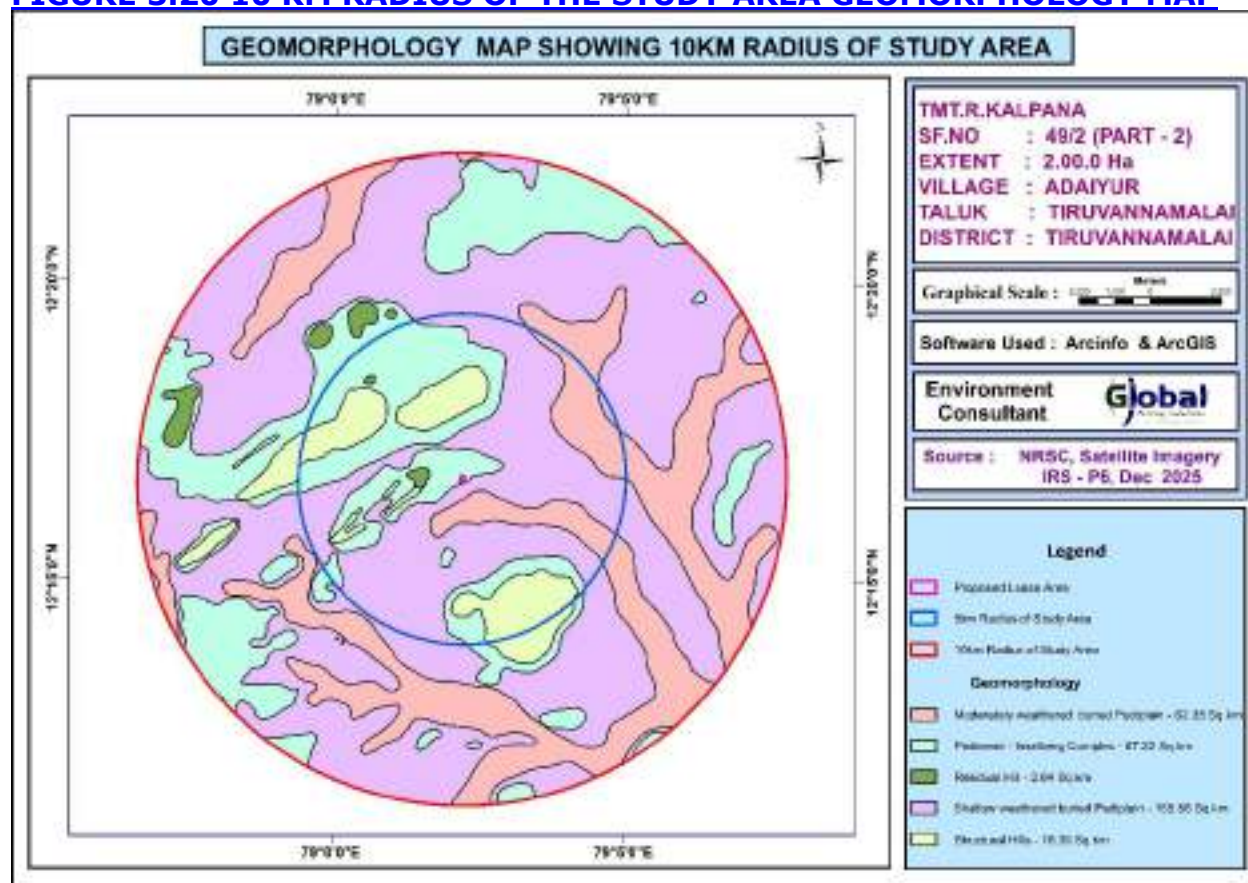
FIGURE 3.19 10 KILOMETER RADIUS OF THE GEOLOGY MAP



Geomorphology: Predominantly the buffer zone is dominated by Shallow weathered buried pediplain as detailed below. The geomorphology of the study area is given in Figure 3.20.

Sl.No.	Geomorphological description	Area in Sq.Km	Area in Percentage
1	Moderately weathered buried pediplain	62.35	19.84
2	Pediment- Inselberg Complex	67.22	21.39
3	Residual hill	2.64	0.84
4	Shallow weathered buried pediplain	165.56	52.66
5	Structural hills	16.39	5.22
Total		314.16	100.00

FIGURE 3.20 10 KM RADIUS OF THE STUDY AREA GEOMORPHOLOGY MAP

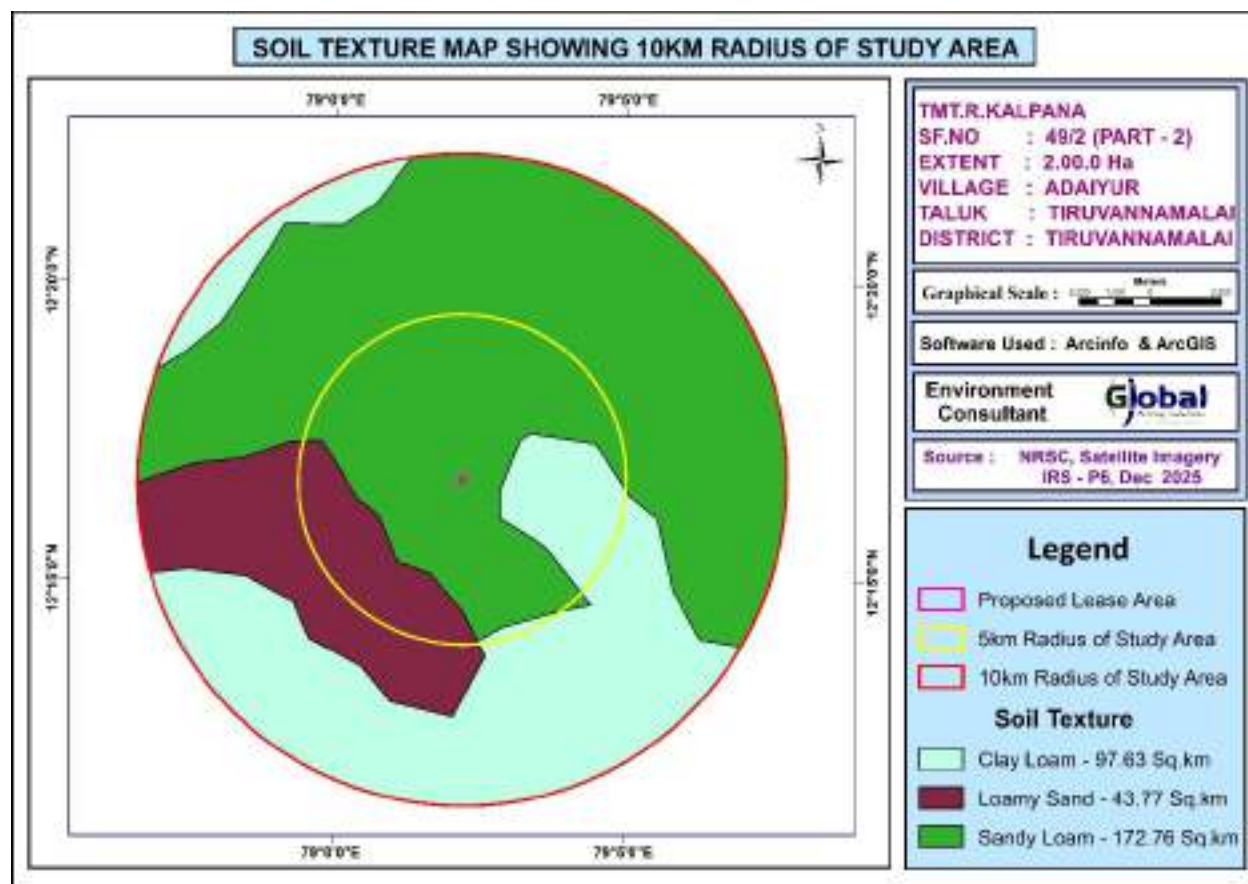


Soil: The study area is mainly dominated by sandy loam category. Soil map of Core & Buffer Zone map is given in Figure 3.21. Soil map of the study area is detailed below.

Sl.No.	Soil drainage pattern	Area in Sq.km
1	Clay loam	97.63

2	Loamy sand	43.77
3	Sandy loam	172.76

FIGURE 3.21 10 KM RADIUS OF THE STUDY AREA SOIL TYPE MAP



FIELD INVESTIGATION

There is Odai is located at a distance of 430m in Southwest direction, Nochimalai Tank- 460m (SE), Kosalai Tank -1.64 km SE, Devanambattu Tank -2.5 Km S of lease area. The water is temporarily found only during the rainy season.

In this representation in the two seasons, the water level substantially gets fall-down in the non-monsoon season, because of the rainfall impact and it extended up to the Monsoon season. Some of the wells water level is shallow depth in both seasons.

These dug wells are located nearby water bodies. So, clearly shows that surface water is impact in these wells.

The shallow depth of groundwater level in the monsoon season. It is interesting to note that the water level is increased because of heavy rainfall during the southwest and northeast monsoon. The groundwater table level is substantially increased in the monsoon season.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The study has revealed that potential fractures are encountered at deeper levels. The water in the wells are available mainly monsoon and it reduces during non-monsoon demanding the groundwater. Bore wells are deep and it reflects that the yield is only better at deeper water levels.

Rain water collected in the tanks in the region acts as a good source of water during monsoon season. In order to increase the recharge, tanks, and percolation ponds may be provided with the recharge wells/recharge shafts penetrating this impervious layer to make it more effective in recharging the aquifer.

CHAPTER 4

ANTICIPATED ENVIRONMENTAL IMPACTS AND

MITIGATION MEASURES

INTRODUCTION

This chapter deals with the various anticipated environmental impacts and mitigation measures of the proposed mining activity. The proposed method of mining is Opencast Mechanized and the quarry operation involves Shallow Jack Hammer Drilling, Blasting, Excavation, Formation of benches, Loading and Transportation of minerals. The above activities may affect the surrounding environment like removal of rock mass, Loss of flora and fauna of the area, surface water discharge, change in air and water quality, etc., If adequate measures are not taken for the proposed operations, it will cause the environmental degradation of the area and it will lead to affect to the ecosystem of the surrounding environment.

In order to maintain the existing environmental scenario of the proposed mine lease area it is mandatorily required to assess the present ecology and environment of the proposed mine lease area and buffer area of the project before starting mining operations. The various environmental impacts which are identified by the proposed quarrying activities have been discussed below and its subsequent paragraphs.

- ❖ Land Environment
- ❖ Soil Environment
- ❖ Water Environment
- ❖ Air Environment
- ❖ Noise Environment
- ❖ Biological Environment
- ❖ Socio Economic Environment

4.1 DETAILS OF INVESTIGATED ENVIRONMENTAL IMPACTS DUE TO PROJECT LOCATION POSSIBLE ACCIDENTS, PROJECT DESIGN, PROJECT CONSTRUCTION, REGULAR OPERATIONS FINAL DECOMMISSIONING OR REHABILITATION OF A COMPLETE PROJECT.

This is a proposed Rough Stone Quarry of S.F.No. 49/2 (Part-2) over an extent of 2.00.0 Ha in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State. The method of mining is Opencast mechanized with a bench width and height of 5m. It is proposed to excavate to 6,39,710.50Ts/2,32,622m³ of Rough Stone & 2,170Ts/1085 m³ of Topsoil for the depth of 36m (6m AGL & 30m BGL) for the proposed mining plan for the period of five years. There is no stream/odai within the mine lease area.

The main anticipated impact on the Land Environment due to quarrying operation is change in Landscape, change in Land – use Pattern.

The entire mine lease area is Government poramboke land. The project area of 2.00.0 Ha boundary barrier except in eastern & western direction. It is proposed to be altered by effective quarrying operation such as excavation (1.69.0 Ha), Infrastructure (0.01.0), Road (0.01.0 Ha) and green belt will be developed in the safety zone of 0.29.0 Ha. The ultimate depth of quarrying is proposed with maximum depth of 36m (6m AGL & 30m BGL) and will not intersect the ground water table.

4.2 MEASURES FOR MINIMIZING AND /OR OFFSETTING ADVERSE IMPACTS

IDENTIFIED

Aspect	Impact	Mitigation measures																																																	
Topography	elevated topography covered by covered by Topsoil formation. The massive Charnockite formation is noticed below 1m (Avg) Topsoil and sloping towards south side of the area. Quarrying activity will lead to change in geological setting of the area i.e., Due to the quarrying activity in the mine lease area will leads to affect the aesthetic view on the environment. Further, due to the movement of heavy vehicles in and around the mine lease area will leads to affect the surrounding agricultural lands, ecology and biodiversity, human habitations due to the emissions from vehicles like SO₂, NO_x, PM₁₀, PM_{2.5}, etc., The existing land use pattern is given as under. <table><tr><th>Land Use</th><th>Present Area (Hect)</th><th>Area in use during the quarrying period (Hect)</th></tr><tr><td>Quarrying Pit</td><td>0.85.0</td><td>1.69.0</td></tr><tr><td>Infrastructure</td><td>Nil</td><td>0.01.0</td></tr><tr><td>Roads</td><td>0.01.0</td><td>0.01.0</td></tr><tr><td>Green Belt</td><td>Nil</td><td>0.29.0</td></tr><tr><td>Unutilized</td><td>1.14.0</td><td>Nil</td></tr><tr><td>Total</td><td>2.00.0</td><td>2.00.0</td></tr></table>	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)	Quarrying Pit	0.85.0	1.69.0	Infrastructure	Nil	0.01.0	Roads	0.01.0	0.01.0	Green Belt	Nil	0.29.0	Unutilized	1.14.0	Nil	Total	2.00.0	2.00.0	The major impact due to this project on land environment is the change in land use. Mining activity will be carried out upto a depth of 36m (6m AGL & 30m BGL). At the end of mining period, the quarried pit will act as a water reservoir to store the rain water. Land Use at the end of mine will be as follows. <table><tr><th>Land Use</th><th>Area in use during the quarrying period (Hect)</th></tr><tr><td>Area left for water body</td><td>1.69.0</td></tr><tr><td>Green Belt</td><td>0.29.0</td></tr><tr><td>Remaining area</td><td>0.02.00</td></tr><tr><td>Total</td><td>2.00.0</td></tr></table> At the mine closure stage 1.69.0 Ha of lease area will be left as rain water harvesting pond 0.29.0 Ha will be developed with green belt. Greenbelt shall be developed around the mine lease area and the details has been given below. <table><tr><th>Year</th><th>Species</th><th>No. of trees</th><th>Spacing</th><th>Survival</th></tr><tr><td>I</td><td rowspan="5">Pungai, Vagai, Vembu, Manjal konrai, Naval,</td><td>290</td><td rowspan="5">3m x 3m</td><td rowspan="5">80%</td></tr><tr><td>II</td><td>-</td></tr><tr><td>III</td><td>-</td></tr><tr><td>IV</td><td>-</td></tr><tr><td>V</td><td>-</td></tr></table>	Land Use	Area in use during the quarrying period (Hect)	Area left for water body	1.69.0	Green Belt	0.29.0	Remaining area	0.02.00	Total	2.00.0	Year	Species	No. of trees	Spacing	Survival	I	Pungai, Vagai, Vembu, Manjal konrai, Naval,	290	3m x 3m	80%	II	-	III	-	IV	-	V	-
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IV		-																																																	
V		-																																																	

	The ultimate pit dimension of the mine lease area is given below.	<table><tr><td></td><td>Puvarasu, etc</td><td></td><td></td><td></td></tr><tr><td colspan="2">Total</td><td>290</td><td></td><td></td></tr></table>						Puvarasu, etc				Total		290			As per SEAC norms, PP have to plant 1000 Saplings per Ha. The safety zone, covering an area of 0.05.5 hectares, will b maintained as a green belt and planted with local species Plantation within Safety Zone (i.e. 0.29.0 Ha) – 290 nos Due to the thick vegetation around the mine lease area and sprinkling of water around the haul roads the dust emissions arise from the vehicles will be controlled. At the end of mining period, fencing will be provided around the mine lease area to arrest the entry of public/cattle to the mining area. The Rough stone are proposed to quarry 5m bench height and 5m width with 45^o slope and with conventional opencast Mechanized method. As per the approved mining plan a safety distance of 10m shall be provided. There is no overburden anticipated during the entire Rough stone quarrying operation. The excavated Rough stone will be directly loaded into tipper to the needy crusher/other buyers.		
			Puvarasu, etc																
		Total		290															
		<table><tr><th colspan="5">Ultimate Pit dimension at the end of Mining plan Period</th></tr><tr><th>Pit No.</th><th>Length (max) (m)</th><th>Width (Avg) (m)</th><th colspan="2">Depth (max) (m)</th></tr><tr><td>I</td><td>196</td><td>86</td><td colspan="2">36m (6m above ground level and 30m below ground level)</td></tr></table>					Ultimate Pit dimension at the end of Mining plan Period					Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)			I	196
Ultimate Pit dimension at the end of Mining plan Period																			
Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)																
I	196	86	36m (6m above ground level and 30m below ground level)																
If mining is not done systematically it will leads to the dumping failure in the mining area																			
Drainage	Mine drainage is surface water or groundwater that drains from an active or abandoned mine. One of the adverse impact of mine drainage is it will contaminate the ground water.	As per the approved mining plan the ultimate pit limit is 36m (6m above ground level 30m below ground level). The ground water table is reported as 70 m. In the proposed mining plan only 36m (6m above ground level 30m below ground level) 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.																	
Soil Quality and Agriculture	In monsoon seasons due to the excavation of minerals soil erosion and sediment deposition will occur in the nearby water bodies.	It is proposed to quarry upto a depth of 36m (6m above ground level 30m below ground level). The ground water table is reported as 70 m. So, the mining activity will not affect the																	

		ground water. To prevent the soil erosion during monsoon season, garland drain will be constructed with silt traps.
Visual impact on surrounding environment	Quarrying activities and rock extraction generally cause several environmental effects on the surrounding areas. The alteration of landscape due to activities like excavation, drilling or blasting, in particular, often generates a visual impact on the receptors set in the surroundings. Among these effects, the shape, extent, or chromatic contrast of the mining surface with the original land form may represent a huge loss of appeal for the growth of new urban settlements.	The reclamation of the post mined quarry surface is aimed at restoring the ecological balance taking into account geological parameters but also local flora and climate. Further the ultimate depth of mining is 36m (6m above ground level 30m below ground level). In the post mining stage, the quarried out pit will be used for rainwater harvesting.

4.2.1 LAND ENVIRONMENT

ANTICIPATED IMPACT

The main anticipated impact on the Land Environment due to quarrying operation is change in Landscape, change in Land – use Pattern.

The entire mine lease area of 2.00.0 Ha. is Government poramboke Land. The project area of 2.00.0 Ha is proposed to be altered by effective quarrying operation such as excavation (1.69.0 Ha), Infrastructure (0.01 Ha), Road (0.01 Ha) and greenbelt (0.29.0 Ha). The ultimate depth of quarrying is proposed by formation of 1 pit with maximum depth of 36m (6m above ground level 30m below ground level) and will not intersect the ground water table.

- Change in topography of the mine lease area will change at the end of the life of the mine.
- At the end of life of mine, the excavated mine pit / void of 1.69.0 Ha. will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt (0.29.0 Ha.) will be developed along the safety barrier and top benches and 0.02 ha are approach road and Infrastructure.
- Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles.
- Degradation of the aesthetic environment of the core zone due to quarrying.
- Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season.
- Siltation of water course due to wash off from the exposed working area.
- 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

MITIGATION MEASURES

- In the rough stone and gravel quarrying operation, land degradation is minimal. After completion of the quarrying operation, the land will be allowed to collect rainwater, this rough stone does not produce any toxic effluents in the form of solids, liquids, or gases.
- It is a simple quarrying operation where 100% of stones will be removed systematically, according to the approved Mining Plan.
- The periphery of the mining lease area will be converted to a greenbelt to prevent Noise and sound propagation to the nearby lands.
- Entire mined out area will be properly fenced to prevent inadvertent entry of human and animals.

4.2.2 SOIL ENVIRONMENT

ANTICIPATED IMPACT

Mining activities often disrupt the existing environment as they involve disturbing the untouched earth materials. The overburden in the form of top soil generated will be utilized for afforestation purpose, the surface consists of top soil formation followed by rough stone which is proposed to excavate completely during the quarrying operation. Erosion of top layer (top soil), extracted fine material can result in substantial sediment loading to surface waters and drainage ways. During rainy season surface run off may cause sedimentation in low lying areas.

MITIGATION MEASURES FOR SOIL EROSION AND SOIL CONSERVATION

- Runoff water will be collected in bottom of the quarry and used for plantation and dust suppression during dry season. no run off water will be discharged beyond lease area.
- Wet drilling and haul road water sprinkling will be carried out to minimise air born dust at source level, which may cause soil pollution due to sedimentation.
- Garland drains will be constructed around the project area with silt traps to control the soil erosion during rainy seasons.

- Greenbelt development (0.29.0 Ha.) all along the periphery of the project area (i.e., 7.5m, 10 m safety barrier) will ensure binding strength and minimizes soil erosion.
- Soil sampling will be carried out in the core zone for every season to ensure the soil quality is not affected due to the quarrying activities

4.2.3 SOLID WASTE GENERATION AND MANAGEMENT

The plastic waste generation is very negligible and it will be collected from the source level in specific dustbin and disposed through the municipal bins.

- Identification of solid waste generations
- Providing dustbins to collect with different color coding
- Creating awareness among the employees
- Developing common storage yards
- Disposal to the nearby municipal yards
- Record keeping
- Review once in quarter

4.2.4 WATER ENVIRONMENT

Impact on Surface Water Resources

There is no seasonal or Odai within the M.L area. The drainage pattern of the region is plane to sub-dendritic. Surface run-off water of the M.L. area is drained through proposed drainage and collected in the bottom of the quarry and collected water will be used for same quarry operation as such for plantation & dust suppression.

There is Odai is located at a distance of 430m in Southwest direction, Nochimalai Tank- 460m (SE), Kosalai Tank -1.64 km SE, Devanambattu Tank -2.5 Km S of lease area

Water table is found at a depth of 70m.

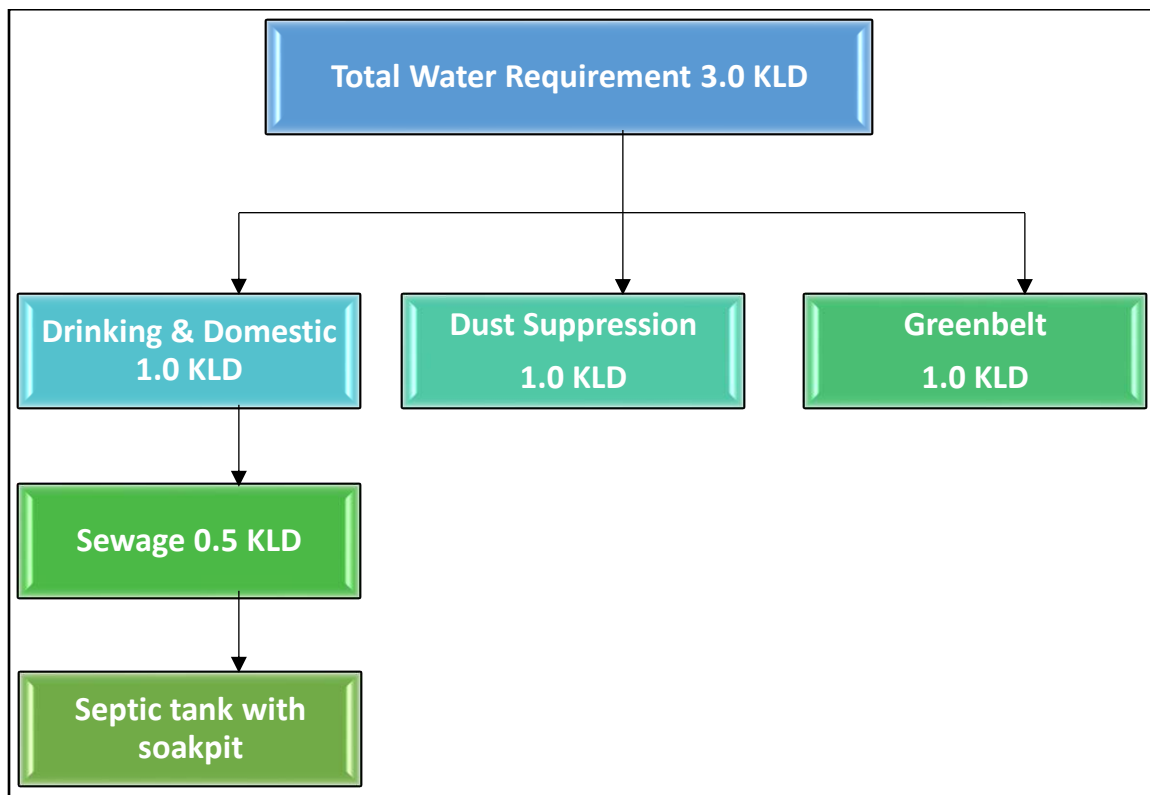
Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made into these water bodies, there is no major impact. The project proponent will restrict the mining

operation only within the lease and no other work will be carried out near the canal or any area outside the mining lease.

Impact due to Water use in Mines

In the proposed mines water will be mainly used for domestic purpose, dust suppression & plantation. Total water requirement for the project is 3.0KLD which will be sourced from outside agencies. Negligible sewage of 0.5KLD will be generated, for which a septic tank with soak pit will be set up. The water balance diagram is given below.

FIG 4.1 WATER BALANCE DIAGRAM



Impact on Ground Water

The mining activity is not likely to intersect ground water as the ground water table occurs at a depth of 70 m. The mining will go up to the maximum depth of 36m (6m above ground level 30m below ground level) So, there will be no chance of

intersecting the ground water table by the mining activity. So, the impact of mining on the ground water is not envisaged.

Mitigation measures

- Entire lease area will be provided with proper garland drains.
- Check wears will be provided to prevent solids from wash off.
- Construction of garland drains around freshly excavated so that flow of water with loose material is prevented.
- The mine water will be passed through the natural slopes and valleys and gets accumulated in the settling tank (Bottom pit)

Ground water environment in buffer zone

The scenario of ground water in Tiruvannamalai Districts is given below.

Ground Water Level Status in Tiruvannamalai District							
S. No.	Assessment Unit (Firka)	Net Annual Ground water availability	Existing gross ground water consumption for irrigation	Existing gross ground water consumption for domestic and industrial water supply	Existing gross ground water consumption for all uses	Stage of ground water development	Category
1	Tiruvannamalai	111,687.47	99,684.23	3,278.01	102,962.24	92	Over Exploited

Source: nwm.gov.in

RAINWATER HARVESTING PLAN

Since the lease proximate areas are with less water potential and the rainwater is the major source for replenishment of ground water, effective rainwater harvesting and other water augmentation measures are proposed in this project.

- Development of garland drain around the quarry connected to settling tank.
- Cleaning of drain periodically to prevent siltation
- The supernatant clear water from the settling pond will drain into the nearby channel on the eastern side of the lease.

- Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.

The average rain fall in the in the region of the project area is 800-900 mm per annum during Southwest and Northeast Monsoons. Taking into consideration of 0.35 as runoff co-efficient for mining area, the total quantity of rain water can be harvested per annum from the area has been tabulated as below.

Table 4.1 – Rainwater Harvesting Plan

S.NO	Rainwater Harvesting Area	Area in Sq.m	Average annual rainfall	Volume of harvestable quantity (Cum) of rain water per annum
1	Quarry Area	20000	0.9	6300
Total Harvested Rainfall				6300

Total surface water runoff is 6300 Cum per Annum. 10% of this amount will be evaporated and rest 5670 m³ will be recharged in the rain water harvesting pit.

One sump with capacity 6000 cu.m will be provided to harvest the rain water. The rain water stored in the pond will be utilized for plantation, dust suppression activities. The capacity of Rain water harvesting post will be sufficient to arrest the surface runoff from the lease area considering the highest amount of rain fall.

4.2.4 VEGETATIONVEGETATION IN THE CORE ZONE

The mine lease area is devoid of major plantation. Shrubs and bushes are majorly found within the lease area. The proponent has planned to develop green belt in an area of 0.29.0 Ha. Trees like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indica will be planted around the mine lease area. Spacing will be 3m x 3m. As per SEAC norms, PP have to plant 1000 Saplings per Ha

The safety zone, covering an area of 0.29.0 hectares, will be maintained as a green belt and planted with local species

Plantation within Safety Zone (i.e. 0.29.0 Ha) – 290 nos

FAUNA

There are no sanctuaries/national parks in the buffer zone of 10km study area. The commonly found fauna in the buffer zone are given in Chapter III. During mining activity the impacts and mitigation measures for Fauna are given in below table.

Table 4.2 Impacts and mitigation measures for Fauna		
S.No.	Impact	Mitigation measure
1	Fauna is affected 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.
2	Dust generation due to mining activities	To reduce dust generation, mist sprayers will be used. During transportation, the material will be covered with tarpaulin. Water sprinkling will be done to reduce generation of pollutants.
3	Change in land use of the lease area	After the mine closure stage, the mine pit will be left as rain water collecting tank, which can attract bird population in the nearby areas.
4	Accidental falling of animals	To prevent entry of animals, the mine lease surrounding area will be properly fenced with barbed wire.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL COMPONENTS.

4.3.1 IMPACT DUE TO MINING OPERATION

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.

4.3.2 IMPACT ON AIR ENVIRONMENT

The impacts on air environment from a mining activity depend on various factors like production capacity, machinery involved, operations and maintenance of various equipments 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.

4.3.3 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 equipments 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.

4.3.4 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 is 232622 m³ of Rough Stone of Rough stone upto a depth of 36m (6m above ground level and 30m below ground level) for the period of five years.

Proposed quarries production Tmt.R.Kalpana (232622 m³ of Rough Stone 2170 m³ top soil), Thiru.M.Ayyakannu (1080980 m³ of Rough Stone), Thiru.M.Vijay Ganesh (21150 m³ of Rough Stone), R.Arasappan (25985 m³ of Rough Stone).

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

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 modeling 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 inhomogeneity 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.

4.3.5 Sources of Dust Emission

The proposed mining is carried out by 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 (NO_x) 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 has 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.

4.3.6 Emission Details

All the emissions discussed above are quantified for proposed maximum production of is 232622 m³ of Rough Stone of Rough stone upto a depth of 36m (6m above ground level and 30m below ground level) for the period of five years.

Proposed quarries production Tmt.R.Kalpana (232622 m³ of Rough Stone 2170 m³ top soil) , Thiru.M.Ayyakannu (1080980 m³ of Rough Stone), Thiru.M.Vijay Ganesh (21150 m³ of Rough Stone), R.Arasappan (25985 m³ of Rough Stone).

Rough Stone for a period of five years by the open-cast mechanised mining method.

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.

4.3.7 Meteorological Data

The meteorological data recorded continuously during the month of Oct 2025 – Dec 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 modeling. Mixing heights representative of the region have been taken from the available published literature.

4.3.8 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.

The maximum ground level concentration is estimated to be about 1.44 $\mu\text{g}/\text{m}^3$ of PM 2.5 & 2.21 $\mu\text{g}/\text{m}^3$ of PM10 within the mine area and cluster area is estimated to be about 2.03 $\mu\text{g}/\text{m}^3$ of PM 2.5 & 3.92 $\mu\text{g}/\text{m}^3$ of PM10, where mining operations are being carried out. The impact of mining operations would be negligible beyond 0.4 km.

Figure – 4.1 represents the spatial distribution of the predicted ground level concentrations of PM₁₀ due to emissions from mine.

4.3.9 Emission sources & Quantification

Various point and non-point sources of emissions from Proposed Rough stone Quarry of Tmt.R.Kalpana is quantified and presented below:

Area Emissions – Total Material handling (Rough Stone)

Quantity, TPA	Tmt.R.Kalpana is 2,32,622 m ³ Rough stone
Operational Hours Per Year	2400
Activity Rate, t/hr.	400.126
Emission of dust, g/t.	0.12
Emission of dust, g /hr.	51.298
Area of influence, m ²	621
Uncontrolled emission rate g/s/m ²	0.000035941
Controlled emission rate, PM10 g/s/m ²	0.00003594
Controlled emission rate, PM2.5 g/s/m ²	0.00026125

Line Source – Transport of Rough Stone from Pit to Boundary

Quantity, TPA	Tmt.R.Kalpana is 2,32,622 m ³ Rough stone
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	16060
Lead length/trip, Km	0.70
Total VKT/Year	41539
Emission Kg/VKT	0.20
Total emission Kg/Year	42647
Uncontrolled emission rate g/s/m	3.12654
Controlled emission rate, PM10 g/s/m	0.31265
Controlled emission rate, PM2.5 g/s/m	0.21546

Area Emissions – Total Material handling (Cluster Rough Stone)

Quantity, m ³	Proposed existing queries: Tmt.R.Kalpana is 2,32,622 m ³ Rough stone Cluster existing queries: 1.Thiru.M.Ayyakannu (1080980 m ³ of Rough Stone),

	2.Thiru.M.Vijay Ganesh (21150 m3 of Rough Stone) 3.R.Arasappan (25985 m3 of Rough Stone)
Operational Hours Per Year	2400
Activity Rate, t/hr.	385.23
Emission of dust, g/t.	0.35
Emission of dust, g /hr.	92.566
Area of influence, m2	622
Uncontrolled emission rate g/s/m2	0.00049291
Controlled emission rate, PM10 g/s/m2	0.0004929
Controlled emission rate, PM2.5 g/s/m2	0.00022156

Line Source – Transport of Rough Stone (Cluster)

Quantity, m3	Proposed existing queries: Tmt.R.Kalpana is 2,32,622 m3 Rough stone Cluster existing queries: 1.Thiru.M.Ayyakannu (1080980 m3 of Rough Stone), 2.Thiru.M.Vijay Ganesh (21150 m3 of Rough Stone) 3.R.Arasappan (25985 m3 of Rough Stone)
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	88695
Lead length/trip, Km	0.25
Total VKT/Year	903697
Emission Kg/VKT	0.20
Total emission Kg/Year	25868
Uncontrolled emission rate g/s/m	4.9789
Controlled emission rate, PM10 g/s/m	0.49789
Controlled emission rate, PM2.5 g/s/m	0.34296

Note: *Emission factor computed based on wind speed of 2 m/s, and moisture content of 10 %. + Emission factor computed based on silt content of 10 % and moisture content of 10 %

Table 4.3 Concentrations of PM2.5 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Project site core zone	27.7	1.44	29.14	60
2	Vengayavellore village	22.45	1.30	23.75	
3	Pichchandal village	23.05	1.15	24.2	
4	Adaiyur village	24.75	1.01	25.76	
5	Vengikkal village	26.05	0.86	26.91	
6	Vediappanur village	27.85	0.72	28.57	

Table 4.3a Cluster Concentrations of PM2.5 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Project site core zone	27.7	2.03	29.73	60
2	Vengayavellore village	22.45	1.83	24.28	
3	Pichchandal village	23.05	1.62	24.67	
4	Adaiyur village	24.75	1.42	26.17	
5	Vengikkal village	26.05	1.22	27.27	
6	Vediappanur village	27.85	1.01	28.86	

Table 4.3b Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Project site core zone	59.4	2.21	61.61	100
2	Vengayavellore village	44.4	1.99	46.39	
3	Pichchandal village	46.4	1.77	48.17	
4	Adaiyur village	50.65	1.55	52.2	
5	Vengikkal village	53.2	1.33	54.53	
6	Vediappanur village	53.5	1.11	54.61	

Table 4.3c Cluster Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu\text{g}/\text{m}^3$
1	Project site core zone	59.4	3.92	63.32	100
2	Vengayavellore village	44.4	3.53	47.97	
3	Pichchandal village	46.4	3.13	49.53	
4	Adaiyur village	50.65	2.74	53.39	
5	Vengikkal village	53.2	2.35	55.5	
6	Vediappanur village	53.5	1.96	55.46	

The above report seems that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM_{10} are in the range of $52.2 \mu\text{g}/\text{m}^3$ to $61.61 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $23.75 \mu\text{g}/\text{m}^3$ to $29.14 \mu\text{g}/\text{m}^3$ and PM_{10} are surrounding area range of $47.97 \mu\text{g}/\text{m}^3$ to $63.32 \mu\text{g}/\text{m}^3$ and for $\text{PM}_{2.5}$ are in the range of $24.28 \mu\text{g}/\text{m}^3$ to $29.73 \mu\text{g}/\text{m}^3$ which are within the statutory limits in each case. 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.
- Three-layer plantation in the safety zone.
- DG sets shall be periodically maintained as per manufacturer's specifications.

4.4 ASSESSMENT OF SIGNIFICANCE OF IMPACTS (CRITERIA FOR DETERMINING SIGNIFICANCE, ASSIGNING SIGNIFICANCE).

4.4.1 NOISE ENVIRONMENT

The main noise generating source during mining operation and related activities are drilling, excavation, loading and transportation. Intermittent noise is generated due to operation of diesel generator.

4.4.2 Likely Noise Levels in Lease Area due to mining activity

S.No.	Source Name	Noise Level in dB (A)
1	Diesel generator	90
2	Excavator Operation	86
3	Trucks movement	82
4	Drilling	96
5	Blasting	102

It is expected that the generated noise will be limited within the mine lease area and there will be no profound effect of noise on the buffer zone. The noise level will be maintained below the threshold limit by vigorous maintenance of the machineries. Wet drilling with dust extractor is being used to reduce the noise level during the mining operation.

Noise levels were measured in the lease area and in the nearby villages Vengayavellore Village, Pichchandal Village, Adaiyur Village, Vengikkal Village and Vediappanur Village, the values are given below.

TABLE 4.4 Noise Levels in Monitoring Locations				
S. No.	Location	Distance and direction from Mine lease area	Day Equivalent (in dBA)	Night Equivalent (dBA)
1	Project site core zone	-	46.1	38.8
2	Vengayavellore village	1.58 km NE	48.4	39.2
3	Pichchandal village	4.47 km NE	47.3	40.1
4	Adaiyur village	1.66 km SE	46.3	38.6
5	Vengikkal village	3.91 km SE	49.8	39.8
6	Vediappanur village	2.76 km SW	44.4	37.1

The noise levels are within the MoEF & CC limits of 70 dB(A) in the working area and in the buffer areas, the values are below the limit of 75 dB(A). Since, the residential area norm has been considered for all six locations mentioned above, during mining operation mine lease area will be considered as industrial area/quarry area for which DGMS norms 85 dB(A)/CPCB guidelines 75 dB(A).

4.4.3 Impact of Noise due to mining

- ✚ Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area.
- ✚ As per DGMS (Directorate General of Mines Safety) limits, the acceptable noise level is 85 dB(A) for an exposure period of 8 hours.
- ✚ Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife.
- ✚ Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing.

4.5 MITIGATION MEASURES

4.5.1 Noise level control.

- ✚ As the distance between the source and receptor increases, the noise level decreases. Hence, there will be a natural attenuation.
- ✚ The proponent has planned to develop green belt in the periphery of the lease area which diminishes sound volume by dampening them.
- ✚ All the equipment/machinery/tippers involved will be properly maintained to control noise generation.
- ✚ Conducting regular health checkups for employees involved.
- ✚ Employees will be made to work on shifts to reduce their exposure time.
- ✚ Providing earplugs to all employees.
- ✚ Providing green walls/nets wherever possible.

By adopting these measures, the noise levels will be maintained well within MoEF & CC limits since the baseline value is low.

4.5.2 IMPACTS DUE TO VIBRATION

There will be negligible vibration of ground due to the following activities.

- ✚ Due to Blasting
- ✚ Due to Drilling
- ✚ Due to movement of machinery

Impacts

- ✚ Though vibration will be only felt by the people working inside the lease area it is usually undesired.
- ✚ Vibration may also cause fly rocks.
- ✚ It may frighten the birds and small insects in the lease area. However, it will be felt only for a short period.

Mitigation measures

- ✚ 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.

4.5.3 SOCIO ECONOMIC IMPACT

The lease area is Government poramboke land. The proponent has planned to spend INR 3,00,000 for CER activities.

4.5.4 OCCUPATIONAL HEALTH

Impacts on humans due to various mining activities

The occupational risk due to proposed mining may be due to drilling, blasting, excavation and transportation. A total of 27 workers will be engaged in the mining

activity. Mining activity may cause various health problems to the mines workers as follows:

- Dust generated during excavation, drilling, stone cutting, sizing and transportation may cause health problems like Silicosis, Asthma, Tuberculosis and other respiratory lungs disorders.
- Heavy weight lifting by the workers may cause injuries to arms, legs and back.
- Noise generated during the mining activity may cause Noise Induced Hearing Loss (NIHL).

Table 4.5 Impacts on humans due to various mining activities		
S.No.	Type of activity	Impact
1	Dust generation due to drilling and blasting	Continuous exposure to dust causes Pneumonia, Tuberculosis, Rheumatic arthritis and Segmental Vibration
2	Noise generation due to drilling and blasting	Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness
3	Unexpected accidents	Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

- The mines worker will be provided with dust mask to minimize the inhalation of the dust.
- Water sprinkling twice in a day is in practice on the haul roads, near excavation and roads to reduce the fugitive dust emission.
- Wet drilling and drilling with dust extractor will be practiced.
- Ear muffs will be supplied to the workers working in the noise prone area
- The mining site will be supplied with first aid facilities and the entire mines worker will have access to that.
- The mines workers will be well trained about the safety practices in the mining activities.
- As per Mines Rules, 1955, medical examination of employees at the initial stage and periodically, shall be done by a team of qualified medical officers provided by the project proponent.

- Regular medical checkup camps shall also be arranged for detection of occupational diseases and minor disease in the nearby rural population.
- Free checkup and medicine for treatment for their acute and chronic illness shall be provided by the lessee. Conducting periodical Medical Examination as per DGMS.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

4.5.5 WASTE MANAGEMENT

Solid Waste

Since the entire mined out material will be utilized there will not be any solid waste generation from this project. However, the Solid waste (MSW) generated from administrative activities will be properly collected and disposed to Govt. Authorized yards / Re-cylers / Disposers.

Liquid Waste

There is no process effluent generation from this mine. Hence no liquid waste is generated. Domestic wastewater i.e 0.5 KLD will be discharged in soak pit via septic tank.

Hazardous Waste Management

In this project the following management practices will be followed:

In the quarrying operation, the source of hazardous waste is from machinery maintenance activities that are waste oil/ Waste lubricants / Used filters / Used Hydraulic hoses. The said hazardous waste are very negligible quantity, it will be properly collected in the source level, stored in impervious storage yards and

disposed of as per the Hazardous waste (Trans-boundary Movement) Management Rules, 2016.

Plastic Waste

Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

RAINWATER HARVESTING PLAN

Since the lease proximate areas are with less water potential and the rainwater is the major source for replenishment of ground water, effective rainwater harvesting and other water augmentation measures are proposed in this project.

- Development of garland drain all around the quarry, connected to settling tank.
- Cleaning of drain periodically to prevent siltation
- Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.

The average annual rainfall of the area is 816mm. Taking into consideration of 0.35 as runoff co-efficient for mining area

CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 DESCRIPTION OF EACH ALTERNATIVE

Analysis of alternative site helps in selection of best possible site for the project. On one hand it helps to closeness to the existing infrastructure and on other hand it also helps to minimize the impact of project on environment.

5.2 SUMMARY OF ADVERSE IMPACTS OF EACH ALTERNATIVE

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 Deputy Director, Dept. of Geology & Mining, Tiruvannamalai, vide Rc.No.16/Mines/ 2025 dated 10.06.2025.

- There is no forest land or other Eco-sensitive places.
- Proposed mine site is selected on the basis of occurrence of mineral for suitable end use.

Hence seeking alternative site is not required.

5.3 MITIGATION MEASURES PROPOSED FOR EACH ALTERNATIVE

The mining technology is mechanized Opencast in single-shift operation without any change in technology. The operation will be carried out as per DGMS norms. No alternate technology will be used. Details of the technology used are given in Chapter II.

5.4 SELECTION OF ALTERNATIVE

In case of Mining projects alternate site selection is not necessary as the mining is site specific and the area in which mining will be carried out has been adequately proved for presence of mineral. The deposit is also having good infrastructural facilities for access and development.

The mining technology is mechanized Opencast in single-shift operation without any change in technology. The operation will be carried out as per DGMS norms. No alternate technology will be used. Details of the technology used are given in Chapter II.

CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 TECHNICAL ASPECTS OF THE MONITORING THE EFFECTIVENESS OF MITIGATION MEASURES (INCL MEASUREMENTS, METHODOLOGIES, FREQUENCY LOCATION DATA ANALYSIS, REPORTING SCHEDULES EMERGENCY PROCEDURES DETAILED BUDGET AND PROCUREMENT SCHEDULES)

6.1.1 ENVIRONMENTAL MONITORING

Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation.

A schedule is framed with timeline to monitor various parameters during the operation of the project. The schedule is framed based on MoEF & CC and Tamil Nadu State Pollution Control Board. In case the SEIAA/TNPCB/MoEF & CC or other statutory bodies demand monitoring of any additional parameter/factor, the same will also be done.

The proposed quarry is a small quarry. Hence the Mines-in-charge will be responsible for environmental related activities. After obtaining EC, the conditions mentioned in EC will be strictly followed. The Mines-in-charge will be responsible for implementing the conditions. EC compliance report will also be submitted periodically.

6.1.2 OBJECTIVES OF ENVIRONMENTAL MONITORING

The objectives of Environmental Monitoring are as follows.

-  Monitoring and analysis of air and water samples
-  Implementing the control and protective measures.

- ✚ Coordinating the environment related activities within the project as well as with outside agencies. Collecting statistics of health of workers and population of the surrounding villages. Green belt development etc.
- ✚ Monitoring the progress of implementation of Environmental Management Programme.
- ✚ Monitoring the noise generation in and around the project areas.
- ✚ Monitoring of wastewater treatment and disposal of solid waste.
- ✚ The laboratory will be suitably equipped for sampling/testing for various environmental pollutants.

6.1.3 ENVIRONMENTAL MONITORING SCHEDULE

To evaluate the effectiveness of Environmental Management Programme, regular monitoring of the important environmental parameters will be taken up. The frequency of monitoring different parameters is given in table 6.1.

Table 6.1 Environmental Monitoring Schedule			
Sl.No.	Description of Parameters	Parameters	Frequency
1	Air	Air Quality for SPM, PM-10, PM-2.5, SO ₂ and NO _x	24-hour average samples Once in a 3 month.
2	Water	General, Physical, and chemical parameters	Once per season
3	Noise	Leq, L _{max} , L _{min} , Leq Day & Leq Night dB(A)	8-hour average samples Once in a 3 month.
4	Soil	Physical and Chemical characteristics.	Once per season

6.1.4 LOCATION

Monitoring of the above-mentioned environmental parameters would be done at appropriate and sensitive areas. The exact location of monitoring is given as Figure – 3.5, 3.12, 3.13 & 3.14.

6.1.5 MEASUREMENT METHODOLOGY

(a) Ambient Air Quality

Ambient air quality will be monitored for SO₂, NO_x, PM₁₀ 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.

(b) 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.

(c) Noise Monitoring

Noise level will be monitored in working environment mainly noise producing sources over the boundary and around the mining area.

(d) Green Belt and Afforested Areas

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.

(e) Socio-Economics

Socio-economic of the core and buffer zone details elaborated in Chapter-3.

6.1.6 TECHNICAL ASPECTS OF MONITORING THE EFFECTIVENESS OF MITIGATION MEASURES

The above monitoring schedule will be followed periodically. After collection of the data, the mines-in-charge will analyze the data obtained. The data thus obtained will be incorporated in the EC Compliance report submitted to the regional office, MoEF & CC. The measurement methodologies will be as per CPCB/BIS/MoEF & CC/DGMS norms.

6.1.7 EMERGENCY PROCEDURES

In case of any emergency due to environmental conditions, the mines in-charge will immediately report to the top-level management and the emergency response protocol will be implemented as per MoEF & CC/ SPCB / DGMS norms.

6.1.8 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 6.2 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

6.1.9 DETAILED BUDGET AND PROCUREMENT SCHEDULES

The budget planned for environmental monitoring is given below.

Table 6.3 - Environmental Management Plan Budget

Activities	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	0.10	0.10
	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	0.30	0.06
	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	0.06	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	0.40
	Installing wheel wash system near gate of quarry	2.00	0.05
Sub-Total (A)		7.46	1.12
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 (290 Nos.)	0.29	0.06

Sub-Total (D)		0.29	0.06
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	0.27	0.03
	Health checkup for workers will be provisioned	0.00	0.14
	First Aid facility Provision	0.00	0.02
	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	0.20	0.01
	Installation of CCTV cameras in the mines and mine entrance	0.15	0.02
Sub-Total (E)		0.72	0.73
Key Measures G.I Sheet Fencing all around the periphery of the western and southern direction of the project site		5.00	0.00
Sub-Total (F)		5.00	0.00
Grant Total (A+B+C+D+E+F)		14.02	2.05
Total EMP Cost for 5 years is 25.34 lakhs i.e., Rs.14.02 Lakhs of Capital Cost + Rs.11.32 Lakhs of Recurring Cost			

The proposal for Corporate Environment Responsibility (CER) activities is given as follows;

S. No.	PROPOSED CER ACTIVITIES	COST IN LAKHS.
1	Plantations inside and outside the school premises	

2	Carrying out of various infrastructural development activities	3.0
Total		3.0

The above proposed CER cost will be spent on Government Adi Dravidar Welfare High School, **Adaiyur, Tiruvannamalai** and I assure you that the proposed CER activities will be completed before the commencement of quarrying operations.

The total project cost is as given below:

Fixed Cost		
Tender amount	:	Rs.175.0 Lakhs
First Aid Room	:	Rs.1.00 Lakh
Rest Shelter	:	Rs.1.00 Lakh
Sanitary Facility	:	Rs.1.00 Lakh
Total (A) – Rs.178.0Lakhs		
Operational Cost		
Machineries	:	Rs.50.000 Lakhs
Fencing cost	:	Rs.1.500 Lakhs
Total (B) – Rs. 51.50 Lakhs		
EMP Cost		
Air Environment, Noise Environment, Mine Closure, Implementation of EC, Mining Plan & DGMS Condition	:	Total(C)– Rs.25.34 Lakhs
CER Cost		
Plantation, Providing A4 papers, Scanner cum printer and Painting the school building	:	Total (F)– Rs.3.00 Lakhs
Grand Total (A+B+C+D+E+F)	:	Rs. 257.84 Lakhs

CHAPTER 7

ADDITIONAL STUDIES

The additional studies covered for this EIA / EMP report are,

- Public consultation
- Risk Assessment
- Social Impact Assessment, R&R Action Plans
- Cumulative Environmental Impact Assessment Study
- A detailed Hydrogeological Study
- Slope Stability plan

7.1 PUBLIC CONSULTATION

After the preparation of the draft EIA/EMP report, it must be submitted to the State Pollution Control Board. A public consultation will be conducted on behalf of the Pollution Control Board through the District Collector and the officials from the PCB. A prior notice must be issued about the event, along with the time and date, in two leading newspapers. The opinions, suggestions, demands, and objections of people, NGO environmentalists, etc. are sought, and the proceedings are recorded. The replies of the proponent and corresponding officials will be recorded in the final EIA/EMP report.

7.2 RISK ASSESSMENT & MANAGEMENT

(a) Objectives

Risk assessment is a method in which possible threats/hazards which may arise during mining operations are identified so that adequate machinery/equipment are made available in precaution. The objectives of environmental risk assessment are governed by the following, which excludes natural calamities:

- ✚ To identify the potentially hazardous areas so that necessary design safety measures can be adopted to minimize the probability of accidental events.

- ✚ To identify the potential areas of environmental disaster which can be prevented by proper design of the installations and its controlled operation.
- ✚ To manage the emergency situation or a disastrous event, if any, from the mining operation.

The major hazards related to the mining activities are as follows

- ✚ Open cast bench slope failure
- ✚ Accident due to fall of quarry sides
- ✚ Accident due to machineries
- ✚ Accident due to explosives
- ✚ Accident due to large block cutting, separation and loading

Some of the common hazards are identified and the corresponding precautionary measures are drafted.

Table 7.1 Hazards and Precautionary measures		
S.No.	Hazard	Precautionary measures
1	Fire	Fire suppressants will be made available at mines office and explosive storage room.
2	Explosion	Controlled blasting will be done. DGMS norms will be strictly followed during blasting. Blasting will be done only by trained professionals.
3	Combustion of chemicals or hazardous substances	Combustible Substances are stored with all precautionary measures. Fire suppressant is made available at storage site
4	Landslide	Width, height and slope will be maintained as suggested by DGMS
5	Accidents during handlings	All vehicles will be properly maintained. Overloading will not be done. Only trained/certified people will be employed.
6	Accidental fall of people or animals	The lease area will be fenced properly. Only people working in the mines will be permitted to enter.

7.3 REHABILITATION AND RESETTLEMENT (R & R) PLAN

No land is acquired from people dwelling in the area. The lease area is an uninhabited land. No R & R plan is proposed.

7.3.1 CUMULATIVE ENVIRONMENTAL IMPACT ASSESSMENT STUDY

The details of other quarries located within the 500m radius of this project are provided below:

Table 7.2 Cluster Mines Details				
S.No	Name of the Quarry Owner	S.F. Nos & Village	Lease Period	Area
a. Existing Quarry				
1.	M.Ayyankannu	Adaiyur, Tiruvannamalai 49/2(Part-1)	16.08.2023 To 15.08.2028	4.30.0 Ha
b. Abandoned Quarry				
1.	N.Harijayashree	Adaiyur, Tiruvannamalai 49/2 (Part-1)	09.11.2006 to 08.11.2011	4.30.0 Ha
2.	M.Vijai Ganesh	Adaiyur, Tiruvannamalai 49/2(Part-1)	25.04.2012 to 24.04.2017	4.30.0 Ha
3.	M.Vijai Ganesh	Adaiyur, Tiruvannamalai 49/2(Part-1)	09.11.2006 to 08.11.2011	4.30.0 Ha
4.	R.Arasappan	Adaiyur, Tiruvannamalai 49/2(Part-2)	13.06.2012 to 12.06.2017	4.30.0Ha
c. Proposed Quarry				
1.	Tmt.R.Kalpana	Adaiyur, Tiruvannamalai 49/2(Part-2)	Presently proposed	2.00.0 Ha
Total Area Under Cluster Area		6.30.0 Ha		

A cumulative impact of these two proposed quarries has been studied and the details are given in Chapter IV.

Table 7. 3 Salient Features of Proposed Quarries

Description		E1	A1	A2	P1
Name of the Quarry		Thiru.M.Ayyakannu 4.30.0 Ha	Thiru.M.Vijay Ganesh 4.30.0 Ha	R.Arasappan 4.30.0 Ha	Tmt.R.Kalpana 2.00 Ha
Geological Resources in m3	Rough stone	2197660 m3 Rough stone	407390 m3 Rough stone	530700 m3 Rough stone 35380 m3 top soil	61946 m3 of Rough Stone 1677 top soil
Mineable Reserves in m3	Rough stone and Gravel	1080980 m3 of Rough Stone	21150 m3 of Rough Stone	25985 m3 of Rough Stone	232622 m3 of Rough Stone 1085 top soil
Five years plan period as in the approved mining plan	Rough stone and Gravel	1080980 m3 of Rough Stone	21150 m3 of Rough Stone	25985 m3 of Rough Stone	232622 m3 of Rough Stone 1085 top soil
Production per day in m3	Peak Production	216915 m3 3rd year	10575 m3 2nd year	12992 m3 2nd year	127875 m3 3rd year
Lorry Loads per day in Nos	-	-	-		-
Employment in Nos		29	12	12	27
Proposed Depth in meters		60m (15m above ground level and 45m below ground level)	15m (10m above ground level and 5m below ground level)	16m (6m above ground level and 10m below ground level)	36m (6m above ground level 30m below ground level)
Status of the quarry		Existing	Abandoned	Abandoned	Proposed

Cumulative Impact on Traffic

The mined-out minerals will be transported by means of trucks to the consumers like crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. The cumulative impact on traffic due to transportation of minerals from these 6 leases (1 Existing + 4 Abandoned + 1 Proposed) are provided below:

Table 7. 4 – Impact on Traffic

Mineral Transportation			
Production Per day in tons			
Quarry	Quarry Name	Total Mineral in tons per day	No. of Lorry Load per day
P1 (Proposed)	(Tmt.R.Kalpana)	1172	117
Total		1172	117

Since the existing quarry (1 No) are already integrated into the current traffic flow, the incremental traffic volume has been calculated considering only the proposed quarries. Accordingly, the proposed projects are expected to generate 117 trips per day. Traffic density study details are elaborated in chapter 2.

7.3.2 SLOPE STABILITY STUDY

The proposed quarry is a very small quarry and the production is also less. Opencast 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 36m (6m above ground level 30m below ground level) 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
- Bench height, width, slope will be as per DGMS norms

7.3.3 DISASTER MANAGEMENT PLAN

Proper preventive mechanism exists already in the mines.

- Precautionary measures are well explained to all staff by the mines in-charge.
- PPE necessary for all staff are available in the quarry. No person is allowed to enter inside without PPE. Avoiding quarrying during unfavorable environmental conditions.
- Carrying out safe blasting by following DGMS norms
- Safety equipment like fire extinguisher, first aid kit, etc are present in the mine.
- Proper maintenance of machinery used for mining
- In case of any emergency, the contact numbers of mines in-charge, mines manager, Management contact are available in the mine's office.

7.3.4 MINE CLOSURE PLAN

The quarrying operation is proposed up to a depth of 36m (6m above ground level 30m below ground level) only, which will be achieved in 5 years. The ultimate pit dimension will be length 196 m x Width 96 m x Depth 36m (6m above ground level 30m below ground level. After completion of quarrying operation, the mined-out pit will be left as rain water harvesting pond. The quarry will be properly fenced with barbed wire.

CHAPTER 8

PROJECT BENEFITS

INTRODUCTION

Tmt.R.Kalpana has proposed Rough stone quarry over an extent of 2.00.0 ha located at S.F.No. 49/2 (Part-2) in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District Tamil Nadu State.

PROJECT BENEFITS

Project benefits are attributed in various ways as under:

- Environment Benefits
- Employment Potential: Skilled, Semi-skilled & Un-skilled
- Economic Benefits
- Social Benefits

8.1 IMPROVEMENTS IN THE PHYSICAL INFRASTRUCTURE

The project area is located on Government poramboke land, thereby causing no impact on the loss of agriculture or forest land. The project will create employment opportunities in the area. There will be no adverse effect of mining on the socioeconomic status of the people; rather, mining activities will improve their standard of living. The mining activity creates employment opportunities for the local people, and this definitely raises their economic status. Apart from the overall beneficial impact of the project on the local people of the region, it is felt necessary to augment facilities in the fields of education, health, and social awareness, including concern for the environment and ecosystem.

8.2 IMPROVEMENTS IN THE SOCIAL INFRASTRUCTURE

The proposed project will help in improving the socio-economic status of the near-by villages by generating direct or indirect employment opportunities. Substantial amount of indirect revenue will be generated by transportation activities along with employment e.g. labour, helper etc.

ECONOMIC BENEFITS:

The execution of proposed mine will boost the economy of the area by creating direct & indirect jobs for locals. There will be a positive cumulative impact of the project on the economy.

8.3 EMPLOYMENT POTENTIAL: SKILLED, SEMI-SKILLED & UN-SKILLED

The mining Tmt.R.Kalpana, will create direct employment opportunity for 27 local people. As per MOEF & CC Notification CER cost is arrived for an amount of 3 Lakhs, it will be utilized as per the CER letter received from the competent authority.

8.4 OTHER TANGIBLE BENEFITS

The mine management will recruit semi-skilled & unskilled eligible workers from the nearby villages depending upon requirement in the mines and the eligibility, qualification and experience of local persons.

The overall effect will result in higher standard of living viz. better education, improved health and sanitation facilities, housing and acquisition of consumer durables. Housing, transport, medical, educational and other civic amenities will get improved in the future. This is envisaged as a major positive benefit.

CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

As per EIA Notification dated 14th Sept., 2006, as amended from time to time, 'Environmental Cost Benefit Analysis' is applicable only if the same is recommended at the Scoping stage.

As per the ToR points issued by SEIAA-TN vide ToR Identification No. TO25B0108TN5338525N, dated 24.11.2025 for the proposed project, the 'Environmental Cost Benefit Analysis' is not prescribed.

CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 DESCRIPTION OF THE ADMINISTRATIVE ASPECTS OF ENSURING OF ENSURING THAT MITIGATIVE MEASURES ARE IMPLEMENTED AND THEIR EFFECTIVENESS MONITORED AFTER APPROVAL OF THE EIA.

10.1.1 OBJECTIVES

The Environmental Management Plan is developed to ensure that a project is implemented in an environmentally sustainable manner, where all contractors and subcontractors, including consultants, understand the potential environmental risks arising from the project and take appropriate actions to minimize those risks. EMP also ensures that the project implementation is carried out in accordance with the planned design and by taking appropriate mitigation measures to reduce adverse environmental impacts during the project's life cycle. The impacts due to this mining project are detailed in Chapter 4 and Mitigation measures at the source level and an overall Management Plan at the site level are elaborated on in this chapter.

10.1.2 BASIC OF EMP

The Environmental Management Plan for the proposed project activities is formulated taking into considerations the following key environmental issues.

- ✚ Project activities
- ✚ Studies on Environmental Impact Assessment
- ✚ Air & water pollution control
- ✚ Working zone environment improvement
- ✚ Occupational hazards & safety
- ✚ Environmental monitoring facilities
- ✚ Environmental management costs

EMP covers all phases of the project considering the impacts with mitigation measures and monitoring programme. The plan outlines the measures that will be

undertaken to ensure compliance with environmental legislations and to minimize adverse impact. Details of EMP measures for implementation in the mine are given below.

Table 10.1 Environmental Management Plan	
Environmental Parameter	Mitigation Measures
Air	Wet drilling to suppress the dust emission from drill machine
	Regular water sprinkling on haulage road through fixed water sprinkler.
	1.0 KLD of water will be used for dust suppression.
	Avoiding blasting during high wind period, night times and temperature inversion periods.
	Regular grading of haul road to clear accumulation of loose material.
	It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements
	Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution
	Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures.
	Afforestation for control of dust.
Surface water	There is Odai is located at a distance of 430m in Southwest direction, Nochimalai Tank- 460m (SE), Kosalai Tank -1.64 km SE, Devanambattu Tank -2.5 Km S of lease area.
	Surface runoff management structures like garland drain of required length which is connected to a settling pond will be constructed around the quarry to collect the rain water.
	Monthly or after rainfall, inspection will do to ensure performance of water management structures and systems. There is no discharge of any effluent into nearby water bodies.
Ground Water	The quarrying operation is proposed upto a depth of 36m (6m above ground level 30m below ground level). Water table is found at a depth of 70 m, hence the project will not intersect the Ground water table during entire quarry period.
	Water required for this project will be sourced from vendors.

Water Consumption and Wastewater generation	Domestic wastewater generation of 0.5 KLD will be treated in septic tank with soak pit.
	Conduct ground water and surface water monitoring for parameters specified by CPCB
Noise	The workers employed are provided with protection equipment, earmuffs and ear-plugs for the protection from high noise level generated at the mine site wherever required.
	Noise levels are controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.
	Development of thick greenbelt all along the safety Zone (10 m) of the project area to attenuate the noise and the same will be maintained.
	Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation.
	Annual ambient noise level monitoring is carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring.
Ground Vibration and Fly Rock Control	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.
	Will be Ensured that blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material.
	To be Undertake noise or vibration monitoring.
Land Environment	At conceptual stage, the mining pits will be converted into Rain Water Harvesting pit. Remaining area will be converted into greenbelt area.
	No external dumping i.e., outside the project area. The entire material will be sold.
	Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.
	The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.
	Frequent Soil and ground water testing as per Environmental Monitoring Plan.
Top Soil / Overburden	There is overburden in the form of topsoil, after excavation of topsoil will be utilized for afforestation purpose.

Biological Environment	During mining, thick plantation will be carried out on the mentioned safety zone areas.
	The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
	Regular review on green belt development programme.
	Year wise greenbelt development plan mentioned in Chapter III will be monitored.

10.1.3 ADMINISTRATION AND TECHNICAL SETUP

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.



1	Skilled	Mines Manager(II Class)	1 No
		Foreman/Mine Mate	2 Nos
		Operator	8 Nos
		Mechanic	1 No
2	Semi-Skilled	Diver	3 Nos
3	Un-skilled	Labours	12 Nos
Total			27 Nos

10.1.4 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 Quarry of Tmt.R.Kalpna 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.

10.1.5 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and a good employer-employee relationship. The main factors affecting occupational health in

quarries are fugitive dust and noise. Safety of employees during quarrying operations and maintenance of mining equipment will be taken care of as per the Mines Act 1952 and Rule 29 of the Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise, and vibration, sufficient measures have been provided. The health status of workers in the mine will be regularly monitored under an occupational surveillance programme. Under this programme, all employees are subjected to a detailed medical examination at the time of employment. Before the induction of employees, a pre-medical checkup is done. In addition, a periodical medical checkup will be done annually for all employees.

10.1.6 COST OF ENVIRONMENTAL CONTROL MEASURES

The effective implementation of EMP is not only reduce pollution load and comply the regulatory requirement but also increase productivity and improve marketability of product. The capital and recurring cost of EMP for the cluster of mines has been given in below table.

Table 10.2 - Environmental Management Plan Budget

Activities	Mitigation Measure	Capital cost	Recurring Cost per Annum
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	0.10	0.10
	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	0.30	0.06
	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	0.06	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	0.40

	Installing wheel wash system near gate of quarry	2.00	0.05
Sub-Total (A)		7.46	1.12
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 (290 Nos.)	0.29	0.06
Sub-Total (D)		0.29	0.06
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	0.27	0.03
	Health checkup for workers will be provisioned	0.00	0.14
	First Aid facility Provision	0.00	0.02
	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	0.20	0.01
	Installation of CCTV cameras in the mines and mine entrance	0.15	0.02
Sub-Total (E)		0.72	0.73
Key Measures G.I Sheet Fencing all around the periphery of the western and southern direction of the project site		5.00	0.00
Sub-Total (F)		5.00	0.00
Grant Total (A+B+C+D+E+F)		14.02	2.05

**Total EMP Cost for 5 years is 25.34 lakhs
i.e., Rs.14.02 Lakhs of Capital Cost + Rs.11.32 Lakhs of Recurring Cost**

The proposal for Corporate Environment Responsibility (CER) activities is given as follows;

S. No.	PROPOSED CER ACTIVITIES	COST IN LAKHS.
1	Carrying out of various infrastructural development activities The above proposed CER cost will be spent for the development of Adi Dravidar Welfare Middle School, Adaiyur, Tiruvannamalai through Namma School Namma Ooru Palli. CER Organizer Contact Number: 95971 21648	3.0
Total		3.0

The above proposed CER cost will be spent on Government Adi Dravidar Welfare High School, **Adaiyur, Tiruvannamalai** and I assure you that the proposed CER activities will be completed before the commencement of quarrying operations.

The total project cost is as given below:

Fixed Cost		
Tender amount	:	Rs.175.0 Lakhs
First Aid Room	:	Rs.1.00 Lakh
Rest Shelter	:	Rs.1.00 Lakh
Sanitary Facility	:	Rs.1.00 Lakh
Total (A) – Rs.178.0Lakhs		
Operational Cost		
Machineries	:	Rs.50.000 Lakhs
Fencing cost	:	Rs.1.500 Lakhs
Total (B) – Rs. 51.50 Lakhs		
EMP Cost		
Air Environment, Noise Environment, Mine Closure, Implementation of EC, Mining Plan & DGMS Condition	:	Total(C)– Rs.25.34 Lakhs
CER Cost		
Plantation, Providing A4 papers, Scanner cum printer and Painting the school building	:	Total (F)– Rs.3.00 Lakhs

Grand Total (A+B+C+D+E+F)	:	Rs. 257.84 Lakhs

10.1.7 CONCLUSION

Various aspects of mining activities were considered, and related impacts were evaluated. Considering all the possible ways to mitigate the Environmental concerns, an Environmental Management Plan was prepared, and INR 25.34 lakhs has been allocated for the same. The EMP is dynamic, flexible, and subjected to periodic review. For projects where major environmental impacts are associated, EMP will be under regular review. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP, and the project will have a positive impact on the study area.

CHAPTER 11

SUMMARY& CONCLUSION

11.1 OVER ALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

INTRODUCTION

Tmt.R.Kalpana Lessee, has obtained Precise Area communication letter from the Deputy Director, Department of Geology and Mining, Tiruvannamalai to quarry out Mineable reserves of 6,39,710.50 Ts (2,32,622 m³) of Rough stone and 2,170 Ts (1085 m³) Top soil upto a depth of 36m (6m above ground level 30m below ground level). Existing depth 10m (6m AGL & 4m BGL). Over an extent of 2.00.0 ha., located at the Survey No. 49/2 (PART-2) in Adaiyur village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough stone Quarry of Tmt.R.Kalpana mines cluster falls under Schedule 1(a) of EIA Notification and its subsequent amendments the project comes under Category B1. The ToR for preparation of EIA/EMP report of the project was approved vide ToR Identification No. TO25B0108TN5338525N, dated 24/11/2025 This report has been prepared in line with the approved TOR for production of maximum excavation of 2,32,622 m³ of Rough Stone.

Sl. No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough stone quarry
4.	Type of Lease	The applied area was previously operated by another lessee (Thiru.R. Arasappan) during the lease period 13.06.2012 – 12.06.2017. CCR is not applicable
5.	Extent of the lease	2.00.0 Ha
6.	Proposed depth of mining	36m (6m above ground level 30m below ground level) Existing depth 10m reached
7.	Method of mining	Opencast mechanized.
8.	Proposed lease period	5 Years
9.	Proposed Environmental Clearance	5 Years
10.	Mineable reserves 36m (6m above ground level 30m below ground level)	6,39,710.50Ts/2,32,622m ³ of Rough Stone & 2,170Ts/1085m ³

		of Topsoil for the depth of 36m (6m AGL & 30m BGL)
11.	Proposed production quantity for five years 36m (6m above ground level 30m below ground level)	6,39,710.50Ts/2,32,622m ³ of Rough Stone & 2,170Ts/1085m ³ of Topsoil for the depth of 36m (6m AGL & 30m BGL)

The Lessee Tmt.R.Kalpana is an Individual firm with sound experience in the identification, quarrying and marketing of Rough Stone. The proposed land is a Government poramboke land and attached as **Annexure 6**.

1.1.1 LOCATION

The proposed project site is located in Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State and its Latitude: 12°16'38.23"N to 12°16'45.53"N and Longitude: 79°02'09.62"E to 79°02'14.38"E. with Survey of India Topo Sheet No. 57 P/03. To conduct the study, the proposed mine lease area (core zone) and an impact zone of 10 km radius (called buffer zone) around the proposed mine site were considered. The EIA report is based on three months baseline data (i.e. October to December 2025)

11.1.2 GEOLOGY

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 N30°W-S30°E with vertical dipping.

11.1.3 PROJECT DESCRIPTION

This is a proposed Rough Stone quarry by Opencast Mechanized mining method with drilling and blasting. The quarrying is restricted up to a depth of 36m (6m above ground level 30m below ground level). The geological reserves are estimated to be 17,03,449 Ts (619436 m³) of Rough Stone and 3,354 Ts (1677 m³). The mineable reserve calculated by deducting 7.5m & 10m safety distance and bench loss. The mineable reserves are **232622** m³ of Rough Stone a which will be recovered at the rate of 100% recovery upto a depth of 36m (6m above ground level 30m below ground level).

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 70° slope using conventional Open cast Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough Stone.
- There is no overburden anticipated during entire rough stone quarrying operation.

Salient features of the project		
S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	Existing
3	Category	B1
4	Nature of mineral	The Applied area was previously operated by another lessee (Thiru.R. Arasappan) During the Lease Period 13.06.2012 – 12.06.2017. CCR is not applicable
5	Life of the mine	5 years
6	Geological reserves	Rough Stone – 17,03,449Ts / 619436 m3 Top soil - 3,354 Ts / 1677 m3
7	Mineable reserves (upto 36m (6m above ground level 30m below ground level)	6,39,710.50 Ts / 2,32,622 m3 of Rough Stone & 2,170 Ts /1085 m3 of Topsoil for the depth of 36m (6m AGL & 30m BGL)
8	Proposed production quantity for five years 36m (6m above ground level 30m below ground level)	6,39,710.50 Ts / 2,32,622 m3 of Rough Stone & 2,170 Ts /1085 m3 of Topsoil for the depth of 36m (6m AGL & 30m BGL)
9	Waste generation and management	Nil
10	Existing depth	10m (6m above ground level and 4m below ground level)
11	Bench height and width	Proposed bench height & width is 5.0m respectively and number of proposed benches is 7+1 Nos.
12	Ultimate pit depth	36m (6m above ground level 30m below ground level)
13	End use	The excavated Rough Stone is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

11.1.4 PROJECT REQUIREMENTS

The requirements of the project is given below.

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 3.0 KLD which will be procured from the outside agencies. Out of 1.0 KLD drinking water requirement, Green belt development is 1.0 KLD and dust suppression is 1.0 KLD.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid. Total Fuel requirement is 1,86,459 liters of HSD for entire life of the project.
3	Manpower requirement	This project will give employment opportunities to 27 people
4	Financial requirement	The total project cost as per PFR will be INR . 257.84 Lakhs including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 3 Lakhs is allocated. In addition, any demand raised by people during public hearing will also be met.

11.1.5 DESCRIPTION OF LEASE AREA

The features in the study area is given below.

Table 11.1 Description of the lease area				
S.No.	Areas	Distance from project site		
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 15km radius		
2	Areas which are important or sensitive for ecological reasons			
A	Wetlands, water courses or other water bodies,	Water bodies	Distance	Direction
		Odai	430m	SW
		Nochimalai Tank	460m	SE
		Kosalai Tank	1.64 km	SE

		Devanambattu Tank	2.5 km	S
		Devananda Tank	1.76 km	NW
		Venkikak Tank	2.8 km	SE
		Meelnachipattu Tank	7.26 km	NW
		Melpadur Chitheri	6.77 km	NW
		Narthavadi Tank	8.4 km	NW
		Adaiyur Tank	7.8 km	SE
B	Coastal zone, biospheres,	Nil within 10km radius		
C	Mountains, forests	- Kavunttumalai R.F – 713m (W) - Adiannamalai R.F- 3.09Km (SE) - Sorakolathur R.F – 6.09Km (N) - Radhapuram R.F- 7.46Km(SW)		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 15km radius		
4	Inland, coastal, marine or underground waters	Nil within 15km radius		
5	State, National boundaries	Nil within 15km radius		
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 15km radius		
7	Defense installations	Nil within 15km radius		
8	Densely populated or built-up area	Densely Populated Tiruvannamalai - 7.4km (SE)		
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Densely Populated Tiruvannamalai - 7.4km (SE)		
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil		
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil		

12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

The baseline data collection for meteorology, air, water, noise and soil environments have been carried out during March to May 2025.

Air, water, noise and soil samples are collected and analyzed through NABL accredited lab.

11.2 EXPLANATION OF HOW ADVERSE EFFECTS HAVE BEEN MITIGATED

11.2.1 AIR ENVIRONMENT

The air monitoring have been carried out in 6 locations and the results are given below.

Table 11.2: Details Of Ambient Air Quality Monitoring Locations				
S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ 1	Project site core zone	-	12°16'38.98"N 79° 2'12.33"E
2	AAQ 2	Vengayavellore village	1.58 km NE	12°17'26.50"N 79° 2'39.97"E
3	AAQ 3	Pichchandal village	4.47 km NE	12°18'55.97"N 79° 3'16.88"E
4	AAQ 4	Adaiyur village	1.66 km SE	12°15'55.96"N 79° 2'46.93"E
5	AAQ 5	Vengikkal village	3.91 km SE	12°15'32.37"N 79° 4'6.33"E
6	AAQ6	Vediappanur village	2.76 km SW	12°15'35.60"N 79° 1'4.74"E

All the values of pollutant concentrations were found to be within the NAAQs Standards.

Station ID	Min	Max	Avg.
Particulate matter PM_{2.5} (µg/m³)			
AAQ-1	23.8	31.6	27.7
AAQ-2	17.7	27.2	22.45
AAQ-3	18.9	27.2	23.05
AAQ-4	20.4	28.7	24.75
AAQ-5	23.5	28.6	26.05
AAQ-6	22.1	33.6	27.85
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Particulate matter PM₁₀ (µg/m³)			
AAQ-1	49.9	68.9	59.4
AAQ-2	38.8	50	44.4
AAQ-3	41	51.8	46.4

Station ID	Min	Max	Avg.
AAQ-4	44	57.3	50.65
AAQ-5	46.3	60.1	53.2
AAQ-6	47.8	59.2	53.5
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	6.3	8.6	7.45
AAQ-2	4	6.2	5.1
AAQ-3	4	6.1	5.2
AAQ-4	4.3	6.1	5.2
AAQ-5	4	7.1	5.55
AAQ-6	4.4	6.9	5.65
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	10.6	12.7	11.65
AAQ-2	7.7	10.3	9
AAQ-3	7.2	8.8	8
AAQ-4	7.7	10.8	9.25
AAQ-5	8.1	11.9	10
AAQ-6	9.1	10.8	9.95
CPCB NAAQS 2009 for NO₂ - 80 µg/m³			

11.2.2 WATER ENVIRONMENT

Table 11.3 Results of Ground Water sampling Analysis in 6 locations							IS:10500: 2012	
	W1	W2	W3	W4	W5	W6	Desira ble	Permis sible
Odour	Agreeab le	Agreeabl e	Agreeable	Agreeab le	Agreeab le	Agreeabl e	Agree able	Agreea ble
Turbidity	<1	<1	<1	<1.0	<1	<1	Agree able	Agreea ble
pH at 25 °C	7.42	7.84	6.97	7.38	7.42	7.25	6.5 - 8.5	No Relaxat ion
Electrical Conductivity	1034	412.6	720.5	1690	1012	1165	-	-
Total Dissolved Solids	620	250	435	1015	610	702	500	2000
Total hardness as CaCO ₃	428	174	232	348	401	332	200	600
Calcium as Ca	83.2	44.8	58	66.8	78	74.4	75	200
Magnesium as Mg	52.8	14.9	20.9	43.4	49.4	35.0	30	100
Calcium as CaCO ₃	208	112	145	167.0	195	186	-	-
Magnesium as CaCO ₃	220	62	87	181	206	146	-	-
Total alkalinity as CaCO ₃	320	150	160	325	256	260	200	600
Chloride as Cl-	81.5	34.5	166	330	112	176	250	1000
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)	0.2	1.0

Sulphates as SO ₄ ²⁻	115	13.5	70.6	212	116	220	200	400
Iron as Fe	0.05	0.04	0.03	0.07	0.05	BDL(D.L - 0.01)	0.3	No Relaxation
Nitrate as NO ₃	2.36	BDL(D.L- 1.0)	3.54	2.65	2.99	2.34	45	No Relaxation
Fluoride as F	0.33	0.26	0.29	0.41	0.29	0.45	1.0	1.5
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)	0.1	0.3

All the values were found to be within permissible limits

11.2.3 NOISE ENVIRONMENT

Noise levels were measured in 6 locations and the results are given below.

Table 11.4 Noise monitoring results					
S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	Project site core zone	46.1	38.8	75	70
2	Vengayavellore village	48.4	39.2		
3	Pichchandal village	47.3	40.1		
4	Adaiyur village	46.3	38.6		
5	Vengikkal village	49.8	39.8		
6	Vediappanur village	44.4	37.1		

11.2.4 SOIL ENVIRONMENT

Soil samples are collected from 6 locations and the results are given below.

Table 3.10 Results of Soil Sample Analysis								
S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25 °C	-	7.56	6.98	6.85	6.99	7.12	7.54
2	Electrical Conductivity	µmhos /cm	75.68	80.24	47.32	62.45	55.39	121
3	Dry matter content	%	96.57	93.25	96.57	95.89	96.11	94.36
4	Water Content	%	3.43	6.75	3.43	4.11	3.89	5.64
5	Organic Matter	%	0.49	0.52	0.69	0.75	0.96	0.94
6	Soil texture	-	LOAM	CLAY LOAM	loam	loam	loam	SANDY LOAM
7	Grain Size Distribution	%	50.32	30.79	49.01	34.65	40.12	66.65
	i. Sand							
8	ii. Silt	%	28.96	42.32	31.69	45.52	36.51	23.74

9	iii. Clay	%	20.72	26.89	19.3	19.83	23.37	9.61
10	Phosphorous as P	mg/kg	1.42	1.32	1.75	1.25	2.32	1.78
11	Sodium as Na	mg/kg	662	550	428	387	420	469
12	Potassium as K	mg/kg	354	323	636	590	664	305
13	Nitrogen and Nitrogenous Compounds	mg/kg	190	212	154	205	244	176
14	Total Sulphur	%	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)
15	Porosity	%	19.8	19.5	20.6	22.1	23.6	21.1
16	Water Holding Capacity	Inches /foot	40	44	42	40	42	38

11.2.5 BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided into 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Field survey is done. Erukku, Aavarai and Nayuruvi are found in lease area. In the buffer zone, common trees like Neem, papaya, mango, teak, etc and shrubs like Avarai, Aloe vera, etc, climbers like Kovai, jasmine etc are found.

FAUNA

In the study area, commonly found animals like dogs, cats, bush rat, cows, birds like crow, Myna, Sparrow, etc were found.

11.2.6 LAND USE

The land use land cover data is found using the LANDSAT – 9 satellite imagery. The number of bands used are 11. The land use pattern is given below:

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1	Built-up land	12.7	4.04
2	Crop land	156.17	49.71
3	Existing quarry	3.63	1.15
4	Fallow land	18.32	5.83
5	Hill and Forest	62.37	19.85
6	Land with scrub	12.57	4

7	Land without scrub	6.51	2.07
8	Plantations	21.56	6.86
9	Water bodies	19.65	6.25
10	Salt Affected land	0.68	0.21
	Total Area	314.16	100

11.2.7 SOCIO ECONOMIC ENVIRONMENT

The socio economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used.

The following data area collected from secondary data.

- Demographic pattern.
- Health pattern
- Occupational structure.
- Amenities available.

Adaiyur is a large village located in Tiruvannamalai Taluka of Tiruvannamalai district, Tamil Nadu with total 934 families residing. The Adaiyur village has population of 4236 of which 2170 are males while 2066 are females as per Population Census 2011.

In Adaiyur village population of children with age 0-6 is 528 which makes up 12.46 % of total population of village. Average Sex Ratio of Adaiyur village is 952 which is lower than Tamil Nadu state average of 996. Child Sex Ratio for the Adaiyur as per census is 872, lower than Tamil Nadu average of 943.

Adaiyur village has higher literacy rate compared to Tamil Nadu. In 2011, literacy rate of Adaiyur village was 80.12 % compared to 80.09 % of Tamil Nadu. In Adaiyur Male literacy stands at 87.13 % while female literacy rate was 72.86 %.

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

11.2.8 HYDROGEOLOGY OF THE LEASE AREA

There is Odai is located at a distance of 430m in Southwest direction, Nochimalai Tank- 460m (SE), Kosalai Tank -1.64 km SE, Devanambattu Tank -2.5 Km S of lease area. The hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

There are many tanks located in the study area, which are mostly dry throughout the year. These tanks get water only during monsoons. The factors may be monsoon failure, insufficient rainfall, poor rain water management and water consuming patterns.

11.2.9 GROUND WATER STUDY

For Ground water study, satellite imagery is used. Water levels from monitoring levels are collected through imaging. The pre-monsoon and post-monsoon data are collected and the results are analyzed.

During field visit, it is observed that water is available in wells only after monsoon. The yield is obtained at deep levels only.

As far as the mining lease area is considered, the area is rocky and no major seepage is envisaged. The production quantity is very less and the depth proposed is 36m (6m above ground level 30m below ground level) Hence, there will not be any major impact due to mining on water levels or ground water levels in the area.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental impacts on the following environments are identified.

- Land environment
- Water environment
- Vegetation
- Fauna
- Air environment
- Noise environment
- Socio-economic impacts

11.2.10 LAND ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out upto 36m (6m above ground level 30m below ground level). Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage, 1.69.0 Ha of lease area will be left as rain water harvesting pond. 0.29.0 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indica are selected

WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 3.0 KLD which will be sourced from outside agencies. Negligible sewage will be generated, for which a septic tank with soak pit will be set up.

During monsoon season, the excess rain water, if any, will be led through garland drain of 0.6m width and 0.3 m depth to the collection pond with silt traps.

Since the mining operation will be limited upto depth of 36m (6m above ground level 30m below ground level). there will not be any seepage. However, the rain water percolation and collection of water from seepage shall be less than 300lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.P.Motor. The quality of water is expected to be potable. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water can also be used for plantation purposes

The major water bodies found in the buffer zone are.

Water bodies	Distance	Direction
Odai	430m	SW
Nochimalai Tank	460m	SE
Kosalai Tank	1.64 km	SE
Devanambattu Tank	2.5 km	S
Devananda Tank	1.76 km	NW
Venkikak Tank	2.8 km	SE
Meelnachipattu Tank	7.26 km	NW
Melpadur Chitheri	6.77 km	NW

Narthavadi Tank	8.4 km	NW
Adaiyur Tank	7.8 km	SE

Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made in to these water bodies, there is no major impact. For the canal, adequate safety distance is left. The proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the lease.

It is planned to carryout appropriate rainwater harvesting schemes and artificial recharge schemes in the area.

- Rain water falling in the quarry will be collected efficiently through garland drains.
- Water thus collected will be passed through collection tank with silt traps. This water can be used by the proponent for water sprinkling and for green belt purposes.
- Excess water after desiltation will be provided to downstream users, if any

11.2.12 BIOLOGICAL ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Fauna is affected due to noise and vibration.
- Dust generation due to mining activities
- Change in land use of the lease area
- Accidental falling of animals

Mitigation measures

- 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.
- To reduce dust generation, mist sprayers will be used. During transportation, the material will be covered with tarpaulin. Water sprinkling will be done to reduce generation of pollutants

- After the mine closure stage, the mine pit will be left as rain water collecting tank, which can attract bird population in the nearby areas.
- To prevent entry of animals, the mining area will be properly fenced.

11.2.13 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM₁₀, PM_{2.5}. Other than these pollutants, gaseous emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

The major impacts are Dust emission due to drilling, blasting and transportation. The major mitigation measures include Using Wet drilling methods, Allowing drilling only with PPE, Carrying out blasting only during specified times, Avoiding blasting during unfavourable weather conditions, Using explosives of good quality, Using mist sprayers Regular wetting of transport, Covering the materials carried in tippers with tarpaulin, Proper maintenance of vehicles used for transportation, Conducting regular emission tests for vehicles used for transport Development of greenbelt is proposed in the safety zone 10m barriers in the lease area.

The anticipated data is calculated using AERMOD software and the projected values are found to be within limits.

11.2.14 NOISE ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- ✚ Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area.
- ✚ As per DGMS (Directorate General of Mines Safety) and OSHA (Occupational Safety and Health Administration) limits, the acceptable noise level is 85 dB(A) for an exposure period of 8 hours.
- ✚ Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife.
- ✚ Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus, which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing

Mitigation measures

- ✚ As the distance between the source and receptor increases, the noise level also decreases. Hence, there will be a natural attenuation
- ✚ The proposed has planned to develop green belt in the periphery of the lease area, which diminishes sound volume by dampening them.
- ✚ All the equipment/machinery/trucks involved will be properly maintained to control noise generation
- ✚ Conducting regular health checkups for employees involved
- ✚ Employees will be made to work on shifts to reduce their exposure time
- ✚ Providing earplugs to all employees

By adopting these measures, the noise levels will be maintained well within MoEF & CC limits since the baseline value is low.

11.2.15 VIBRATION: IMPACT AND MITIGATION MEASURES

Impacts

- ✚ 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

Mitigation measures

- ✚ 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 standard as prescribed by the DGMS and MOEF & CC.
- ✚ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive
- ✚ Supervising blasting by competent and statutory foreman/ mines manager

11.2.16 SOCIO ECONOMIC ENVIRONMENT

Impact and Mitigation measures

No land is acquired from anyone. No rehabilitation is needed. Hence, there is no negative impact. The proponent has planned to spend INR 3,00,000 for CER

activities. This amount will be subjected to change after public hearing.

11.2.17 OCCUPATIONAL HEALTH

Impacts

Dust generation due to drilling and blasting, Noise generation due to drilling and blasting, unexpected accidents. Continuous exposure to dust causes Pneumonia, Tuberculosis, Rheumatic arthritis and Segmental Vibration, Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness, Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

- Using dust suppression measures like water spraying on roads to reduce rise of air pollutants
- Providing green belt for air pollutant and noise attenuation
- Ensuring slope stability
- Employing only trained professionals for blasting
- Conducting Pre-Medical Examination for employees before inducting
- Conducting periodical Medical Examination once in 6 months.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

11.2.18 ENVIRONMENTAL MONITORING PROGRAMME

Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation. A schedule is framed with timeline to monitor various parameters during the operation of the project. To evaluate the effectiveness of environmental management programme, regular monitoring of the important environmental parameters will be taken up. Air monitoring will be carried out once in 3 months,

water sample will be collected once in a season, noise will be monitored once in 3 months, soil samples will be analyzed once per season. For EMP, a budget of INR 25.34 Lakhs is allocated.

11.2.19 PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty, GST, etc
- The project will also contribute via CSR.
- The demands of people during public hearing will also be considered by the project proponent

Social benefits

- This project provides employment to 27 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.
- For CSR, INR 3,00,000 is allocated.
- Based on the demand of the people during public hearing, further funds will be allocated, if necessary.

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared an 25.34 lakhs for the 5 years has been allocated as EMP cost. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

CHAPTER 12

DISCLOSURE OF CONSULTANTS

Global Mining Solutions is a NABET Accredited EIA consultant as per NABET certificate : NABET/EIA/26-29/RA 0478. The registered office of Global Mining Solutions is at Plot No.6, S.F.No.13/2 A2, VS City, RC Chettypatty, Kottamettupatty, Omalur, Salem, Tamilnadu-636455.

Declaration by Experts contributing to the proposed Rough stone Quarry over an extent 2.00.0 Ha, while total cluster area of 6.30.0 Ha at Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai 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: October to December 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.

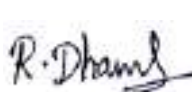
S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and Date
1	AP	Dhanalakshmi Ramanathan	Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation measures for air pollution. <u>Period: October to December 2025.</u>	R. Dhanam
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. <u>Period: October to December 2025</u>	K. Abirami
3	SHW	Ramadoss N	Assessment of waste generated from the project, suggested waste management practices. <u>Period: October to December 2025</u>	C. Ramadoss
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. <u>Period: October to December 2025</u>	K. Sarasvathy
5	EB	Saravanan S	Baseline data collection of related to ecology of the area. <u>Period: October to December 2025</u>	S. Saravanan
6	HG	Ravinthiran N	Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area. <u>Period: October to December 2025</u>	N. Ravinthiran
7	AQ	Srilatha Thiruveedhula	Air quality modeling utilizing the area source model. Predication of the ground level concentration	T. Srilatha

			of the dust. Suggesting suitable mitigation measures. <u>Period: October to December 2025</u>	
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: October to December 2025</u>	R.Dhami
9	LU	Dhanalakshmi Ramanathan	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: October to December 2025</u>	R.Dhami
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: October to December 2025</u>	Sprashant
11	SC	Shisupal Sing	Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil. <u>Period: October to December 2025</u>	Shisupal Sing
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: October to December 2025</u>	Valliappan

DRAFT EIA/EMP FOR THE ROUGH STONE QUARRY OF Tmt.R.KALPANA OVER AN EXTENT OF 2.00.0 HA LOCATED AT THE SF.NO. 49/2 (PART-2) OF ADAIYUR VILLAGE, TIRUVANNAMALAI TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

TM- EC						
S.No	Name of TM (EC)	Sector(s) proposed	Approved (to work under)	Period of involvement	Type of work	Signature
1.	Abirami	1	Manikandan Manickam	Period: March to May 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	Period: March to May 2025	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: March to May 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: March to May 2025.	Assisted by the Expert in preparation of socio-economic report.	
		SC	Shishupal Singh	Period: March to May 2025.	Assisted by the Expert in interpretation of soil sampling and their quality involved in the project.	
3	Mownica Balaji	NV	Dhanalakshmi Ramanathan	Period: March to May 2025.	Associated with the expert team in suggesting control measures for noise and Ground Vibration.	Mownica.B
		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: March to May 2025.	Associated with the expert in selection of base line 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.	

DRAFT EIA/EMP FOR THE ROUGH STONE QUARRY OF Tmt.R.KALPANA OVER AN EXTENT OF 2.00.0 HA LOCATED AT THE SF.NO. 49/2 (PART-2) OF ADAIYUR VILLAGE, TIRUVANNAMALAI TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

5	Suresh Mani	LU	Srilatha Thiruveedhula	Period: March to May 2025.	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		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: March to May 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.	
		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: March to May 2025.	Associated with Experts and involved in Field Investigations, Mapping /Geo-referencing	
8	Abirami Kaliyaperumal	RH	S V Prashant	Period: March to May 2025.	Associated with experts and involved in the identification risk and hazard, suggesting safeguard measures.	
9	Dhanalakshmi Ramanathan	AQ	Srilatha Thiruveedhula	Period: March to May 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	Ramados N	Period: March to May 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		Involved in the identification of source of water and waste generation, suggesting treatment for safe disposal of wastewater	



ANNEXURE-1



File No: 12756
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated: 24/11/2025



To,

Tmt. R. KALPANA
W/o. Manikandan, No.798, Bajanai Kovil Street, Devikapuram, Chepet Taluk, Tiruvannamalai District
- 606902. TAMIL NADU.
manikandankalpana@gmail.com

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

Sir/Madam,

Sub: SEIAA, TN – Proposed Rough Stone quarry lease over an extent of 2.00.0 Ha at S.F. No. 49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu by Tmt. R. Kalpana - under project category – “B1” and Schedule S.No.1(a) “Mining of Minerals Projects” of EIA Notification, 2006, as amended – **ToR issued along with Public Hearing** - preparation of EIA report – Regarding.

Ref: 1. Online proposal No. SIA/TN/MIN/551484/2025, Dated: 13/09/2025.

2. Your application submitted for Terms of Reference dated:19.09.2025.

3. Minutes of the 634th SEAC-1 meeting held on 27.10.2025.

4. Minutes of the 916th SEIAA meeting held on 17.11.2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108TN5338525N
(ii) File No.	12756
(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 QUARRY OF TMT.R.KALPANA
(viii) Name of Company/Organization	R KALPANA
(ix) Location of Project (District, State)	TIRUVANNAMALAI, TAMIL NADU
(x) Issuing Authority	SEIAA
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

1. In view of the particulars given in the Para 1 above, the project proposal inter alia including Form-1 (Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.
2. The above-mentioned proposal has been considered by SEIAA in the meeting held on 17.11.2025. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Tmt. R. Kalpana** 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 Chairperson, 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, Tiruvannamalai District.
6. Stock File.

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.

S. No	Terms of Reference
	2. The PP should submit an affidavit to follow the scientific formation of benches for 5m*5m properly during mining as per the approved mining plan. 3. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within 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

S. No	Terms of Reference
	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

S. No	Terms of Reference
	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.

S. No	Terms of Reference
	41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

3. Seiaa Specific Conditions :

S. No	Terms of Reference
3.1	After detailed discussions, the Authority accepts the recommendation of SEAC-I and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 2,32,622 m³ of Rough Stone up to the depth of 36m (6m AGL + 30m 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-I & normal conditions & the SEIAA Standard conditions.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	<u>Cluster Management Committee</u> - 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. - The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., - 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. - 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. - 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. - 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. - The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. - The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. <u>Agriculture & Agro-Biodiversity</u> - Impact on surrounding agricultural fields around the proposed mining Area. - Impact on soil flora & vegetation around the project site.

S. No	Terms of Reference
	11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. <u>Forests</u> 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. <u>Water Environment</u> 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: - Hydrothermal/Geothermal effect due to destruction in the Environment. - Bio-geochemical processes and its foot prints including Environmental stress. - Sediment geochemistry in the surface streams. <u>Energy</u> 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. <u>Climate Change</u> 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature

S. No	Terms of Reference
	rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. <u>Mine Closure Plan</u> 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. <u>EMP</u> 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. <u>Risk Assessment</u> 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. <u>Disaster Management Plan</u> 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. <u>Others</u> 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee

S. No	Terms of Reference
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
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 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
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 area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished

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1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-

S. No	Terms of Reference
	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 Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the

S. No	Terms of Reference
	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
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

S. No	Terms of Reference
	environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area



STANDARD TERMS OF REFERENCE

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

proposed safeguard measures in each case should also be provided.

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

the Standing Committee of National Board of Wildlife and copy furnished.

- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The

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

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

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

proposed Project.

- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
 - a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

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

- increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
 15. A specific study on agriculture & livelihood shall be carried out and reported.
 16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
 17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
 18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
 19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
 20. Likely impact of the project on air, water, land, flora-fauna and nearby population
 21. Emergency preparedness plan in case of natural or in plant emergencies
 22. Issues raised during public hearing (if applicable) and response given
 23. CER plan with proposed expenditure.
 24. Occupational Health Measures
 25. Post project monitoring plan
 26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
 27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
 28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
 29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
 30. Reserve funds should be earmarked for proper closure plan.
 31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

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



ANNEXURE-2



ANNEXURE

I

ப.ச.ம.எண். 11/சென/ப.ம.2025

துவணை மதுவிலக்கு அலுவலகம்.

மதுவிலக்கு அலுவலகம், திருவண்ணாமலை.

திருவண்ணாமலை

நாள் 11/11/24/25

அறிவிக்கை

பெயர்: கைப்பிடிப்பு குவாண்டம் - சிறுசெய்ய -
கைப்பிடிப்பு - (மின்சார்பு பொது வரைவு (E-Auction) -
திருவண்ணாமலை மாவட்டம் மற்றும் வட்டம் -
ஆடைபுழை சிறப்பு புல எண். 49/2 (பகுதி-2) 2000
ஹெக்டேர் பரப்பில் கைப்பிடிப்பு அமைக்க ஏலம்
விடப்பட்டது - அதிபர் ஏலத்தொகை கோரிய திருமதி
கல்யாண என்பவர் பெயரில் ஏலம் கைப்பிடிப்பு
செய்யப்பட்டது - முழு ஏலத்தொகையையும்
செலுத்தப்பட்டுள்ளது - கைப்பிடிப்பு அறிவிக்கை மற்றும்
அறிவிப்பு தாக்க மதிப்பீட்டு ஆணையை தயாரிப்பதில்
உள்ளு பெற்று கைப்பிடிப்பு அறிவிக்கை - தொடர்பாக.

- பெயர்: 1. திருவண்ணாமலை மாவட்ட அரசிதழ் சிறப்பு
வெளியீடு எண். 03, நாள். 04.12.2024.
2. மின்சார்பு ஏல நாள். 08.01.2025.
3. திருவண்ணாமலை கைப்பிடிப்பு நக.எண்.963/கைப்பிடிப்பு/2024-1.
நாள். 10.01.2025.
4. திருவண்ணாமலை கைப்பிடிப்பு இதை எண். நாள். 13.01.2025.
5. திருமதி கல்யாண, க/பெயர்வைக்கடன் என்பவரின்
கைப்பிடிப்பு நாள்.13.02.2025.

கைப்பிடிப்பு

திருவண்ணாமலை மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண். 03, நாள்.
04.12.2024 மூலம் திருவண்ணாமலை மாவட்டத்திற்குட்பட்ட அரசு பூங்காக்கு
பின்புலத்தில் கைப்பிடிப்பு அமைக்கப்படுக தகுதி வாய்ந்த கைப்பிடிப்புக்கு
மின்சார்பு ஒப்பந்தப்பள்ளி டெண்டர்/ஏலம் குறித்த அறிவிப்பு வெளியிடப்பட்டது.

மேற்படி அரசிதழில் கைப்பிடிப்பு எண்.1ல் கைப்பிடிப்பு திருவண்ணாமலை மாவட்டம்
மற்றும் வட்டம், ஆடைபுழை சிறப்பு புல எண். 49/2 (பகுதி-2)ல்
2000 ஹெக்டேர் பரப்பில் கைப்பிடிப்பு செய்ய 5 ஆண்டுகளுக்கு குத்தகை உரிமை
வழங்க, இவ்வண்ணம் மூலம் விண்ணப்பங்கள் கையாடப்பட்டு, 08.01.2025
அன்று ஏலம் நடைபெற்றதில் ரூ.175,00,000/- (ரூபாய் ஒரு கோடியை எழுபத்து
ஐந்து லட்சம் மட்டும்) ஏலம் கோரிய திருமதி ஆகக் கல்யாண என்பவர் உயர்ந்தபட்ச
ஏலத்தொகை தேர்ந்தெடுக்கப்பட்டுள்ளது.

R. Kalpana



வழங்க உரிய நடவடிக்கை மேற்கொள்ளப்படும் என்ற விடரம் தெரிவிக்கப்படுகிறது.

நிபந்தனைகள்

1. அருகில் உள்ள மட்டா மற்றும் புறம்போக்கு நிலங்களுக்கு முறையே 7.5 மீ. மற்றும் 10 மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
2. நிலையான அமைப்புகளுக்கு (நீர் நிலைகள், நெடுஞ்சாலைகள், மின் சாதனங்கள், இரயில் பாதைகள்) 50 மீ. பாதுகாப்பு இடைவெளி விட வேண்டும்.
3. அருகில் உள்ள நிலங்களுக்கும் மற்றும் பொதுமக்களுக்கும் எவ்வித பாதிப்பின்றி குவாரிப்பணி மேற்கொள்ள வேண்டும்.
4. குவாரிப்பணி ஆரம்பிப்பதற்கு முன்பாக குத்தகை உரிமம் வழங்கப்பட்ட புலத்தினை சுற்றி முள்கம்பி வேலி அமைத்து குத்தகை காலம் முழுவதும் பாதுகாத்து வை வேண்டும்.
5. பாறைகளை தகர்க்க கைத்துறைப்பான்களை கொண்டு பாறைகளை துறைவிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
6. குவாரிப்பணியினை விஞ்ஞானப்பூர்வமானதும் முறையானதும் மேற்கொள்ள வேண்டும்.

மேலும், 'சுலதாஜ் இவ்வறிவிப்பு கிடைக்கப்பெற்ற 90 நாட்களுக்குள் மேற்கொள்ள நிபந்தனைகளை குறிக்கும் வகையில் வரையு களங்கத்திட்ட அறிக்கை தயார் செய்து துணை இயக்குநர், புனிமியல் மற்றும் சுரங்கத்துறை, திருவண்ணாமலை அலுவலகம் ஒப்புதல் பெற சமர்ப்பிக்குமாறு அறிவுறுத்தப்படுகிறது.

[Signature]
11.03.24
துணை இயக்குநர்.

புனிமியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை.

[Signature]
11.03.24

பெறுநர்
திருமதி.ஆர்.கல்பணா,
க/பெ.மணிகண்டன்,
எண்.798, பஜனை கோவில் தெரு,
தேவிகவுளம், சேத்துப்பட்டு வட்டம்,
திருவண்ணாமலை - 606 902.

R. Kalpana



TIRUVANNAMALAI DISTRICT GAZETTE

EXTRAORDINARY PUBLISHED BY AUTHORITY



TIRUVANNAMALAI, WEDNESDAY, DECEMBER 4, 2024.

No. 3]

Karthigai 19, Kurothi, Thiruvalluvar Aandu 2055.

NOTIFICATION BY THE COLLECTOR

(Rc.No 363/Mines/2024, Dated: 03-12-2024)

E-mail: (minesntvm10@gmail.com)

Notice Inviting Tender (NIT)

"Inviting Application for Grant of Rough stone Quarry Leases in Government Lands"

In exercise of the power conferred by Section 15 of Mines and Mineral (Development & Regulation) Act, 1957 and in accordance with the Rule 8 of the Tamil Nadu Minor Mineral Concession Rules, 1959 read with G.O. Ms. No.29, Natural Resources (MMC.1), 31st July 2024 as amended from time to time notified thereunder, the District Administration of Tiruvannamalai District, Tamil Nadu has identified 9 (nine) areas in Tiruvannamalai District for grant of leases to quarry Rough stone through electronic tender / auction (e-tender / auction)

E-tender with forward bidding is invited through the e-tendering portal by District Collector, Tiruvannamalai District for the grant of quarry lease in Government Lands for quarrying "Rough Stone" available in Tiruvannamalai District as indicated in the Annexure-I

The tender process is online at e-portal URL, address <https://ntenders.gov.in>. Aspiring bidders may download and go through the tender document available in the site to know the details of e-auction process. Intending bidders are advised to visit the mentioned site regularly till closing date of E-auction for any corrigendum / addendum / amendment.

Tiru Dist. Gazt. Extra 3

தருவணமலை, கருத்தி, திருவள்ளுவர் ஆண்டு 2055

R. Kalpana



Prospective bidders are advised to get themselves registered at Tamil Nadu tender portal obtain login ID & password and go through the instructions available in the Home page after log in to the Tamil Nadu Tender Portal. <https://intenders.gov.in> They should also obtain Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application.

Application Fee - Rs.5,000 (Non - Refundable) for each quarry

Bid submission start date : 09-12-2024 from 11.00 hrs
Bid Submission end date : 26-12-2024 up to 16.00 hrs
Financial bid opening and live e-auction date : Will be intimated later on through Tamil Nadu e-Tender portal

Tiruvannamalai
 3rd December 2024

D. BASKARA PANDIAN,
 District Collector,
 Tiruvannamalai.

R. Kalpana

**ANNEXURE - I**

List of Areas identified in Government Lands in Tiruvannamalai District of Tamil Nadu for
Grant of Rough Stone Quarry Leases through e-Auction

Sl.No.	Village	S.F.No.	Extent (in Ha.)	Land Classification	Lease Period (in Years)
TIRUVANNAMALAI TALUK					
1	Adaryur	49/2 (P-2)	2.00.0	Kallanguthu	5 Year
2	Melkachirapattu	113 (Part)	1.00.0	Para	5 Year
3	Pavupattu	6/1 (Part)	1.00.0	Unreserved Forest	5 Year
4	Athipadi	45/2C (P-6)	1.00.0	Kallanguthu	10 Years
5	Athipadi	45/2C (P-7)	1.00.0	Kallanguthu	10 Years
CHENGAM TALUK					
6	Se Agaram	21 (Part)	1.00.0	Kallanguthu	10 Years
THANDARAMPATTU TALUK					
7	Tharadapattu	32/3A(part)	1.00.0	Kallanguthu	10 Years
8	Tharadapattu	129 (part)	1.50.0	Malai	10 Years
9	Royandapuram	292/1A	1.77.5	Kallanguthu	10 Years
Total			11.27.5		

Tiruvannamalai,
3rd December 2024.

D. BASKARA PANDIAN,
District Collector,
Tiruvannamalai

R. Kalpana



THE DISTRICT COLLECTOR, TIRUVANNAMALAI DISTRICT.

Rc.No.363/Mines/2024, Dated 05.12.2024.

Notice Inviting E-Tender Application for the Grant of Quarry Lease for quarrying Rough stone in Government lands situated in Tiruvannamalai District under e-Tender system as per Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959.

Application Fee Rs.5,000/- (Non-refundable)

DATE AND TIME OF OPENING

Technical Bid Starts	: 09.12.2024 1100 hrs
Financial Bid	: Will be informed later.
EMD	: As per Annexure -I

R. Kalpana

PAR E T OF G OLOGY A D
TI UV ALA

E-Mail:

AND GUIDEL NES TO TENDERERS
(Tender Document)

In exercise of the power conferred by Section 15 of Mines and Mineral (Development & Regulation) Act, 1957 and in accordance with the Rule 8 of the Tamil Nadu Minor Mineral Concession Rules, 1959 read with G.O. Ms. No.21, Natural Resources (MMC.1), 31st July 2024 as amended from time to time notified there under, the District Administration of Tiruvannamalai District, Tamil Nadu has identified 9 areas in Tiruvannamalai District for grant of leases to quarry Rough stone through electronic tender /auction (e-tender / auction).

E-tender with forward bidding is invited through the e-tendering portal by the District Collector, Tiruvannamalai for grant of quarry leases for quarrying "Rough Stone" in Tiruvannamalai District as indicated in the Annexure I of this tender document.

The tender process is on line at e-portal URL (Universal Resources Locator) address <https://tntenders.gov.in>. Aspiring bidders may download and go through the tender document. The URL for online bid submission in e-tender is
Intending bidders are advised to visit the mentioned site regularly till closing date of E-auction for any corrigendum / addendum / amendment.

R. Kalpana



Prospective Bidders are advised to get themselves registered at Tamil Nadu Tender portal, obtain 'login ID' & 'password' and go through the instructions available in the Home page after log in to the Tamil Nadu Tender Portal <https://tenders.gov.in>. They should also obtain **Digital Signature Certificate (DSC)** in parallel which is essentially required for submission of their application.

1. IMPORTANT INFORMATION:

- a) This E-Auction/Tender Document has been issued pursuant to notification of areas with the intent to carry out e-auction for grant of Quarry Leases for Rough stone as mentioned in the Annexure -I pursuant to the Act and the rules framed there under. All information provided in this E- Auction/Tender Document should be read together with the Act and the rules framed there under. In the event of a conflict between this E- Auction/Tender Document and the Act or the rules, the Act or the rules (as amended from time to time), as the case may be, shall prevail.
- b) The information contained in this E-Auction/Tender Document or subsequently provided to Bidder(s), whether in documentary or any other form by or on behalf of Competent Authority or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this E-Auction/Tender Document.
- c) The purpose of this E-Auction/Tender Document is to provide interested parties with information that may be useful to them in making their bids pursuant to this E-Auction/Tender Document. This E-Auction/Tender Document includes statements which reflect various assumptions and assessments



arrived at by the competent authority in relation to the mineral source and information collated from various sources, some of which may depend upon interpretation of Applicable Law.

- d) The assumptions, assessments, statements and information contained in the E-Auction/Tender Document may not be complete or adequate. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this E-Auction/Tender Document.
- e) The Competent Authority shall have no liability or responsibility to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this E-Auction/Tender Document or otherwise. The Competent Authority also accepts no liability of any nature howsoever caused arising from reliance of any Bidder upon the statements contained in this E-Auction/Tender Document.
- f) The Competent Authority may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this E- Auction/Tender Document.
- g) The issue of this E-Auction/Tender Document does not imply that the Competent Authority is bound to select a Bidder as



Selected Bidder for the mineral Rough stone and the District Collector/Assistant Director of Geology and Mining reserve the right to reject all or any of the Bidders or bids without assigning any reason whatsoever.

- h) Each Bidder shall bear all its costs associated with or relating to the preparation and submission of its bid.
- i) It shall be deemed that by submitting a bid, the Bidder has undertaken a complete and careful review of the E-Auction/Tender Document and unconditionally and irrevocably accepted the terms and risks thereof.
- j) In case the day of completion of any requirement is falling due on a public holiday, the day of completion shall be deemed to be due on the next successive working day. The expression "public holiday" includes Saturday, Sunday and any other day declared to be a public holiday by the Central Government or the State Government, as the case may be
- k) Bidder shall be responsible for any problem at the Bidder's end which may cause inconvenience or prevent the Bidder from bidding in e-auction, such as, but not limited to, failure of electricity, loss of internet connection, any trouble with Bidder's computer, etc.
- l) This Tender Document is not chargeable.

1. A) Eligibility to participate:

- a) The applicant shall be an Indian National or a Company as defined in clause (20) of section 2 of the Companies Act 2013 (Central Act 18 of 2013) and domicile of Tamil Nadu having business and corporate office in Tamil Nadu.
- b) In case of a firm or other Association of persons, only if all the



members of the firm or members of the Association are citizens of India; in case of an individual, only if he / she is a citizen of India.

- c) In case of a firm or other association of persons, only if all the members of the firm or members of the Association are residing or doing business with an established office or corporate office in Tamil Nadu for a minimum period of five years.
- d) In case of an individual, only if he / she shall reside or doing business with an established office in Tamil Nadu for a minimum period of five years.
- e) The Applicant shall not have any dues, namely, mining dues, income tax dues, Goods and service Tax dues etc., to be paid to the Government.
- f) The applicant shall obtain a valid mining dues clearance certificate from the Assistant Director of geology and Mining where the quarrying or mining lease area is situated, in the form prescribed in Appendix-VIII of the Tamil Nadu Minor Mineral Concession Rules 1959.
- g) The applicant shall satisfy such other conditions as specified in this tender document.
- h) Bidders may be Proprietorship/Partnership Firm (including LLP)/Company as defined under the Companies Act, 1956 and as amended Act 2013 and should necessarily be an Income Tax Assesses and should be GST Registered Company.
- i) Bidder should have valid PAN and GST numbers.
- j) The applicant shall not have any dues, namely, Income tax dues, Goods and service Tax dues, etc., to be paid to the government.



k) Affidavit for furnishing the details of mineral - wise areas in each district of the State in respect of which the applicant himself or jointly with any other person has —

- I. Already held a quarrying lease or quarrying permission
- II. Already applied for grant of lease, but not yet granted; and
- III. Applied for the grant of lease simultaneously.

2. **e-TENDER WITH FORWARD BIDDING:**

- a) The details of the areas offered under the e-Tender with forward bidding for grant of Rough Stone quarry lease is given in the **Annexure -I.**
- b) The e-auction shall be an ascending forward online electronic auction and shall comprise the following rounds namely, a technical bid with Initial Price offer (1st round of e-auction) and offering of eligible bid amount (greater than the floor price) at e-auction with forward bidding (2nd round of e-auction).
- c) The bidders shall first submit their e-tenders and subject to their technical qualification, they shall take part in the e-auction with forward bidding when the live forward bidding is opened. During the stipulated date & time as in the critical data sheet **Annexure-V.**
- d) The date & time period of live e-auction with Forward bidding through the <https://Intenders.gov.in> portal will be intimated through the Tamil Nadu e-Tender portal / email after evaluation of the Technical and Financial bid.
- e) Only those bidders whose Initial tender price offered is greater than the reserved price and on fulfillment of other terms and



conditions of eligibility specified in the Gazette published and this tender document shall be considered as the Technically qualified bidders eligible to participate in the further round of e-auction.

- f) Whenever the number of Technically qualified bidders are more than ten, the first ten highest bidders shall be eligible for participating in the second round of e-auction, and if the number is less than 10, all the technically qualified bidders will be eligible for participating in the 2nd round of e-auction.
- g) If the number of bidders qualified to participate in the 2nd round of e-auction with forward bidding is less than three for a subject item, e-auction process shall be annulled for that item.
- h) The bidders shall quote an amount in multiples of one lakh rupees, over and above the reserve price, as auction price for the grant of quarry lease.
- i) The highest initial bid price offered amongst the qualified bidders quoted over and above the reserve price will be the floor price for the 2nd round of e-auction.
- j) The qualified bidder who offers the highest final price in the e-auction with forward bidding shall be declared as the successful bidder immediately on conclusion of the e-auction.
- k) The e-auction process for the subject item shall be annulled if none of the technically qualified bidders offer a final price or a price higher than the floor price for that item on the online e-auction platform.
- l) If there are any clarifications, the same may be obtained online through the e-Portal or through the contact details given in the tender document. Bidder should take into account of the corrigendum addendum published, if any.



before submitting the bids through online.

- m) Tender inviting authority will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to any technical issues.
- n) The time that is displayed from the server clock at the top of the tender portal, will be valid for all actions of bid submission, bid opening, e-auction with forward bidding etc.,
- o) E-tender / e-auction with Forward bidding cannot be accessed after the due date and time for bid submission.
- p) All notices and correspondence to the bidder(s) will be sent by email only, during the process till finalization of tender with forward bidding. Hence the bidders are required to ensure that their email address provided at the time of registration is valid and updated. Bidders are also requested to ensure validity of their DSC.
- q) Bidders are advised to see the website regularly to remain updated with latest information to ensure that they do not miss out any corrigendum / addendum uploaded against the said e-Tender with forward bidding. The responsibility of downloading the related corrigendum, if any, will be that of the bidders.
- r) All electronic bids submitted during the e-Tender with forward bidding process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Tender inviting authority will form a binding contract between TIA and the Bidder.
- s) It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system.
- t) Tender Inviting Authority reserves the right to cancel or reject or



accept or withdraw or extend the tender with forward bidding in full or in part as the case may be without assigning any reason thereof.

- u) The server time shall be treated as final and binding. Bids recorded in the server before the bid closing time will only be treated as valid bid. Bidders are, therefore, advised to submit their bids well before the closing time of e-tender cum auction. If any bid reaches the server after the bid closing time as per server time, the same will not be recorded and no complaint in this regard shall be entertained.
- v) Bidders are advised to exercise caution in quoting their bids in e-Tender with forward bidding to avoid any mistake. Bids once submitted can't be recalled after bid closing time.
- w) Tenders shall be subject to all the conditions stipulated in the Tender specification. Any other conditions of counter offers stipulated by the bidders in their tender will not be accepted.

3. PAYMENTS AND OTHER CONDITIONS:

- a. Any person interested to participate in the e-auction for an item/ number of items, shall pay through online a non-refundable application fee of Rs.5,000/- (Rupees five thousand only) for each item they intend to apply.
- b. Every bidder shall, while applying for an item/ number of items, shall pay online, The refundable bid security amount equal to 1% of the value of the estimated resources or Rs.10,00,000/- (Rupees ten lakhs only) for fresh rough stone quarries and Rs.5,00,000/- (Rupees five lakhs only) for other quarries, whichever is higher for each item they intend to apply.
- c. On declaration of the name of the successful bidder, the successful bidder shall pay 10% of the bid amount as initial



payment through electronic clearance service (ECS) within 24 hours of such declaration. If the 24 hours limit happens to be a bank holiday, the payment shall be made on the immediate next working day of the bank.

- d. If the declared successful bidder fails to pay the 10% of the bid amount within 24 hours, his/ her bid shall be rejected and the bid security amount paid by him / her shall be forfeited to the Government within two days.
- e. The declared successful bidder on payment of the 10% of the bid amount shall pay the remaining 90% of the bid amount, deducting the bid security amount already paid, through electronic clearance service (ECS), within one month from the date of declaration. If the bidder fails to do so, the 10% of the bid amount already paid by the successful bidder along with the bid security amount shall be forfeited to the Government within one week.
- f. On such rejection, the District Collector or the Assistant Director of Geology and Mining, as the case may be, shall declare the next highest bidder as the successful bidder immediately and shall direct him to pay the 10% initial payment within 24 hours through Electronic Clearance Service (ECS). If the 24 hours' limit happens to be a bank holiday, the payment shall be made on the immediate next working day of the bank.
- g. The successful bidder should submit a solvency certificate of immovable properties for a value not less than 20% of the bid amount within one month from the date of declaration from the District Collector or the Assistant Director.
- h. On receipt of payment of the balance 90% of the bid amount



from the successful bidder, in the case of rough stone the Assistant Director of Geology and Mining shall, communicate the precise area for grant of lease within fifteen days to the successful bidder, with a direction to submit mining plan within ninety days from the date of receipt of communication and to submit Environmental Clearance, for grant of quarry lease. All such communication of precise area shall be accompanied by the map showing the area attested by the Tahsildar and Assistant Director of Geology and Mining concerned.

- i. if the successful bidder fails to submit the mining plan for approval within ninety days, and the Environment Clearance, as specified in sub-clauses (a) and (d) of the said rule, as the case may be from the date of communication of the precise area for the grant of lease, the precise area communication shall be deemed to be cancelled and the payments made so far shall be forfeited to the Government.
- j. TIA will not be responsible for any sort of difficulties or delay faced by the bidder during the online payment.
- k. Any other mode of payment other than ECS (Electronic Clearance Services) shall not be accepted.
- l. In case of unsuccessful bidders, on conclusion of the e-auction process, the bid security amount paid by the persons other than the successful bidders shall be refunded automatically to bidders through "Pooling Account" of the State Government only. Tender Inviting Authority is no way responsible for refund of bid security amount to the unsuccessful bidders.



4. SUBMISSION OF e-TENDER:

Bidder has to select the payment option as "pay online" to pay the Tender Application fee and bid security amount. Only after payment of Tender Application fee and bid security amount, bidder will be able to encrypt/upload their bids. In order to avoid last minute lapses, it is recommended to make payment and submit the bid as early as possible.

Cover-1 named "Technical bid":

The bidder shall upload the scanned copies of the following:

- ✓ Annexure II duly filled & signed (Tenderer name, Full Postal address & contact details to be filled legibly without fail).
- ✓ Annexure III duly filled and signed.
- ✓ Scanned copy of Aadhar card.
- ✓ Scanned copy of GST Registration Certificate.
- ✓ Scanned copy of PAN Card.
- ✓ Scanned copy of Certificate of Registration.
- ✓ Affidavit for no mining dues / no mining due clearance certificate obtained from competent authority.

Cover -2 named "Financial bid":

The bidder shall download the BOQ (Bill of Quantities) template available under "Details of price quoted" and fill up the name of the bidder & the rates offered for each item in relevant column. After filling the details, the bidder should save it and upload without changing the file name.

Note: The rates quoted shall be exclusive of Seigniorage fee, DMFT, Green fund, GST and other taxes and levies imposed by the Government then and there. The same will have to be paid additionally by successful bidder.



5. FORCE MAJEURE:

In case, the terms contained herein or in the order cannot be performed either by the bidder or TIA for any reason arising out of the laws/regulations / restrictions governing mining industry, natural calamities, war/hostility, military operation of any character, civil commotions, sabotage, Pandemic, riots, quarantine restriction, acts of Government embargoes, the Successful Bidder shall not be entitled for any compensation.

6. NON ASSIGNABILITY:

The letter of confirmation issued to successful bidder is not transferable or assignable in whatsoever manner. Tender inviting Authority will not entertain any third party nominee/ assignee in whatsoever manner on behalf of the Successful Bidder.

7. TRACK THE WEBSITE:

Intending bidders are advised to visit <https://tntenders.gov.in> regularly till closing date of e-auction for any corrigendum / addendum / amendment.

8. DISCRETION:

- a) The tender accepting authority, reserves the right of rejection / cancellation of all or any of the tenders without assigning any reason thereof or split up the tender as deemed fit.
- b) The tender accepting authority, reserves the right to cancel the bid even after acceptance or during performance of the contract.
- c) The tender accepting authority reserves the right to alter/modify any of the above tender conditions before the award of the tender.



10. GRANT OF QUARRY LEASE

On completion of the above process, a quarry lease shall be granted to the successful bidder subject to the provisions of these rules,—

- a. By the Assistant Director of Geology and Mining concerned.
In the case of the minor minerals, namely, rough stone, the period for grant of quarry lease for rough stone in respect of areas which have not been subjected to quarrying so far, shall be ten years. The period of lease for quarrying rough stone in respect of other areas shall be five years.
- b. The lessee shall deposit ten percent of the bid amount as security deposit before execution of the lease deed:
- c. The Quarry Lease Deed shall be executed in the form in Appendix-I to these rules by the lessee with the Assistant Director of Geology and Mining in respect of all minor minerals except granite and the minor minerals specified in the Appendix-I-B, within a period of two months from the date of receipt of the order from the Assistant Director.
- d. The lease deed executed shall be registered under sub-section (1) of section 17 of the Indian Registration Act, 1908 (Central Act XVI of 1908).
- e. The lease period shall commence from the date of registration of the lease deed and shall expire on the date specified in the lease deed and in no case, extension of the period of the lease shall be made.
- f. Whenever the lessee fails to execute the lease deed within



specified time, the State Government may cancel the order granting the lease to him and all amounts paid by him shall be forfeited to the State Government;

- g. No lessee is entitled to raise any dispute with reference to the survey and demarcation of the area leased out to him after execution of the lease deed;
- h. No lessee shall commence any quarrying operation in any area without executing and registering the lease deed;
- i. if any new mineral is discovered in the quarry lease area granted under this rule, the holder of quarry lease shall report to the District Collector or the Assistant Director of Geology and Mining, as the case may be, as specified in rule 26 of Tamil Nadu Minor Mineral Concession Rules, 1959;

The lessee shall, besides the one-time payment of the bid amount, pay seigniorage fee or dead rent whichever is higher in respect of the actual quantity of the mineral removed or consumed at the rates prescribed from time to time in Appendix-II to these rules. Further, the lessee shall pay contribution to the District Mineral Foundation Trust Fund, Green Fund and such other levies at the rates as may be specified by the State Government from time to time.

Further the bidder should furnish their Permanent Account Number (PAN) in their offer. IDS / TCS deductible as per section 194Q and 206 C (IH) of IT Act, 1961 will be followed.

11. CONDITIONS FOR CARRYING OUT QUARRYING OPERATIONS.

- (a) The date of commencement of the period for which the quarry lease is granted under this Rule shall be the date on which the lease deed is registered.



- (b) Before execution of the lease deed the successful bidder/tender applicant shall deposit as security @ Ten percent (10%) of the bid/tender amount for which the lease has been granted by the State Government.
- (c) No lessee is entitled to raise any dispute with reference to the survey and demarcation of the area leased out to him after execution of the lease deed.
- (d) The lease shall expire on the date specified in the lease deed and in no case extension of the period of the lease shall be made.
- (e) No lessee shall commence any quarrying operation in any area without executing the lease deed. No lessee shall continue quarrying in the area after the expiry of the stipulated lease period. If any quarrying or transportation of the mineral is done without complying with or in violation of the above conditions, it shall be treated as illicit quarrying and illicit transportation and the lessee is liable to be punished for the offence without prejudice to any other actions that can be taken on the person as provided in these Rules or the Act.
- (f) The lessee shall remove and transport the mineral from the leasehold area after obtaining transport permit from the Deputy / Assistant Director of Geology and Mining and complying with the other conditions stipulated in these Rules.
- (g) The lessee shall not quarry any other mineral other than the purpose for which the lease is granted. If, any other mineral / valuable metal is found to be noticed, the quarrying operation shall be stopped at once and intimated to the District Collector / Government.
- (h) The lessee shall not without the previous consent in writing of the State Government assign, sublet, mortgage or in any other manner transfer the quarrying lease as specified in Rule-36 F of Tamilnadu Minor Mineral Concession Rules, 1959.
- (i) The lessee shall keep correct accounts showing the quantity and other particulars of all minerals quarried and transported from the quarry site. The lessee shall also allow any officer



authorized by the State Government or the Director of Geology and Mining or the District Collector in this behalf to inspect the quarry and verify the records and accounts and to furnish such information and returns as may be required by him.

- (j) The lessee shall carryout the quarrying operations in a skillful, scientific and systematic manner keeping in view the proper safety of the labour, conservation of minerals and preservation of the environment and ecology of the area.
- (k) The lessee shall allow any officer authorized by State Government, or the Director of Geology and Mining, or the District Collector concerned to enter upon the leasehold area and inspect for the purpose mentioned in clause (a) and for any other purpose which may be required for compliance of the provisions of the Act and these rules or any other Act or Rules framed by the Central Government or the State Government.
- (l) The Lessee shall at his own expense erect the boundary of the quarry lease area according to the map in the approved mining plan with a concrete pillar as stipulated under rules and, at all times, maintain and keep such boundary marks in good repair.
- (m) The lessee shall make a display board in front of the Quarry, mentioning the name of the lease holder and the full details of the lease.
- (n) The Lessee shall abide by all the conditions of Quarry Lease as provided under Rule 36 of the TNMMCR, 1959.
- (o) For any violation of provisions under the TNMMCR, 1959 and its Amendments, the lessee shall be held responsible and shall be liable for appropriate legal action.
- (p) The Competent Authority shall have the power to rectify any error or corrections in the present E-Auction/Tender notification.
- (q) The Competent Authority reserves the right to cancel the E-Auction/E-Auction/Tender process without assigning any reasons thereof.



12. OTHER CONDITIONS

- i. The period for which the area granted on lease for quarrying under this rules will be mentioned in the lease deed.
- ii. The quarrying lease will be granted only in the name of the successful Tenderer/bidder declared by the District Collector/Assistant Director of Geology and Mining.
- iii. No quarrying activities shall be commenced before the registration of the lease deed agreement.
- iv. The Executed lease deed shall be registered at the cost of the lessee.
- v. While quarrying no hindrance shall be caused to the adjoining pattadars and publics.
- vi. The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch without any encroachments.
- vii. The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lease holder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.
- viii. The lessee should make his/her own arrangement to form the approach road from the public road to the place of the quarry.
- ix. The lessee shall abide to all the provisions of Mines and Minerals (Development and Regulation) Act, 1957, The Metalliferous Mines Regulations 1961 or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
- x. Quarry lease area should be demarcated state on ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar with DGPS reading shall be erected before commencement of quarrying and it should be maintained throughout the period of lease.



- xi. No quarrying shall be made within the safety distance of 7.5 mts to the adjacent patta lands and 10 mts to the adjacent Government Paramboke land.
- xii. Pit Mouth register should be maintained in the quarry site.
- xiii. A minimum distance of 50 mts. from any Electric / Telephone lines, Railway line, Reservoir canal, National highways and other public works shall be kept from the periphery of any excavation area and 10mts safety distance to the village roads shall be kept and maintained during the entire lease period.
- xiv. Quarry operations shall be carried only after appointing Mines Manager/Mines Mate and it should be carried out on the supervision of Mines Manager/Mines Mate.
- xv. Notice of opening of the quarry should be sent to the Director of Mines safety, Chennai.
- xvi. In any accident occur in the quarry area the lessees should give Intimation to the Director of Mines safety Chennai and District Collector concerned at once and lessee is solely responsible for any violation.
- xvii. The lessee should get the consent for establishment and for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.
- xviii. The conditions imposed by the TNPCB in the consent order should be adhered without any omission.
- xix. The Environmental clearance and the consent of the TNPCB should be renewed periodically without any lapse.
- xx. If any quarrying is found in the area granted on lease before the date of execution of lease deed, the lease is liable to be cancelled and criminal action will be initiated.
- xxi. No lease granted under this rule shall be extended.
- xxii. The lessee shall provide safety distance in the area as per the rules in force or any rule which may be imposed by Government. He must also take up all safety measures as directed by the Government at his own cost.



13. SPECIFIC CONDITIONS

- i. It is the responsibility of the bidders to inspect the notified Rough Stone quarry area to verify and analyse the quantities and quality of such Rough Stone offered under the e-auction and to satisfy themselves of the prevailing site conditions for the purpose quarrying and transporting the said Rough Stone, before quoting their bid on e-Auction platform.
- ii. No disputes shall be entertained after submission of bids, regarding.
 - ✓ Volume of Rough Stone.
 - ✓ Site Condition
 - ✓ Accessibility/approach roads/Logistics.
 - ✓ Supporting infrastructure and any other issue that relates to any matter between the time of making the bids quarrying and transportation of the Rough Stone.
- iii. if anything found that the bidder has furnished false information or concealed any vital information in the affidavit, his bid shall be considered invalid;
- iv. if it is found out after the grant of lease that the lessee has furnished false information (or) concealed any vital information in the affidavit, the lease shall be terminated with immediate effect;

14. SPECIAL CONDITIONS

- I. The Government reserves the right to accept or reject any or all tender / bid applications either in part or in full without any liability to the Government or any of the officers of the Government.
- II. The authority for acceptance of tender / bid shall rest with the Government. The Government do not bind themselves to accept the highest or any other tender / bid applications.
- III. The applicants participating in the tender / bid either should have (or) shall obtain a valid Permanent Account Number issued by the Income Tax department of Government of India.



- iv. At the time of obtaining transport permit the lessees shall have to pay as 2% as TDS to Income Tax Department on the total Seigniorage Fee paid for the applied volume of mineral.
- v. The Lessee shall pay 10% of the seigniorage fee as Green Fund, for the minerals transported within the State and 50% of the seigniorage fee for the minerals transported outside the State.
- vi. The lessee shall strictly adhere to the statutory and safety requirements.
- vii. The waste materials generated during quarrying operation shall be dumped only within the area granted under lease.
- viii. Quarrying shall be done as per the approved Mining Plan and as such laws made by the Central Government/State Government and any other notifications issued then and there.
- ix. The lessee/grantee shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.
- x. Any other conditions stipulated by other Statutory/Government authorities shall be complied with.


05/12/2024
DISTRICT COLLECTOR,
TIRUVANNAMALAI

 
For any technical assistance with regard to e-tendering, the bidders may contact the following official on all working days:-

Assistant Director,
Dept. of Geology and Mining,
Collectorate,
Tiruvannamalai.
Mobile No: 9790615044 & 9080929741

ANNEXURE -I**Rc.No.363/Mines/2024****Dated: 05.12.2024****THE DETAILS OF THE AREAS FOR GRANT OF ROUGH STONE QUARRY
LEASES IN TIRUVANNAMALAI DISTRICT THROUGH
e-Tender WITH FORWARD BIDDING****1. TIRUVANNAMALAI TALUK**

Sl.No.	Village	S.F.No.	Extent (In Ha.)	Land Classification	Lease Period
1	Adalyur	49/2(P-2)	2.00.0	Kallanguthu	5 Years
2	Melkatchirapattu	113 (Part)	1.00.0	Pargi	5 Years
3	Pavupattu	6/1 (Part)	1.00.0	Unreserved Forest	5 Years
4	Athipadi	45/2C(P-6)	1.00.0	Kallanguthu	10 Years
5	Athipadi	45/2C(P-7)	1.00.0	Kallanguthu	10 Years

2. CHENGAM TALUK

Sl.No.	Village	S.F.No.	Extent (In Ha.)	Land Classification	Lease Period (In Years)
6	Se.Agaram	21 (Part)	1.00.0	Kallanguthu	10 Years

3. THANDARAMPATTU TALUK

Sl.No.	Village	S.F.No.	Extent (In Ha.)	Land Classification	Lease Period (In Years)
7	Tharadapattu	32/3A(part)	1.00.0	Kallanguthu	10 Years
8	Tharadapattu	129(part)	1.50.0	Malai	10 Years
9	Royandapuram	292/1A	1.77.5	Kallanguthu	10 Years

[Signature]
05/12/2024
DISTRICT COLLECTOR,
TIRUVANNAMALAI.

[Signature]
R. Kalpana

ANNEXURE - M**Rc.No.363/Mines/2024****Dated: 12.2024****BACK GROUND DETAILS OF BIDDER**

1.	Name of the applicant in which the quarry lease is required to be granted with full postal address.	
2.	(a) The applicant shall be an Indian National or a company as defined in clause (20) of section 2 of the Companies Act, 2013 (Central Act 18 of 2013) and domicile of Tamil Nadu having business and Corporate Office in Tamil Nadu. Is the applicant an Individual or Private Company, Firm or Association	
	(b) If the applicant is an Individual, specify his name, nationality and address:	
	Telephone No.	
	Mobile No:	
	Contact Person:	
	Email Address:	
	PAN Number.	
	GST Number	
	(c) If the applicant is private company, firm or association, specify name of directors, partners, members and their Nationality (Documentary evidence should be produced)	
	Status of the firm : Proprietorship/Partnership Company (Certificate of Registration to be enclosed)	
	Telephone No.	
	Mobile No:	
	Contact Person:	
	Email Address:	
	PAN Number.	
	GST Number	

R. Kalpana



3.	(a) Particulars of remittance of application fee (The applicant shall pay through online a non-refundable application fee of Rs.5,000/- (Rupees Five thousand only) in respect of rough stone)(online remittance details to be uploaded)	
	(b) Particulars of remittance of Bid Security Amount - 1. Every bidder shall, while applying for bidding, pay online, a bid security amount equal to 1% of the value of the estimated resources or Rs.10,00,000/- (Rupees ten lakh only) for fresh quarries and Rs.5,00,000/- (Rupees five lakh only) for other quarries, whichever is higher, in case of rough stone. (online remittance details to be uploaded)	
4.	Has the applicant filed certificates that the applicant has -	
	(a) No Mining dues - Mining Dues Clearance Certificate towards payment of quarrying dues to be uploaded. (The applicant shall obtain a valid mining dues clearance certificate from the Assistant Director of Geology and Mining where the quarrying or mining lease area is situated, in the Form prescribed in Appendix VIII to these rules for having paid mining dues such as royalty, seigniorage fee, lease amount, dead rent, surface rent, area assessment, local cess and local cess surcharge and the penalty amount payable under the Act or these rules or under the lease deed or agreement already executed or entered into by the applicant)	
	(b) No Income-tax dues - Upto date Income Tax returns in the Form ITR to be upload.	
	(c) No Goods and Service Tax dues	
5.	Minor Mineral which the applicant intends to quarry with descriptions:	

R. Kalpana



6.	Period for which quarrying lease is required;					
7.	Total extent of the area applied for;					
8.	Details of the area for which the tender application is made					
S/ No in the Gazette notification	District	Taluk	Village	Survey number	Area in hectare	
(1)	(2)	(3)	(4)	(5)	(6)	
12	Affidavit for furnishing the details of mineral - wise areas in each district of the State in respect of which the applicant himself or jointly with any other person has — (i) already held a quarrying lease or quarrying permission; (ii) already applied for grant of lease, but not yet granted; and (iii) applied for the grant of lease simultaneously. (to be uploaded)					
13	Any other particulars which the Tenderer wishes to furnish:					

I /We do hereby declare that the particulars furnished above are correct and am /are ready to furnish any other details and security deposit as may required by the Government or District Collector or District Forest Officer. I hereby swear and state that I/We know very well about the provisions contained in the Tamil Nadu Minor Mineral Concession Rules, 1959 in respect of granting of quarry lease applied for and other conditions stipulated in connection with the quarrying and other operations.

**SIGNATURE OF THE TENDERER
WITH OFFICE SEAL (if any)**

Encl: The scanned copy of the following documents has to be uploaded

1. Aadhar Card
2. GST Registration
3. PAN card.
4. Certificate of Company Registration

[Signature]
05/12/2024
COLLECTOR
Tiruvannamalai District
Tiruvannamalai

R. Kalpana
05/12/24

ANNEXURE - III

TENDERER/BIDDER DECLARATION FORM

Rc.No.363/Mines/2024

Dated: .12.2024



1. I/we have gone through the tender document and all the instructions to the bidder and agree to abide by all the conditions and terms mentioned therein.
2. I / We hereby quote the price for the E-auction of Rough Stone quarry / quarries specified in the Annexure I. The quotations furnished in the schedule are subject to the conditions set-forth in the tender form.
3. I / We also swear and state that on no circumstances I / We will produce any rough blocks / slabs or any other form of stone from the area applied for lease either for export purpose in the form of raw blocks, slabs, etc., or for using them in a cutting and polishing industry.
4. I/We hereby certify that our firm has not been banned by the Government on account of unfair business dealings with any Government Departments and Government undertaking.
5. I / We also swear and state that if any false information or concealed any vital information in the affidavit are to be found in later, I /We understand that the bid to be invalid.
6. I / We also swear and state that if any false information or concealed any vital information in the affidavit are to be found after the grant of the lease, I /We understand that the lease to be terminated.

**SIGNATURE OF THE TENDERER.
WITH OFFICE SEAL (R any)**


COLLECTOR
Tiruvannamalai-District
Tiruvannamalai


R. Kalpana
09/12/2024



ANNEXURE-IV

DETAILS OF PRICE QUOTED

Rc.No.363/Mines/2024 Dated: .12.2024

BOQ

R. Kalpana

ANNEXURE -V

Rc.No.363/Mines/2024 Dated: .12.2024



CRITICAL DATA SHEET

Publishing date	
Bid document download starting date	09.12.2024 from 1100 hrs
Bid submission starting date	09.12.2024 from 1100 hrs
Bid Submission ending date	26.12.2024 upto 1600 hrs
Technical bid opening date	27.12.2024 1100 hrs
Financial bid opening date / Auction Date	Will be Intimated later on through Tamil Nadu e-Tender portal
Tender Application fee	Rs.5,000/- (Non-refundable)
Bid Security Amount	As per Annexure VI of the Tender Document

[Signature]
05/12/2024
DISTRICT COLLECTOR,
TIRUVANNAMALAI.

[Signature]
05/12/24

R. Kalpana



ANNEXURE -VI
DETAILS OF EMD AND TENDER FEE / APPLICATION FEE

SLNo.	Taluk	Village	S.F.No.	Extent (In Ha.)	Proposed lease period in years	EMD fixed as per G.No.21 dt:31.07.2024 (In Rs.)	Tender fee / Application fee (In Rs.)
1	Tiruvannamalai	Adalyur	49/2(P-2)	2.00.0	5 Year	17,29,769	5000
2	Tiruvannamalai	Meikachirapattu	113 (Part)	1.00.0	5 Year	5,00,000	5000
3	Tiruvannamalai	Pavupattu	6/1 (Part)	1.00.0	5 Year	5,40,263	5000
4	Tiruvannamalai	Athipadi	45/2C(P-6)	1.00.0	10 Years	10,00,000	5000
5	Tiruvannamalai	Athipadi	45/2C(P-7)	1.00.0	10 Years	10,00,000	5000
6	Chengam	Sa.Agaram	21 (Part)	1.00.0	10 Years	10,00,000	5000
7	Thandarampattu	Tharadapattu	32/3A(part)	1.00.0	10 Years	10,00,000	5000
8	Thandarampattu	Tharadapattu	129(part)	1.50.0	10 Years	15,06,010	5000
9	Thandarampattu	Royandapuram	292/1A	1.77.5	10 Years	24,53,710	5000

Note: The bidders shall pay respective EMD for each proposed areas for which they want to apply. For other non-interested areas for which they don't want to apply, the Bidder shall Click "EMD Exemption" option available in the portal during online application and shall upload "self - declaration" statement with signature by stating the reason why EMD Exemption is availed.


 05/12/2024
 DISTRICT COLLECTOR,
 TIRUVANNAMALAI.




B. Kalpana



ANNEXURE-VII

SWORN AFFIDAVIT

I am _____ Age _____ residing at _____
do hereby solemnly and sincerely state the list of minor mineral quarries
already held by me under lease and applied for grant of quarry lease as
under affirm on oath and state as follows:

- I. Has already held a quarrying lease or quarrying permission
- II. Has already applied for grant of lease, but not yet granted;
and
- III. Being Applied for the grant of lease simultaneously

I submit that the above fact are true and correct to the best of my
knowledge and belief

Signature invalid

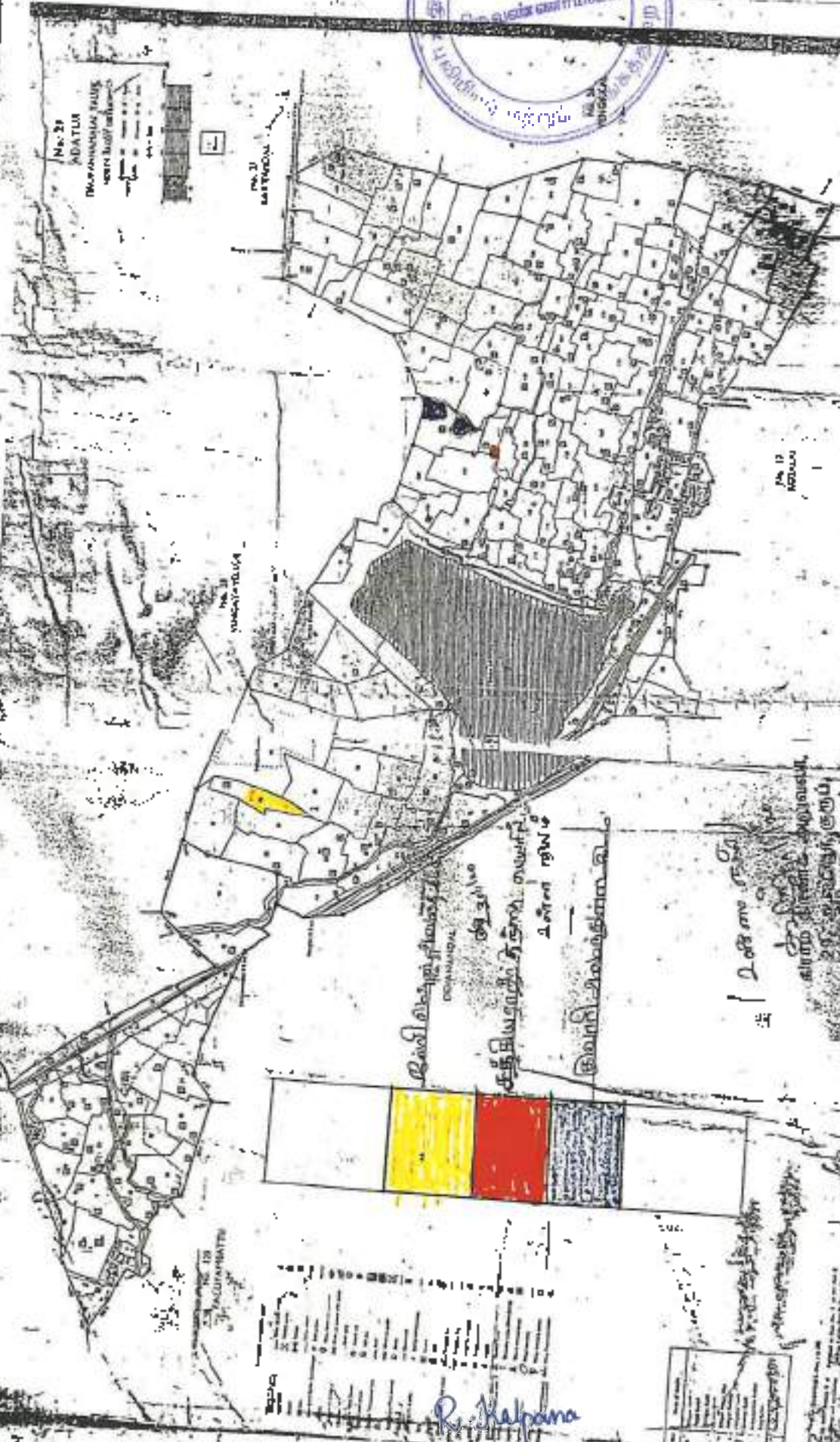
R. Kalpana

Digitally signed by PRASATH HARIRAM
Date: 2024.12.08 12:21:11 IST
Location: Tamil Nadu-TN

APARAYUR Village map



ANNEXURE II



R. Kalpana

1	2	3	4	5	6	7	8	9	10
47-1	24-1	0	4	7.4	7	3.75	0	39.0	2 72
-2	-2	0	4	7.4	7	3.75	2	00.0	5 50
3	-3	0	4	7.4	7	3.75	0	33.0	34
-4	-4	0	4	7.4	7	3.75	0	50.0	1 08
48-1	-5	0	4	7.4	7	2.75	0	32.0	3 53
-2	26	0	4	8.4	8	2.00	1	53.0	3 65
48-1	25-2A	0	4	7.4	7	2.75	3	10.5	5 79
-2	-2A	0	4	7.4	7	2.75	0	69.0	
-3	-2A	0	4	7.4	7	2.75	0	46.0	1 32
-4	-2A	0	4	7.4	7	2.75	0	89.0	3 45
-5	-2A	0	4	7.4	7	2.75	0	24.0	0 66
50-1	-1A1	0	4	8.4	8	2.00	1	45.0	2 93
-2	-1A2	0	4	8.4	8	2.00	1	56.0	3 12
-3	-1A3	0	4	8.4	8	2.00	0	60.0	1 20
-4	-1A4	0	4	8.4	8	2.00	0	45.5	0 91
-5	-2C	0	4	8.4	8	2.00	4	07.5	4 13
51-1	27	0	4	8.4	8	2.00	5	18.0	6 36
-2	28 1A15	0	4	8.4	8	2.00	0	42.0	0 84
-3	-1A15	0	4	8.4	8	2.00	3	69.5	2 20
52-1	10-1	0	4	7.4	7	2.75	1	98.0	5 45
-2	-1	0	4	7.4	7	2.75	0	30.0	0 40
-3	-1	0	4	7.4	7	2.75	0	45.0	



307 டி. ரேணு (1) விவரம்
வ. ராமலிங்கம் (2)
273 வ. ராமலிங்கம்

307 டி. ரேணு (1) விவரம்
வ. ராமலிங்கம் (2)
273 வ. ராமலிங்கம்

தமிழ்
வடுகள்
குன்று
தமிழ்
தமிழ்
தமிழ்

204 கோ. பிரியலட்சுமி
நினைவு

333 வ. மார்ட்டின்
166 பே. தங்கராஜ்
நினைவு
தமிழ்

134 மு. சா. சிவசுந்தரி
முத்து
264 பே. கோபாலசாமி
நினைவு

43 குகசுந்தர
புதுவையார்

56 பே. சா. சிவசுந்தரி
சுமந்திரன்

91 பே. சா. சிவசுந்தரி
சுமந்திரன்

R. Kalpana



ANNEXURE-3



APPROVAL MINING PLAN

MINING PLAN FOR ADAIYUR ROUGH STONE QUARRY

[Prepared Under Rule 8, 41 & 42 of Tamil Nadu Minor Mineral Concession
Rules, 1959]

LOCATION OF THE QUARRY LEASE APPLIED AREA

STATE : TAMIL NADU
DISTRICT : TIRUVANNAMALAI
TALUK : TIRUVANNAMALAI
VILLAGE : ADAIYUR
S.F.NO : 49/2 (PART-2)
EXTENT : 2.00.0Ha

FOR

APPLICANT

Tmt.R.Kalpana,
W/o.Manikandan,
No.798, Bajanai Kovil Street,
Devikapuram, Chetpet Taluk,
Tiruvannamalai District - 606 902.

ECO-FRIENDLY



SUSTAINABILITY



SAFETY



(PPE)

PREPARED BY

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

M/s. GLOBAL MINING SOLUTIONS

(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)

PLOT NO. 6, SF NO. 13/2, A2, VS CITY, RC CHETTPATTY,
KOTTAMETTUPATTY,

OMALUR, SALEM, TAMIL NADU - 636 455

NABET ACCREDITATION NO - NABET/ EIA/23-26 /SA 0241

CONTACT: 97502 23535, 94446 54520

Email: intoglobalmining@gmail.com, globalminingsolutionssalem@gmail.com



R.Kalpana,
W/o.Manikandan,
No.798, Bajanai Kovil Street,
Devikapuram, Chetpet Taluk,
Tiruvannamalai District - 606 902.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone** quarry over an extent of 2.00.0Hectares of Government land in S.F.No.49/2(Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State has been prepared by

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

I request to the Deputy Director, Department of Geology and Mining, Tiruvannamalai 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**

M/s. GLOBAL MINING SOLUTIONS

(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)

PLOT No. 6, SF No. 13/2, A2, Vs City, RC Chettypatty,

Kottamettupatty, Omalur, Salem, Tamil Nadu - 636 455

NABET ACCREDITATION NO - NABET/ EIA/23-26 /SA 0241

CONTACT: 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

R.Kalpana
R.Kalpana,

Place: Tiruvannamalai

Date: 01.05.2025

R.Kalpana

R.Kalpana,
W/o.Manikandan,
No.798, Bajanai Kovil Street,
Devikapuram, Chetpet Taluk,
Tiruvannamalai District - 606 902.



DECLARATION

The Mining Plan in respect of **Rough Stone** quarry over an extent of 2.00.0Hectares of Government land in S.F.No.49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai 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

R. Kalpana
R.Kalpana,

Place: Tiruvannamalai

Date: 01.05 2025

R. Kalpana

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

Qualified Person

M/s. GLOBAL MINING SOLUTIONS

(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)

PLOT No. 6, SF No. 13/2, A2, Vs City, RC Chertypatty,

Kottamettupatty, Omalur, Salem, Tamil Nadu - 636 455

NABET ACCREDITATION NO - NABET/ EIA/23-26 /SA 0241

CONTACT: 97502 23535, 94446 54520



CERTIFICATE

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of **Rough Stone** quarry lease over an extent of 2.00.0 Hectares of Government land in S.F.No.49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State applied by Tmt.R.Kalpana, 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: 02.05.2025

R. Kalpana



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

Qualified Person

M/s. GLOBAL MINING SOLUTIONS

(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)

PLOT No. 6, SF No. 13/2, A2, Vs City, RC Chettypatty,

Kottamettupatty, Omalur. Salem, Tamil Nadu - 636 455

NABET ACCREDITATION NO - NABET/ EIA/23-26 /SA 0241

CONTACT: 97502 23535, 94446 54520

CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone** quarry over an extent of 2.00.0 Hectares of Government land in S.F.No.49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State for Tmt.R.Kalpana, 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: 02.05.2025

R. Kalpana

CERTIFICATE



Certified that I, C.Natarajan, M/s. GLOBAL MINING SOLUTIONS (NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT) Plot No. 6, SF No. 13/2, A2, Vs City, RC Chertypatty, Kottamettupatty, Omalur, Salem, Tamil Nadu - 636 455 NABET ACCREDITATION NO - NABET/EIA/23-26 /SA 0241. 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 quarry lease applied for an extent of 2.00.0Ha of (Government land) in S.F.No.49/2(Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, by Tmt.R.Kalpana, 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: 02.05 2025





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ANNEXURE

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LIST OF PLATES

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9.0	Year wise Development and Production Plan & Sections	V
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MINING PLAN FOR MINOR MINERALS

ROUGH STONE

Over an extent of 2.00.0hectares of Government land in
S.F.No. 49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk,
Tiruvannamalai District, Tamil Nadu State.

(PREPARED UNDER RULE 8, 41 and 42 OF TNMMCR 1959)

1.0 Introduction and Executive Summary;

1. The present Mining Plan is prepared for Tmt.R.Kalpana W/o. Manikandan, residing at No.798, Bajanai Kovil Street, Devikapuram, Chepet Taluk, Tiruvannamalai District - 606 902.
2. The application was processed by the Deputy Director, Department of Geology and Mining, Tiruvannamalai, and passed an order vide Rc.No.16/Kanmam/2025 dated 11.03.2025 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 (SLEIAA) for the grant of quarry lease to quarry Rough Stone over an extent of 2.00.0hectares of Government lands in S.F.No. 49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District of Tamil Nadu State for a period of five years.
3. Accordingly, Mining Plan is prepared under the provisions of rule 8, 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.
 - a) A safety distance of 7.5m and 10m should be provided to the adjoining patta and poramboke lands.
 - b) A safety distance of 50m should be provided to the permanent structures (Water bodies, Highways, Electrical lines and Railway tracks).
 - c) The applicant should not cause any hindrance to adjacent lands and public while quarrying operation.
 - d) Barbed wire fencing should be erected all along the boundary of the lease granted area before quarrying operation
 - e) The applicant should use jackhammer and mild explosive during blasting in quarry.
 - f) Quarrying operation should be done proper scientific method only.

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4. Geological Resources is estimated at 17,03,449Ts of Rough stone and 3,354Ts of Topsoil and Mineable Reserves is estimated at 6,39,710.50Ts of Rough Stone and 2,170Ts of Topsoil 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 6,39,710.50Ts of Rough Stone and 2,170Ts of Topsoil 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 engage 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 840m 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	:	Adaiyur
b.	Name of the Panchayat Union	:	Tiruvannamala
c.	The proposed total Movable Reserves	:	6,39,710.50Ts of Rough Stone 2,170Ts of Topsoil
d.	The proposed quantity of reserves (level of production) for Five years to be mined is (Recoverable reserves)	:	6,39,710.50Ts of Rough Stone 2,170Ts of Topsoil
e.	Total extent of the area	:	2.00.0Ha
f.	Proposed Period of mining	:	Five Years
g.	Existing depth	:	10m (maximum) (6m above ground level and 4m below ground level)
h.	Proposed Depth of mining	:	36m (6m above ground level 30m 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 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 1,78,00,000/- Rs. 51,50,000/- Rs. 5,00,000/- Total Project cost(A+B+C)-Rs. 2,34,50,000/-

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

Corners	Co ordinates		Distance between the corners
	Latitude	Longitude	
1	12° 16' 44.86" N	79° 02' 14.38" E	1-2 = 100.0m
2	12° 16' 41.62" N	79° 02' 14.08" E	2-3 = 66.2m
3	12° 16' 39.72" N	79° 02' 13.03" E	3-4 = 12.4m
4	12° 16' 39.74" N	79° 02' 13.43" E	4-5 = 48.8m
5	12° 16' 38.23" N	79° 02' 12.93" E	5-6 = 104.2m
6	12° 16' 39.16" N	79° 02' 09.62" E	6-7 = 201.4m
7	12° 16' 45.53" N	79° 02' 11.22" E	7-1 = 97.8m

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2.0 General Information:

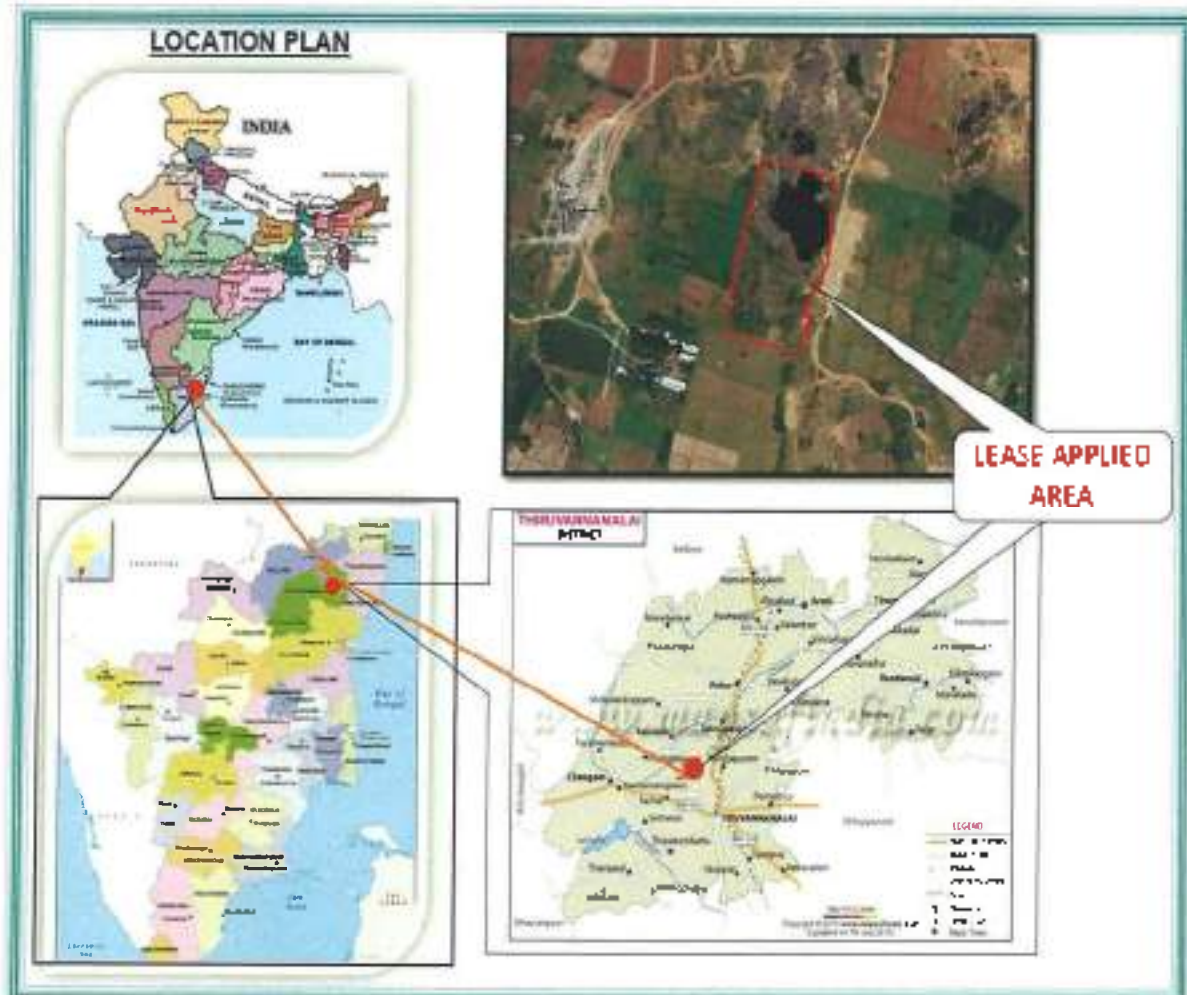
	a.	Name of the Applicant	:	Tmt.R.Kalpana
	b.	Address of the Applicant with phone No and e-mail id if any	:	W/o. Manikandan, No.798. Bajanaik Kovil Street, Devikapuram, Chepet Taluk, Tiruvannamalai District. Pincode-606 902. Cell No.: 9597121648
	c.	Status of the Applicant	:	Individual
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone.
	b.	Precise area communication letter No.	:	Precise area communication letter received from the Deputy Director, department of Geology and Mining, Tiruvannamalai vide Rc.No.16/ Kanimam/ 2025 dated 11.03.2025.
	c.	Period of permission / lease granted	:	The Deputy Director, Department of Geology and Mining, Tiruvannamalai, 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 M/s. GLOBAL MINING SOLUTIONS (NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT) PLOT No. 6, SF No. 13/2, A2, Vs City, RC Chetlypaty, Kottamettupatty, Omahur, Salem. Tamil Nadu - 636 455 NABET ACCREDITATION NO -NABET / EIA / 23-26 /SA 0241 Contact: 97502 23535, 94446 34520.

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3.0 Location:

S.No	Details of the Area:	
1	Corner Coordinates	Latitude : 12°16'38.23"N to 12°16'43.53"N Longitude : 79°02'09.62"E to 79°02'14.38"E
2	Toposheet Number	57 P/03
3	The altitude of the area	220m (MSL)
4	Extent	2.00.0Ha
5	Survey No	49/2 (Part-2)
6	Village	Adaiyur
7	Taluk	Tiruvannamalai
8	District	Tiruvannamalai
9	State	Tamil Nadu





a.	Classification of the Area (Ryotwari / poramboke / others)	:	Government poramboke land
b.	Ownership / Occupancy of the Applied area (Surface rights)	:	It is Government land the applicant has obtained tender from the Government Please refer annexure no -I and IA.
c.	Toposheet No. with Latitude and Longitude	:	Topo Sheet No: 57 P/03 Latitude: 12°16'38.23"N to 12°16'45.53"N Longitude: 79°02'09.62"E to 79°02'14.38"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 Tiruvannamalai - Kanji road on southwest side of the area. The Nearest Railway line is Tiruvannamalai to Polur line which is about 4.3Km on east side of the area.



SATELLITE IMAGERY OF THE LEASE APPLIED AREA



TOPOGRAPHICAL VIEW OF LEASE APPLIED AREA



PART - A

4.0 Geology and Mineral Reserves:

4.1	a. Topography	: >	The area applied for quarry lease is situated in the hilly area. It exhibits elevated topography covered by Topsoil formation. The massive Charnockite formation is noticed below 1m (Avg) Topsoil and sloping towards south side of the area. the altitude of the area is above 220m (maximum) from MSL. > No major river is found nearby the lease applied area. > Water table is found at a depth of 70m in summer and 67m in rainy seasons. > Temperature of the area is reported to be 18°C to a maximum of 42°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 N45°E-S45°W with dipping towards SE60°. The general geological succession of the area is given as under. <table><tr><th><u>AGE</u></th><th></th><th><u>ROCK TYPE</u></th></tr><tr><td>Recent</td><td>-</td><td>Topsoil</td></tr><tr><td></td><td></td><td>Unconformity</td></tr><tr><td>Archaean</td><td>-</td><td>Dolerite dyke</td></tr><tr><td></td><td></td><td>Charnockite.</td></tr><tr><td></td><td></td><td>Peninsular</td></tr><tr><td></td><td></td><td>Gneissic complex</td></tr><tr><td></td><td></td><td>and Calc Gneiss</td></tr></table>	<u>AGE</u>		<u>ROCK TYPE</u>	Recent	-	Topsoil			Unconformity	Archaean	-	Dolerite dyke			Charnockite.			Peninsular			Gneissic complex			and Calc Gneiss
<u>AGE</u>		<u>ROCK TYPE</u>																									
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		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. Two sections have been drawn, one section drawn length wise as (X-Y) and another one section drawn width wise as (A-B), 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 36m 16m above ground level 30m below ground level only. Availability of resources is given below.

Table No-1

Section	Topography	Bench	Length in (m)	Width in (m)	Depth in (m)	Topsoil m ³	Rough stone in m ³	Bulk Density	Topsoil in Ts	Geological Resources of Rough stone in Ts
XY AB	Above ground level	I	39	43	1	1677	-	2.00	3354	-
		II	95	71	4	-	26980	2.75	-	74195.00
	Below ground level	III	112	103	4	-	46144	2.75	-	126896.00
			204	103	1	-	21012	2.75	-	57783.00
		IV	204	103	5	-	105060	2.75	-	288915.00
		V	204	103	5	-	105060	2.75	-	288915.00
		VI	204	103	5	-	105060	2.75	-	288915.00
		VII	204	103	5	-	105060	2.75	-	288915.00
VIII	204	103	5	-	105060	2.75	-	288915.00		
Total						1677	619436	-	3354	1703449.00

Topsoil Formation

: 3,354Ts

The Geological Resources of Rough stone

: 17,03,449Ts

b. Already excavated

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	74	40	2m (above ground level)
II	72	35	7.5m (6m above ground level) and 1.5m below ground level)
III	110	61	10m (6m above ground level) and 4m below ground level)

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c. Available Mineable Reserve

The available mineable reserve calculated by deducting 7.5m & 10m safety distance and bench loss.

Table No-3

Section	Topography	Bench	Length in (m)	Width in (m)	Depth in (m)	Topsoil in m ³	Rough stone in m ³	Bulk Density	Topsoil in Ts	Mineable Reserves of Rough stone in Ts
XY-AB	Above ground level	I	31	33	1	1085	-	2.00	2170	-
		0	95	71	4	-	26980	2.75	-	74195.00
	Below ground level	III	100	76	4	-	30400	2.75	-	83600.00
		IV	167	76	1	-	12692	2.75	-	34903.00
		V	157	66	5	-	51810	2.75	-	142477.50
		VI	147	56	5	-	41160	2.75	-	113190.00
		VII	137	46	5	-	31510	2.75	-	86652.50
		VIII	127	36	5	-	22860	2.75	-	62855.00
			117	26	5	-	15210	2.75	-	41827.50
		Total				1085	232622		2170	639710.50

The available mineable reserve is computed as 6,39,710.50Ts of Rough stone and 2,170Ts of Topsoil upto a depth of 36m (6m above ground level 30m below ground level) only.

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5.0 Mining:

5.1	Method of Mining	:	1. Opencast method of semi mechanized mining with 5.0m height 5m width 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 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.
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.	:	There is overburden in the form of topsoil, after excavation of topsoil will be utilized for afforestation purpose. The excavated rough stone will be directly loaded into tipper to the needy crusher/other buyers.

The Yearwise Production and Development Table

Table No -4

Year	Section	Topography	Dench	Length in (m)	Width in (m)	Depth in (m)	Topsoil in m ³	Rough stone in m ³	Bulk Density	Topsoil in Ts	Mineable Reserves of Rough stone in Ts			
I	XY-AB	Above ground level	I	31	35	1	1085	-	2.00	2170	-			
			II	95	71	4	-	26980	2.75	-	74195.00			
		Below ground level	III	50	76	4	-	15200	2.75	-	41800.00			
				50	76	1	-	3800	2.75	-	10450.00			
				Total							1085	45980	-	2170
II	XY-AB	Below ground level	III	50	76	4	-	15200	2.75	-	41800.00			
				117	76	1	-	8892	2.75	-	24453.00			
		Total	IV	67	66	5	-	22110	2.75	-	60802.50			
				Total							-	46202	-	127055.50
				Below ground level	IV	90	66	5	-	29700	2.75	-	81675.00	
V	60	56	5			-	16800	2.75	-	46200.00				
	Total							-	46500	-	127875.00			
IV	XY-AB	Below ground level	V	87	56	5	-	24360	2.75	-	66990.00			
				VI	97	46	5	-	22310	2.75	-	61352.50		
		Total							-	46670	-	128342.50		
		V	XY AB		Below ground level	VI	40	46	5	-	9200	2.75	-	25300.00
				VII			127	36	5	-	22860	2.75	-	62865.00
VIII	117				26	5	-	15210	2.75	-	41827.50			
	Total							-	47270	-	129992.50			
Grand Total							1085	232622	-	2170	639710.50			

The applicant has proposed to carry out 6,39,710.50Ts of Rough stone and 2,170Ts of Topsoil (formation upto a depth of 36m (6m above ground level 30m below ground level)) for the period of five years.

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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	Size Capacity	Make	Motive power												
	1	Jack hammer	3	32	1.2m to 6m	Atlas Copco	Compressed air												
	2	Compressor	1	-	-	Atlas Copco	Diesel Drive												
	b.	Loading		:	Excavator of 0.90m ³ bucket capacity (with Rock breaker attachment) (1No).														
	c.	Transportation		:	Tipper 3Nos (10/20Tn) capacity.														
5.6		Disposal of Overburden	:	The overburden in the form of topsoil, after excavation topsoil will be preserved along the boundary barrier utilized for afforestation purpose.															
5.7		Brief Note on Conceptual Mining Plan for the entire lease period	:	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 (M) end of Mining plan Period</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>1</td><td>195</td><td>86</td><td>36m (6m above ground level 30m below ground level)</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.				Ultimate Pit dimension (M) end of Mining plan Period				Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)	1	195	86	36m (6m above ground level 30m below ground level)
Ultimate Pit dimension (M) end of Mining plan Period																			
Pit No	Length (max) in (m)	Width (Avg) in (m)	Depth(max) in(m)																
1	195	86	36m (6m above ground level 30m below ground level)																

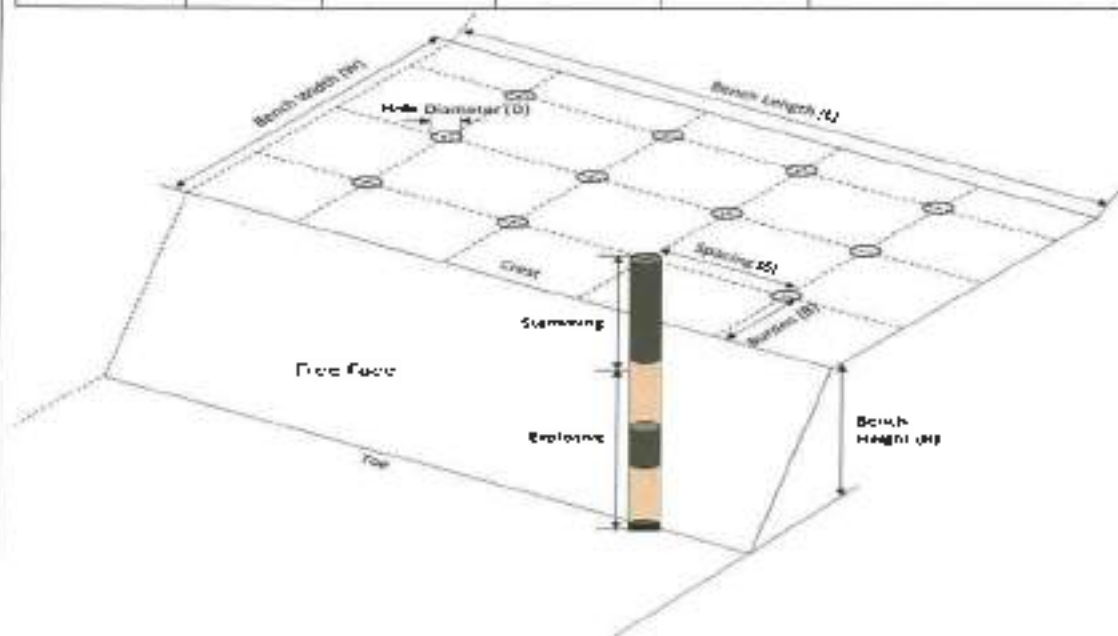
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6.0 Blasting:

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 Kg 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° 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.



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. <table border="1" data-bbox="766 560 1353 761"> <tr> <td>Number of holes</td> <td>: 142</td> </tr> <tr> <td>Powder factor</td> <td>: 6Ts/Kg of explosives</td> </tr> <tr> <td>Total explosive required</td> <td>: 71Kg slurry explosives</td> </tr> <tr> <td>Charge / hole</td> <td>: 0.5Kg</td> </tr> <tr> <td>Blasting time</td> <td>: 12-2 Pm</td> </tr> </table>	Number of holes	: 142	Powder factor	: 6Ts/Kg of explosives	Total explosive required	: 71Kg slurry explosives	Charge / hole	: 0.5Kg	Blasting time	: 12-2 Pm
Number of holes	: 142											
Powder factor	: 6Ts/Kg of explosives											
Total explosive required	: 71Kg 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 70m below ground level. In the proposed mining plan only 36m (6m above ground level 30m 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:

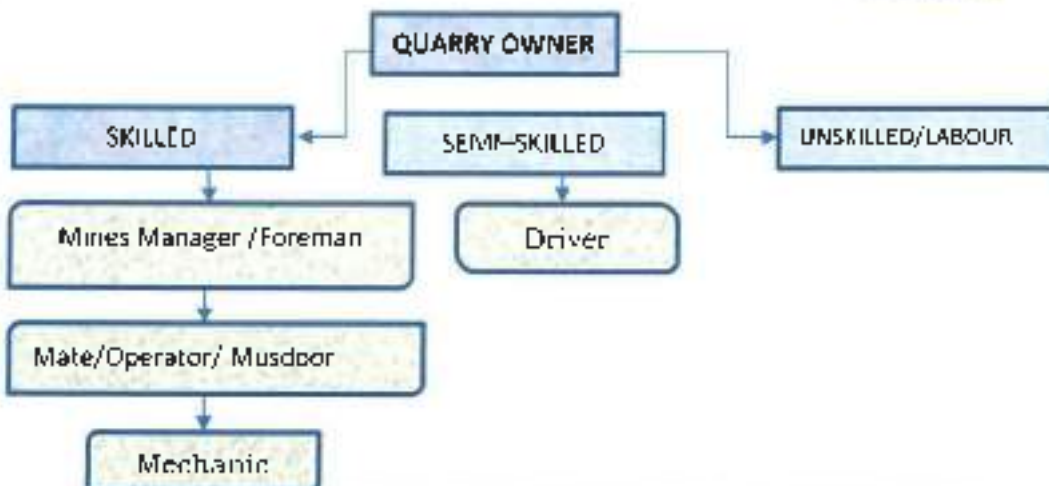
8.1	Habitations / Village	:	There are no habitations within a radius of 300m.
8.2	Power lines (HT/LT)	:	There is no Power lines (HT/LT) within a radius of 50m.
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	:	There is seasonal odai passing on southwest side of the area and is 430m away from the area. There is tank situated on southeast side of the area and is 460m away from the 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-38) Tiruvannamalai- Vellore is about 3.6km on east side of the area. The State Highway (SH-133A) Tiruvannamalai - Avalurpettai is about 5.7km on southeast 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 Kovattumalai Reserved forest northwest side of the area and is 840m away from the area There is no Wild Life Sanctuary 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



9.0 Employment Potential & Welfare Measures:

9.1 Employment Potential (Management & Supervisory personnel)

The proposed organization chart



1.	Skilled	Mines Manager	1 No.
		Foreman / Mate	2 No.
		Operator	8 No.
		Mechanic	1 No.
2.	Semi-skilled	Driver	3 No.
3.	Unskilled	Labours	12Nos
Total =			27Nos

Allowing 10% absence, the no. of men of roll will be around 24.

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 Adaiyur Village which is about 1.3km on southeast side of the area.
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, 1955separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1955.



c.	First Aid Facility	:	First aid kits are kept in Mines office room, in case of such eventualities the 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 5.5Kms (SE) in Tiruvannamalai 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 DGM3 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



PART - B

10.0 Environmental Management Plan:

10.1	Existing Land Use Pattern	1. The area is exhibits elevated topography covered by topsoil formation. 2. Quarrying operation is proposed up to a depth of 36m (6m above ground level 30m below ground level) for the proposed mining plan period. 3. Fluctuation of Water table in this area is in between 70m and 67m 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-5 <table><tr><th>Sl. No.</th><th>Land Use</th><th>Present Area (Ha)</th><th>Area in use during the quarrying period (Ha)</th></tr><tr><td>1.</td><td>Quarrying Pit</td><td>0.85.0</td><td>1.69.0</td></tr><tr><td>2.</td><td>Infrastructure</td><td>Nil</td><td>0.01.0</td></tr><tr><td>3.</td><td>Roads</td><td>0.01.0</td><td>0.01.0</td></tr><tr><td>4.</td><td>Green Belt</td><td>Nil</td><td>0.29.0</td></tr><tr><td>5.</td><td>Unutilized</td><td>1.14.0</td><td>Nil</td></tr><tr><td></td><td>Total =</td><td>2.00.0</td><td>2.00.0</td></tr></table>	Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)	1.	Quarrying Pit	0.85.0	1.69.0	2.	Infrastructure	Nil	0.01.0	3.	Roads	0.01.0	0.01.0	4.	Green Belt	Nil	0.29.0	5.	Unutilized	1.14.0	Nil		Total =	2.00.0	2.00.0
Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)																											
1.	Quarrying Pit	0.85.0	1.69.0																											
2.	Infrastructure	Nil	0.01.0																											
3.	Roads	0.01.0	0.01.0																											
4.	Green Belt	Nil	0.29.0																											
5.	Unutilized	1.14.0	Nil																											
	Total =	2.00.0	2.00.0																											
10.2	Water Regime	Water table in this area is noticed at a depth of 70m and presently, in the proposed mining plan only 36m (6m above ground level 30m below ground level) for the proposed mining plan period 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.																												



10.5	Human Settlement	: The nearest habitations with the population is given as under.	
Table No 6			
S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Vengayavelliore	1.5Km - NE	500
2	Adaiyur	1.3Km SE	1000
3.	Devanandal	1.1Km SW	800
10.6	Plan for Air, Dust Suppression	:	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, gluze etc., as per the Mines Act.
10.7	Plan for Noise Control	:	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.
10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Five years	:	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.
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 36m (6m above ground level 30m below ground level) for the proposed mining plan period 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 36m 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 & 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 2900Sqm area is proposed to use under afforestation by planting 348nos 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 (Tender amount)	Rs. 1,75,00,000
	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. 1,78,00,000/-
	B. Operational Cost:	
	1. Machineries	: Rs.50,00,000-
	2. Fencing cost	: Rs. 1,50,000
	Total	: Rs.51,50,000/-



	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	:	Rs. 1,00,000/-
	2. Sanitary Arrangements	:	Rs. 50,000/-
	3. Safety kids	:	Rs. 50,000/-
	4. Water sprinkling	:	Rs. 1,00,000/-
	5. Afforestation	:	Rs. 80,000/-
	Total*		Rs. 5,00,000/-
	Total Project Cost (A+B+C)	:	Rs. 2,34,50,000/-
	CSR Cost(2% of Total Project Cost)	:	Rs. 4,69,000/-

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 cattle.
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.



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

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

Place : Salem
Date : 02.05.2025

This Mining Plan Is Approved
Subject to the Conditions/Stipulation
Indicated in The Mining Plan Approval
Letter No. 16 /mines/2025 Dt: 10.6.2025
Office Of The Deputy Director Of
Geology And Mining, Tiruvannamalai.

[Signature]
Deputy Director,
Geology and Mining,
Tiruvannamalai.

[Signature]
10/6/25



ANNEXURE

I

ப.ச.ம.எண். 11/செவ்வாய்/2025

துறையை 13546/2024 - அத்தாட்சம்.

ஆட்சிபாளையம் அலுவலகம், திருவண்ணாமலை.

திருவண்ணாமலை

நாள்: 11/11/24/25

அறிவிக்கை

பெயர்: கைப்பிடிப்பு நுழைவு - சிறுசெய்தம் -
கைப்பிடிப்பு - (மின்சார்பு விலை (E-Auction) -
திருவண்ணாமலை மாவட்டம் மற்றும் வட்டம் -
ஆடைபுழை சிறப்பு புல எண். 49/2 (பகுதி-2) 2000
கெட்குடி பரப்பில் கைப்பிடிப்பு அமைக்க ஏதும்
விடப்பட்டது - அதிபர்சு ஏதும்செய்து கோரிய திருமதி
கைப்பிடிப்பு என்பதை பெயரில் கைப் பிடிப்பு
செய்யப்பட்டது - முழு ஏதும்செய்துமே
செய்துத்தப்பட்டுள்ளது - கைப்பிடிப்பு அறிவிக்கை மற்றும்
எந்தும்செய்து தாக்க மதிப்பீட்டு, ஆதாரம் தடையின்மைச்
செய்து பெற்று கைப்பிடிப்பு அறிவிக்கை - தொடர்பாக.

- பெயர்: 1. திருவண்ணாமலை மாவட்ட அரசிதழ் சிறப்பு
வெளியீடு எண். 03, நாள். 04.12.2024.
2. மின்சார்பு விலை நாள். 08.01.2025.
3. திருவண்ணாமலை கைப்பிடிப்பு நக.எண்.963/கைப்பிடிப்பு/2024-1.
நாள். 10.01.2025.
4. திருவண்ணாமலை கைப்பிடிப்பு இதை எண். நாள். 13.01.2025.
5. திருமதிக்கப்பா, க/பெயர்செய்துடன் என்பவரின்
கைப்பிடிப்பு நாள்.13.02.2025.

கைப்பிடிப்பு

திருவண்ணாமலை மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண். 03, நாள்.
04.12.2024 மூலம் திருவண்ணாமலை மாவட்டத்திற்குட்பட்ட அரசு புறம்போக்கு
பிளக்களில் கைப்பிடிப்பு அமைக்கதற்கு தகுதி வாய்ந்த கைப்பிடிப்புக்கு
மின்சார்பு ஒப்பந்தப்பிள்ளி டெண்டர்/ஏதும் குறித்த அறிவிப்பு வெளியிடப்பட்டது.

மேற்படி அரசிதழில் கைப்பிடிப்பு எண்.1ல் கைப்பிடிப்பு திருவண்ணாமலை மாவட்டம்
மற்றும் வட்டம், ஆடைபுழை சிறப்பு புல எண். 49/2 (பகுதி-2)ல்
2000 கெட்குடி பரப்பில் கைப்பிடிப்பு செய்ய 5 ஆண்டுகளுக்கு குத்தகை உரிமை
வழங்க, இவ்வண்ணம் மூலம் விண்ணப்பிக்கக் கைப்பிடிப்பு, 08.01.2025
அன்று ஏதும் நடைபெற்றதில் ரூ.175,00,000/- (ரூபாய் ஒரு கோடியை எழுபத்து
ஐந்து லட்சம் மட்டும்) ஏதும் கோரிய திருமதி ஆதாரம் கைப்பிடிப்பு உபத்தபட்ச
ஏதும்செய்து தேர்ந்தெடுக்கப்பட்டுள்ளது.

R. Kalpana



1. 12596 சொல் நகல் எழுதப்பட்டு வருவதென்பதை
 சொல்தொகையை அறிவிக்கப்பட்டு (1) மூன்று வருத்தென்பதை
 திருவண்ணாமலை அரசாங்கத்தின் சொல்தொகைப் பின்புறம்

சொல் நகல்	சொல் நகல்	நாள்	நினைவு	வருத்தென்பதை (பிரதானம்)
விண்ணப்பிக்கப்படும் சொல் தொகுப்பிட்ட END			END	11,210,741
10.01.2025	20250110022222	India Bank	வருத்தொகையில் 10%	11,210,741
10.02.2025	20250210014535	SB	வருத்தொகையில் 50%	70,20,231
10.02.2025	20250210014502	SB		70,00,001
			மொத்தம்	1,75,00,000

மேலும் 5ல் கட்டப்படும் வருத்தத்தில் வருத்தம். வருத்தொகையில் 20%
 தொகைக்கு /மதிப்பிற்கு குறைவிலிருந்து அல்லது சொத்து (Solvency Certificate of
 Insolvent Proprietor) மதிப்பு எண்ணித்து சமர்ப்படுத்துகிறது.

அனலே வருத்தம் திருமதி.ஆர்.கல்பா, த/பெயர்ச்செய்தல் எண்பதுக்கு
 கித்தான் இணைக்கப்பட்டுள்ள புலப்படத்தில் எண்ணம் தீட்டப்பட்ட பகுதியிலிருந்து
 5 ஆண்டுகளுக்கு கற்குவாறி செய்ய உத்தர புலம் (Precise Area) என
 தீர்மானித்து அறிவிப்பு செய்யப்படுகிறது.

மேலும் தமிழ்நாடு சிறுசெய்தல் சட்டம் விதிக்க 1959, விதிக்க 41 மற்றும்
 42-ல்படி கல் மற்றும் கிதா சிறு செய்கைகளுக்கு குறைவி குத்தகை உதிரும்
 கழகமும் ஸ்பெஷல் ஒப்பந்தம் பெறப்பட்ட கல்கத்திட்ட அறிக்கை மற்றும்
 சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையிலிருந்து வரந்து பெறப்பட்ட
 மேலும் என வரையறுக்கப்பட்டுள்ளது.

அனலே வருத்தம் திருமதி.ஆர்.கல்பா, த/பெயர்ச்செய்தல் எண்பது
 ஒப்பந்தம் பெறப்பட்ட கல்கத்திட்ட அறிக்கை மற்றும் சுற்றுச்சூழல் தாக்க
 மதிப்பீட்டு ஆணைய தடையிலிருந்து வரந்து சமர்ப்பிக்கும் பட்சத்தில்
 திருவண்ணாமலை மாவட்டம் மற்றும் வட்டம், ஆண்டிபுரி கிராமம் அரசு
 மும்பைக்கு புல எண். 49/2 (பகுதி-2)ல் 2,000 ஏக்கர்க்கு பட்டில் கீழ்க்கண்ட
 நிபந்தனைகளுக்குட்பட்டு கற்குவாறி செய்ய 1959ல் ஆண்டு தமிழ்நாடு சிறுசெய்தல்
 சட்டம் விதிக்கின்ற. விதி 8 (6) (b)-ல்படி 5 ஆண்டுகளுக்கு குத்தகை உதிரும்

R. Kalpana



வழங்க உரிய நடவடிக்கை மேற்கொள்ளப்படும் என்ற விடரம் தெரிவிக்கப்படுகிறது.

நிபந்தனைகள்

1. அருகில் உள்ள மட்டா மற்றும் புறம்போக்கு நிலங்களுக்கு முறையே 7.5 மீ. மற்றும் 10 மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
2. நிலையான அமைப்புகளுக்கு (நீர் நிலைகள், நெடுஞ்சாலைகள், மின் சாதனங்கள், இரயில் பாதைகள்) 50 மீ. பாதுகாப்பு இடைவெளி விட வேண்டும்.
3. அருகில் உள்ள நிலங்களுக்கும் மற்றும் பொதுமக்களுக்கும் எவ்வித பாதிப்பின்றி குவாரிப்பணி மேற்கொள்ள வேண்டும்.
4. குவாரிப்பணி ஆரம்பிப்பதற்கு முன்பாக குத்தகை உரிமம் வழங்கப்பட்ட புலத்தினை சுற்றி முள்கம்பி வேலி அமைத்து குத்தகை காலம் முழுவதும் பாதுகாத்து வை வேண்டும்.
5. பாறைகளை தகர்க்க கைத்துறைப்பான்களை கொண்டு பாறைகளை துறைவிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
6. குவாரிப்பணியினை விஞ்ஞானப்பூர்வமானதும் முறையானதும் மேற்கொள்ள வேண்டும்.

மேலும், 'சுலதாஜ் இவ்வறிவிப்பு கிடைக்கப்பெற்ற 90 நாட்களுக்குள் மேற்கொள்ள நிபந்தனைகளை குறிக்கும் வகையில் வரையு களங்கத்திட்ட அறிக்கை தயார் செய்து துணை இயக்குநர், புனிமியல் மற்றும் சுரங்கத்துறை, திருவண்ணாமலை அலுவலகம் ஒப்புதல் பெற சமர்ப்பிக்குமாறு அறிவுறுத்தப்படுகிறது.


11.03.24
துணை இயக்குநர்.

புனிமியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை.


11.03.24

பெறுநர்
திருமதி.ஆர்.கல்பணா,
க/பெ.மணிகண்டன்,
எண்.798, பஜனை கோவில் தெரு,
தேவிகவுளம், சேத்துப்பட்டு வட்டம்,
திருவண்ணாமலை - 606 902.

R. Kalpana



TIRUVANNAMALAI DISTRICT GAZETTE

EXTRAORDINARY PUBLISHED BY AUTHORITY



TIRUVANNAMALAI, WEDNESDAY, DECEMBER 4, 2024.

No. 3]

Karthigai 19, Kurothi, Thiruvalluvar Aandu 2055.

NOTIFICATION BY THE COLLECTOR

(Rc.No 363/Mines/2024, Dated: 03-12-2024)

E-mail: (minesntvm10@gmail.com)

Notice Inviting Tender (NIT)

"Inviting Application for Grant of Rough stone Quarry Leases in Government Lands"

In exercise of the power conferred by Section 15 of Mines and Mineral (Development & Regulation) Act, 1957 and in accordance with the Rule 8 of the Tamil Nadu Minor Mineral Concession Rules, 1959 read with G.O. Ms. No.21, Natural Resources (MMC.1), 31st July 2024 as amended from time to time notified thereunder, the District Administration of Tiruvannamalai District, Tamil Nadu has identified 9 (nine) areas in Tiruvannamalai District for grant of leases to quarry Rough stone through electronic tender / auction (e-tender / auction)

E-tender with forward bidding is invited through the e-tendering portal by District Collector, Tiruvannamalai District for the grant of quarry lease in Government Lands for quarrying "Rough Stone" available in Tiruvannamalai District as indicated in the Annexure-I

The tender process is online at e-portal URL, address <https://ntenders.gov.in>. Aspiring bidders may download and go through the tender document available in the site to know the details of e-auction process. Intending bidders are advised to visit the mentioned site regularly till closing date of E-auction for any corrigendum / addendum / amendment.



Prospective bidders are advised to get themselves registered at Tamil Nadu tender portal obtain login ID & password and go through the instructions available in the Home page after log in to the Tamil Nadu Tender Portal. <https://intenders.gov.in> They should also obtain Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application.

Application Fee - Rs.5,000 (Non - Refundable) for each quarry

Bid submission start date : 09-12-2024 from 11.00 hrs
Bid Submission end date : 26-12-2024 up to 16.00 hrs
Financial bid opening and live e-auction date : Will be intimated later on through Tamil Nadu e-Tender portal

Tiruvannamalai
3rd December 2024

D. BASKARA PANDIAN,
District Collector,
Tiruvannamalai.

R. Kalpana

**ANNEXURE - I**

List of Areas identified in Government Lands in Tiruvannamalai District of Tamil Nadu for
Grant of Rough Stone Quarry Leases through e-Auction

Sl.No.	Village	S.F.No.	Extent (in Ha.)	Land Classification	Lease Period (in Years)
TIRUVANNAMALAI TALUK					
1	Adaryur	49/2 (P-2)	2.00.0	Kallanguthu	5 Year
2	Melkachirapattu	113 (Part)	1.00.0	Para	5 Year
3	Pavupattu	6/1 (Part)	1.00.0	Unreserved Forest	5 Year
4	Athipadi	45/2C (P-6)	1.00.0	Kallanguthu	10 Years
5	Athipadi	45/2C (P-7)	1.00.0	Kallanguthu	10 Years
CHENGAM TALUK					
6	Se Agaram	21 (Part)	1.00.0	Kallanguthu	10 Years
THANDAMPATTU TALUK					
7	Tharadapattu	32/3A(part)	1.00.0	Kallanguthu	10 Years
8	Tharadapattu	129 (part)	1.50.0	Malai	10 Years
9	Royandapuram	292/1A	1.77.5	Kallanguthu	10 Years
Total			11.27.5		

Tiruvannamalai,
3rd December 2024.

D. BASKARA PANDIAN,
District Collector,
Tiruvannamalai

R. Kalpana



THE DISTRICT COLLECTOR, TIRUVANNAMALAI DISTRICT.

Rc.No.363/Mines/2024, Dated 05.12.2024.

Notice Inviting E-Tender Application for the Grant of Quarry Lease for quarrying Rough stone in Government lands situated in Tiruvannamalai District under e-Tender system as per Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959.

Application Fee Rs.5,000/- (Non-refundable)

DATE AND TIME OF OPENING

Technical Bid Starts	: 09.12.2024 1100 hrs
Financial Bid	: Will be informed later.
EMD	: As per Annexure -I

R. Kalpana

PAR E T OF G OLOGY A D
TI UV ALA

E-Mail:

AND GUIDEL NES TO TENDERERS
(Tender Document)

In exercise of the power conferred by Section 15 of Mines and Mineral (Development & Regulation) Act, 1957 and in accordance with the Rule 8 of the Tamil Nadu Minor Mineral Concession Rules, 1959 read with G.O. Ms. No.21, Natural Resources (MMC.1), 31st July 2024 as amended from time to time notified there under, the District Administration of Tiruvannamalai District, Tamil Nadu has identified 9 areas in Tiruvannamalai District for grant of leases to quarry Rough stone through electronic tender /auction (e-tender / auction).

E-tender with forward bidding is invited through the e-tendering portal by the District Collector, Tiruvannamalai for grant of quarry leases for quarrying "Rough Stone" in Tiruvannamalai District as indicated in the Annexure I of this tender document.

The tender process is on line at e-portal URL (Universa Resources Locator) address <https://tntenders.gov.in>. Aspiring bidders may download and go through the tender document. The URL for online bid submission in e-tender is
Intending bidders are advised to visit the mentioned site regularly till closing date of E-auction for any corrigendum / addendum / amendment.

R. Kalpana



Prospective Bidders are advised to get themselves registered at Tamil Nadu Tender portal, obtain 'login ID' & 'password' and go through the instructions available in the Home page after log in to the Tamil Nadu Tender Portal <https://tenders.gov.in>. They should also obtain **Digital Signature Certificate (DSC)** in parallel which is essentially required for submission of their application.

1. IMPORTANT INFORMATION:

- a) This E-Auction/Tender Document has been issued pursuant to notification of areas with the intent to carry out e-auction for grant of Quarry Leases for Rough stone as mentioned in the Annexure -I pursuant to the Act and the rules framed there under. All information provided in this E- Auction/Tender Document should be read together with the Act and the rules framed there under. In the event of a conflict between this E- Auction/Tender Document and the Act or the rules, the Act or the rules (as amended from time to time), as the case may be, shall prevail.
- b) The information contained in this E-Auction/Tender Document or subsequently provided to Bidder(s), whether in documentary or any other form by or on behalf of Competent Authority or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this E-Auction/Tender Document.
- c) The purpose of this E-Auction/Tender Document is to provide interested parties with information that may be useful to them in making their bids pursuant to this E-Auction/Tender Document. This E-Auction/Tender Document includes statements which reflect various assumptions and assessments



arrived at by the competent authority in relation to the mineral source and information collated from various sources, some of which may depend upon interpretation of Applicable Law.

- d) The assumptions, assessments, statements and information contained in the E-Auction/Tender Document may not be complete or adequate. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this E-Auction/Tender Document.
- e) The Competent Authority shall have no liability or responsibility to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this E-Auction/Tender Document or otherwise. The Competent Authority also accepts no liability of any nature howsoever caused arising from reliance of any Bidder upon the statements contained in this E-Auction/Tender Document.
- f) The Competent Authority may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this E- Auction/Tender Document.
- g) The issue of this E-Auction/Tender Document does not imply that the Competent Authority is bound to select a Bidder as



Selected Bidder for the mineral Rough stone and the District Collector/Assistant Director of Geology and Mining reserve the right to reject all or any of the Bidders or bids without assigning any reason whatsoever.

- h) Each Bidder shall bear all its costs associated with or relating to the preparation and submission of its bid.
- i) It shall be deemed that by submitting a bid, the Bidder has undertaken a complete and careful review of the E-Auction/Tender Document and unconditionally and irrevocably accepted the terms and risks thereof.
- j) In case the day of completion of any requirement is falling due on a public holiday, the day of completion shall be deemed to be due on the next successive working day. The expression "public holiday" includes Saturday, Sunday and any other day declared to be a public holiday by the Central Government or the State Government, as the case may be
- k) Bidder shall be responsible for any problem at the Bidder's end which may cause inconvenience or prevent the Bidder from bidding in e-auction, such as, but not limited to, failure of electricity, loss of internet connection, any trouble with Bidder's computer, etc.
- l) This Tender Document is not chargeable.

1. A) Eligibility to participate:

- a) The applicant shall be an Indian National or a Company as defined in clause (20) of section 2 of the Companies Act 2013 (Central Act 18 of 2013) and domicile of Tamil Nadu having business and corporate office in Tamil Nadu.
- b) In case of a firm or other Association of persons, only if all the



members of the firm or members of the Association are citizens of India; in case of an individual, only if he / she is a citizen of India.

- c) In case of a firm or other association of persons, only if all the members of the firm or members of the Association are residing or doing business with an established office or corporate office in Tamil Nadu for a minimum period of five years.
- d) In case of an individual, only if he / she shall reside or doing business with an established office in Tamil Nadu for a minimum period of five years.
- e) The Applicant shall not have any dues, namely, mining dues, income tax dues, Goods and service Tax dues etc., to be paid to the Government.
- f) The applicant shall obtain a valid mining dues clearance certificate from the Assistant Director of geology and Mining where the quarrying or mining lease area is situated, in the form prescribed in Appendix-VIII of the Tamil Nadu Minor Mineral Concession Rules 1959.
- g) The applicant shall satisfy such other conditions as specified in this tender document.
- h) Bidders may be Proprietorship/Partnership Firm (including LLP)/Company as defined under the Companies Act, 1956 and as amended Act 2013 and should necessarily be an Income Tax Assesses and should be GST Registered Company.
- i) Bidder should have valid PAN and GST numbers.
- j) The applicant shall not have any dues, namely, Income tax dues, Goods and service Tax dues, etc., to be paid to the government.



k) Affidavit for furnishing the details of mineral - wise areas in each district of the State in respect of which the applicant himself or jointly with any other person has —

- I. Already held a quarrying lease or quarrying permission
- II. Already applied for grant of lease, but not yet granted; and
- III. Applied for the grant of lease simultaneously.

2. **e-TENDER WITH FORWARD BIDDING:**

- a) The details of the areas offered under the e-Tender with forward bidding for grant of Rough Stone quarry lease is given in the **Annexure -I.**
- b) The e-auction shall be an ascending forward online electronic auction and shall comprise the following rounds namely, a technical bid with Initial Price offer (1st round of e-auction) and offering of eligible bid amount (greater than the floor price) at e-auction with forward bidding (2nd round of e-auction).
- c) The bidders shall first submit their e-tenders and subject to their technical qualification, they shall take part in the e-auction with forward bidding when the live forward bidding is opened. During the stipulated date & time as in the critical data sheet **Annexure-V.**
- d) The date & time period of live e-auction with Forward bidding through the <https://Intenders.gov.in> portal will be intimated through the Tamil Nadu e-Tender portal / email after evaluation of the Technical and Financial bid.
- e) Only those bidders whose Initial tender price offered is greater than the reserved price and on fulfillment of other terms and



conditions of eligibility specified in the Gazette published and this tender document shall be considered as the Technically qualified bidders eligible to participate in the further round of e-auction.

- f) Whenever the number of Technically qualified bidders are more than ten, the first ten highest bidders shall be eligible for participating in the second round of e-auction, and if the number is less than 10, all the technically qualified bidders will be eligible for participating in the 2nd round of e-auction.
- g) If the number of bidders qualified to participate in the 2nd round of e-auction with forward bidding is less than three for a subject item, e-auction process shall be annulled for that item.
- h) The bidders shall quote an amount in multiples of one lakh rupees, over and above the reserve price, as auction price for the grant of quarry lease.
- i) The highest initial bid price offered amongst the qualified bidders quoted over and above the reserve price will be the floor price for the 2nd round of e-auction.
- j) The qualified bidder who offers the highest final price in the e-auction with forward bidding shall be declared as the successful bidder immediately on conclusion of the e-auction.
- k) The e-auction process for the subject item shall be annulled if none of the technically qualified bidders offer a final price or a price higher than the floor price for that item on the online e-auction platform.
- l) If there are any clarifications, the same may be obtained online through the e-Portal or through the contact details given in the tender document. Bidder should take into account of the corrigendum addendum published, if any.



before submitting the bids through online.

- m) Tender inviting authority will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to any technical issues.
- n) The time that is displayed from the server clock at the top of the tender portal, will be valid for all actions of bid submission, bid opening, e-auction with forward bidding etc.,
- o) E-tender / e-auction with Forward bidding cannot be accessed after the due date and time for bid submission.
- p) All notices and correspondence to the bidder(s) will be sent by email only, during the process till finalization of tender with forward bidding. Hence the bidders are required to ensure that their email address provided at the time of registration is valid and updated. Bidders are also requested to ensure validity of their DSC.
- q) Bidders are advised to see the website regularly to remain updated with latest information to ensure that they do not miss out any corrigendum / addendum uploaded against the said e-Tender with forward bidding. The responsibility of downloading the related corrigendum, if any, will be that of the bidders.
- r) All electronic bids submitted during the e-Tender with forward bidding process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Tender inviting authority will form a binding contract between TIA and the Bidder.
- s) It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system.
- t) Tender Inviting Authority reserves the right to cancel or reject or



accept or withdraw or extend the tender with forward bidding in full or in part as the case may be without assigning any reason thereof.

- u) The server time shall be treated as final and binding. Bids recorded in the server before the bid closing time will only be treated as valid bid. Bidders are, therefore, advised to submit their bids well before the closing time of e-tender cum auction. If any bid reaches the server after the bid closing time as per server time, the same will not be recorded and no complaint in this regard shall be entertained.
- v) Bidders are advised to exercise caution in quoting their bids in e-Tender with forward bidding to avoid any mistake. Bids once submitted can't be recalled after bid closing time.
- w) Tenders shall be subject to all the conditions stipulated in the Tender specification. Any other conditions of counter offers stipulated by the bidders in their tender will not be accepted.

3. PAYMENTS AND OTHER CONDITIONS:

- a. Any person interested to participate in the e-auction for an item/ number of items, shall pay through online a non-refundable application fee of Rs.5,000/- (Rupees five thousand only) for each item they intend to apply.
- b. Every bidder shall, while applying for an item/ number of items, shall pay online, The refundable bid security amount equal to 1% of the value of the estimated resources or Rs.10,00,000/- (Rupees ten lakhs only) for fresh rough stone quarries and Rs.5,00,000/- (Rupees five lakhs only) for other quarries, whichever is higher for each item they intend to apply.
- c. On declaration of the name of the successful bidder, the successful bidder shall pay 10% of the bid amount as initial



payment through electronic clearance service (ECS) within 24 hours of such declaration. If the 24 hours limit happens to be a bank holiday, the payment shall be made on the immediate next working day of the bank.

- d. If the declared successful bidder fails to pay the 10% of the bid amount within 24 hours, his/ her bid shall be rejected and the bid security amount paid by him / her shall be forfeited to the Government within two days.
- e. The declared successful bidder on payment of the 10% of the bid amount shall pay the remaining 90% of the bid amount, deducting the bid security amount already paid, through electronic clearance service (ECS), within one month from the date of declaration. If the bidder fails to do so, the 10% of the bid amount already paid by the successful bidder along with the bid security amount shall be forfeited to the Government within one week.
- f. On such rejection, the District Collector or the Assistant Director of Geology and Mining, as the case may be, shall declare the next highest bidder as the successful bidder immediately and shall direct him to pay the 10% initial payment within 24 hours through Electronic Clearance Service (ECS). If the 24 hours' limit happens to be a bank holiday, the payment shall be made on the immediate next working day of the bank.
- g. The successful bidder should submit a solvency certificate of immovable properties for a value not less than 20% of the bid amount within one month from the date of declaration from the District Collector or the Assistant Director.
- h. On receipt of payment of the balance 90% of the bid amount



from the successful bidder, in the case of rough stone the Assistant Director of Geology and Mining shall, communicate the precise area for grant of lease within fifteen days to the successful bidder, with a direction to submit mining plan within ninety days from the date of receipt of communication and to submit Environmental Clearance, for grant of quarry lease. All such communication of precise area shall be accompanied by the map showing the area attested by the Tahsildar and Assistant Director of Geology and Mining concerned.

- i. if the successful bidder fails to submit the mining plan for approval within ninety days, and the Environment Clearance, as specified in sub-clauses (a) and (d) of the said rule, as the case may be from the date of communication of the precise area for the grant of lease, the precise area communication shall be deemed to be cancelled and the payments made so far shall be forfeited to the Government.
- j. TIA will not be responsible for any sort of difficulties or delay faced by the bidder during the online payment.
- k. Any other mode of payment other than ECS (Electronic Clearance Services) shall not be accepted.
- l. In case of unsuccessful bidders, on conclusion of the e-auction process, the bid security amount paid by the persons other than the successful bidders shall be refunded automatically to bidders through "Pooling Account" of the State Government only. Tender Inviting Authority is no way responsible for refund of bid security amount to the unsuccessful bidders.



4. SUBMISSION OF e-TENDER:

Bidder has to select the payment option as "pay online" to pay the Tender Application fee and bid security amount. Only after payment of Tender Application fee and bid security amount, bidder will be able to encrypt/upload their bids. In order to avoid last minute lapses, it is recommended to make payment and submit the bid as early as possible.

Cover-1 named "Technical bid":

The bidder shall upload the scanned copies of the following:

- ✓ Annexure II duly filled & signed (Tenderer name, Full Postal address & contact details to be filled legibly without fail).
- ✓ Annexure III duly filled and signed.
- ✓ Scanned copy of Aadhar card.
- ✓ Scanned copy of GST Registration Certificate.
- ✓ Scanned copy of PAN Card.
- ✓ Scanned copy of Certificate of Registration.
- ✓ Affidavit for no mining dues / no mining due clearance certificate obtained from competent authority.

Cover -2 named "Financial bid":

The bidder shall download the BOQ (Bill of Quantities) template available under "Details of price quoted" and fill up the name of the bidder & the rates offered for each item in relevant column. After filling the details, the bidder should save it and upload without changing the file name.

Note: The rates quoted shall be exclusive of Seigniorage fee, DMFT, Green fund, GST and other taxes and levies imposed by the Government then and there. The same will have to be paid additionally by successful bidder.



5. FORCE MAJEURE:

In case, the terms contained herein or in the order cannot be performed either by the bidder or TIA for any reason arising out of the laws/regulations / restrictions governing mining industry, natural calamities, war/hostility, military operation of any character, civil commotions, sabotage, Pandemic, riots, quarantine restriction, acts of Government embargoes, the Successful Bidder shall not be entitled for any compensation.

6. NON ASSIGNABILITY:

The letter of confirmation issued to successful bidder is not transferable or assignable in whatsoever manner. Tender inviting Authority will not entertain any third party nominee/ assignee in whatsoever manner on behalf of the Successful Bidder.

7. TRACK THE WEBSITE:

Intending bidders are advised to visit <https://tntenders.gov.in> regularly till closing date of e-auction for any corrigendum / addendum / amendment.

8. DISCRETION:

- a) The tender accepting authority, reserves the right of rejection / cancellation of all or any of the tenders without assigning any reason thereof or split up the tender as deemed fit.
- b) The tender accepting authority, reserves the right to cancel the bid even after acceptance or during performance of the contract.
- c) The tender accepting authority reserves the right to alter/modify any of the above tender conditions before the award of the tender.



10. GRANT OF QUARRY LEASE

On completion of the above process, a quarry lease shall be granted to the successful bidder subject to the provisions of these rules,—

- a. By the Assistant Director of Geology and Mining concerned.
In the case of the minor minerals, namely, rough stone, the period for grant of quarry lease for rough stone in respect of areas which have not been subjected to quarrying so far, shall be ten years. The period of lease for quarrying rough stone in respect of other areas shall be five years.
- b. The lessee shall deposit ten percent of the bid amount as security deposit before execution of the lease deed:
- c. The Quarry Lease Deed shall be executed in the form in Appendix-I to these rules by the lessee with the Assistant Director of Geology and Mining in respect of all minor minerals except granite and the minor minerals specified in the Appendix-I-B, within a period of two months from the date of receipt of the order from the Assistant Director.
- d. The lease deed executed shall be registered under sub-section (1) of section 17 of the Indian Registration Act, 1908 (Central Act XVI of 1908).
- e. The lease period shall commence from the date of registration of the lease deed and shall expire on the date specified in the lease deed and in no case, extension of the period of the lease shall be made.
- f. Whenever the lessee fails to execute the lease deed within



specified time, the State Government may cancel the order granting the lease to him and all amounts paid by him shall be forfeited to the State Government;

- g. No lessee is entitled to raise any dispute with reference to the survey and demarcation of the area leased out to him after execution of the lease deed;
- h. No lessee shall commence any quarrying operation in any area without executing and registering the lease deed;
- i. if any new mineral is discovered in the quarry lease area granted under this rule, the holder of quarry lease shall report to the District Collector or the Assistant Director of Geology and Mining, as the case may be, as specified in rule 26 of Tamil Nadu Minor Mineral Concession Rules, 1959;

The lessee shall, besides the one-time payment of the bid amount, pay seigniorage fee or dead rent whichever is higher in respect of the actual quantity of the mineral removed or consumed at the rates prescribed from time to time in Appendix-II to these rules. Further, the lessee shall pay contribution to the District Mineral Foundation Trust Fund, Green Fund and such other levies at the rates as may be specified by the State Government from time to time.

Further the bidder should furnish their Permanent Account Number (PAN) in their offer. IDS / TCS deductible as per section 194Q and 206 C (1H) of IT Act, 1961 will be followed.

11. CONDITIONS FOR CARRYING OUT QUARRYING OPERATIONS.

- (a) The date of commencement of the period for which the quarry lease is granted under this Rule shall be the date on which the lease deed is registered.



- (b) Before execution of the lease deed the successful bidder/tender applicant shall deposit as security @ Ten percent (10%) of the bid/tender amount for which the lease has been granted by the State Government.
- (c) No lessee is entitled to raise any dispute with reference to the survey and demarcation of the area leased out to him after execution of the lease deed.
- (d) The lease shall expire on the date specified in the lease deed and in no case extension of the period of the lease shall be made.
- (e) No lessee shall commence any quarrying operation in any area without executing the lease deed. No lessee shall continue quarrying in the area after the expiry of the stipulated lease period. If any quarrying or transportation of the mineral is done without complying with or in violation of the above conditions, it shall be treated as illicit quarrying and illicit transportation and the lessee is liable to be punished for the offence without prejudice to any other actions that can be taken on the person as provided in these Rules or the Act.
- (f) The lessee shall remove and transport the mineral from the leasehold area after obtaining transport permit from the Deputy / Assistant Director of Geology and Mining and complying with the other conditions stipulated in these Rules.
- (g) The lessee shall not quarry any other mineral other than the purpose for which the lease is granted. If, any other mineral / valuable metal is found to be noticed, the quarrying operation shall be stopped at once and intimated to the District Collector / Government.
- (h) The lessee shall not without the previous consent in writing of the State Government assign, sublet, mortgage or in any other manner transfer the quarrying lease as specified in Rule-36 F of Tamilnadu Minor Mineral Concession Rules, 1959.
- (i) The lessee shall keep correct accounts showing the quantity and other particulars of all minerals quarried and transported from the quarry site. The lessee shall also allow any officer



authorized by the State Government or the Director of Geology and Mining or the District Collector in this behalf to inspect the quarry and verify the records and accounts and to furnish such information and returns as may be required by him.

- (j) The lessee shall carryout the quarrying operations in a skillful, scientific and systematic manner keeping in view the proper safety of the labour, conservation of minerals and preservation of the environment and ecology of the area.
- (k) The lessee shall allow any officer authorized by State Government, or the Director of Geology and Mining, or the District Collector concerned to enter upon the leasehold area and inspect for the purpose mentioned in clause (a) and for any other purpose which may be required for compliance of the provisions of the Act and these rules or any other Act or Rules framed by the Central Government or the State Government.
- (l) The Lessee shall at his own expense erect the boundary of the quarry lease area according to the map in the approved mining plan with a concrete pillar as stipulated under rules and, at all times, maintain and keep such boundary marks in good repair.
- (m) The lessee shall make a display board in front of the Quarry, mentioning the name of the lease holder and the full details of the lease.
- (n) The Lessee shall abide by all the conditions of Quarry Lease as provided under Rule 36 of the TNMMCR, 1959.
- (o) For any violation of provisions under the TNMMCR, 1959 and its Amendments, the lessee shall be held responsible and shall be liable for appropriate legal action.
- (p) The Competent Authority shall have the power to rectify any error or corrections in the present E-Auction/Tender notification.
- (q) The Competent Authority reserves the right to cancel the E-Auction/E-Auction/Tender process without assigning any reasons thereof.



12. OTHER CONDITIONS

- i. The period for which the area granted on lease for quarrying under this rules will be mentioned in the lease deed.
- ii. The quarrying lease will be granted only in the name of the successful Tenderer/bidder declared by the District Collector/Assistant Director of Geology and Mining.
- iii. No quarrying activities shall be commenced before the registration of the lease deed agreement.
- iv. The Executed lease deed shall be registered at the cost of the lessee.
- v. While quarrying no hindrance shall be caused to the adjoining pattadars and publics.
- vi. The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch without any encroachments.
- vii. The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lease holder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.
- viii. The lessee should make his/her own arrangement to form the approach road from the public road to the place of the quarry.
- ix. The lessee shall abide to all the provisions of Mines and Minerals (Development and Regulation) Act, 1957, The Metalliferous Mines Regulations 1961 or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
- x. Quarry lease area should be demarcated state on ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar with DGPS reading shall be erected before commencement of quarrying and it should be maintained throughout the period of lease.



- xi. No quarrying shall be made within the safety distance of 7.5 mts to the adjacent patta lands and 10 mts to the adjacent Government Paramboke land.
- xii. Pit Mouth register should be maintained in the quarry site.
- xiii. A minimum distance of 50 mts. from any Electric / Telephone lines, Railway line, Reservoir canal, National highways and other public works shall be kept from the periphery of any excavation area and 10 mts safety distance to the village roads shall be kept and maintained during the entire lease period.
- xiv. Quarry operations shall be carried only after appointing Mines Manager/Mines Mate and it should be carried out on the supervision of Mines Manager/Mines Mate.
- xv. Notice of opening of the quarry should be sent to the Director of Mines safety, Chennai.
- xvi. In any accident occur in the quarry area the lessees should give intimation to the Director of Mines safety Chennai and District Collector concerned at once and lessee is solely responsible for any violation.
- xvii. The lessee should get the consent for establishment and for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.
- xviii. The conditions imposed by the TNPCB in the consent order should be adhered without any omission.
- xix. The Environmental clearance and the consent of the TNPCB should be renewed periodically without any lapse.
- xx. If any quarrying is found in the area granted on lease before the date of execution of lease deed, the lease is liable to be cancelled and criminal action will be initiated.
- xxi. No lease granted under this rule shall be extended.
- xxii. The lessee shall provide safety distance in the area as per the rules in force or any rule which may be imposed by Government. He must also take up all safety measures as directed by the Government at his own cost.



13. SPECIFIC CONDITIONS

- i. It is the responsibility of the bidders to inspect the notified Rough Stone quarry area to verify and analyse the quantities and quality of such Rough Stone offered under the e-auction and to satisfy themselves of the prevailing site conditions for the purpose quarrying and transporting the said Rough Stone, before quoting their bid on e-Auction platform.
- ii. No disputes shall be entertained after submission of bids, regarding.
 - ✓ Volume of Rough Stone.
 - ✓ Site Condition
 - ✓ Accessibility/approach roads/Logistics.
 - ✓ Supporting infrastructure and any other issue that relates to any matter between the time of making the bids quarrying and transportation of the Rough Stone.
- iii. If anything found that the bidder has furnished false information or concealed any vital information in the affidavit, his bid shall be considered invalid;
- iv. If it is found out after the grant of lease that the lessee has furnished false information (or) concealed any vital information in the affidavit, the lease shall be terminated with immediate effect;

14. SPECIAL CONDITIONS

- I. The Government reserves the right to accept or reject any or all tender / bid applications either in part or in full without any liability to the Government or any of the officers of the Government.
- II. The authority for acceptance of tender / bid shall rest with the Government. The Government do not bind themselves to accept the highest or any other tender / bid applications.
- III. The applicants participating in the tender / bid either should have (or) shall obtain a valid Permanent Account Number issued by the Income Tax department of Government of India.



- iv. At the time of obtaining transport permit the lessees shall have to pay as 2% as TDS to Income Tax Department on the total Seigniorage Fee paid for the applied volume of mineral.
- v. The Lessee shall pay 10% of the seigniorage fee as Green Fund, for the minerals transported within the State and 50% of the seigniorage fee for the minerals transported outside the State.
- vi. The lessee shall strictly adhere to the statutory and safety requirements.
- vii. The waste materials generated during quarrying operation shall be dumped only within the area granted under lease.
- viii. Quarrying shall be done as per the approved Mining Plan and as such laws made by the Central Government/State Government and any other notifications issued then and there.
- ix. The lessee/grantee shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.
- x. Any other conditions stipulated by other Statutory/Government authorities shall be complied with.


DISTRICT COLLECTOR,
TIRUVANNAMALAI

 
For any technical assistance with regard to e-tendering, the bidders may contact the following official on all working days:-

Assistant Director,
Dept. of Geology and Mining,
Collectorate,
Tiruvannamalai.
Mobile No: 9790615044 & 9080929741

ANNEXURE -I**Rc.No.363/Mines/2024****Dated: 05.12.2024****THE DETAILS OF THE AREAS FOR GRANT OF ROUGH STONE QUARRY
LEASES IN TIRUVANNAMALAI DISTRICT THROUGH
e-Tender WITH FORWARD BIDDING****1. TIRUVANNAMALAI TALUK**

Sl.No.	Village	S.F.No.	Extent (In Ha.)	Land Classification	Lease Period
1	Adalyur	49/2(P-2)	2.00.0	Kallanguthu	5 Years
2	Melkatchirapattu	113 (Part)	1.00.0	Pargi	5 Years
3	Pavupattu	6/1 (Part)	1.00.0	Unreserved Forest	5 Years
4	Athipadi	45/2C(P-6)	1.00.0	Kallanguthu	10 Years
5	Athipadi	45/2C(P-7)	1.00.0	Kallanguthu	10 Years

2. CHENGAM TALUK

Sl.No.	Village	S.F.No.	Extent (In Ha.)	Land Classification	Lease Period (In Years)
6	Se.Agaram	21 (Part)	1.00.0	Kallanguthu	10 Years

3. THANDARAMPATTU TALUK

Sl.No.	Village	S.F.No.	Extent (In Ha.)	Land Classification	Lease Period (In Years)
7	Tharadapattu	32/3A(part)	1.00.0	Kallanguthu	10 Years
8	Tharadapattu	129(part)	1.50.0	Malai	10 Years
9	Royandapuram	292/1A	1.77.5	Kallanguthu	10 Years

**DISTRICT COLLECTOR,
TIRUVANNAMALAI .****R. Kalpana**

ANNEXURE - M**Rc.No.363/Mines/2024****Dated: 12.2024****BACK GROUND DETAILS OF BIDDER**

1.	Name of the applicant in which the quarry lease is required to be granted with full postal address.	
2.	(a) The applicant shall be an Indian National or a company as defined in clause (20) of section 2 of the Companies Act, 2013 (Central Act 18 of 2013) and domicile of Tamil Nadu having business and Corporate Office in Tamil Nadu. Is the applicant an Individual or Private Company, Firm or Association	
	(b) If the applicant is an Individual, specify his name, nationality and address:	
	Telephone No.	
	Mobile No:	
	Contact Person:	
	Email Address:	
	PAN Number.	
	GST Number	
	(c) If the applicant is private company, firm or association, specify name of directors, partners, members and their Nationality (Documentary evidence should be produced)	
	Status of the firm : Proprietorship/Partnership Company (Certificate of Registration to be enclosed)	
	Telephone No.	
	Mobile No:	
	Contact Person:	
	Email Address:	
	PAN Number.	
	GST Number	

R. Kalpana



3.	(a) Particulars of remittance of application fee (The applicant shall pay through online a non-refundable application fee of Rs.5,000/- (Rupees Five thousand only) in respect of rough stone)(online remittance details to be uploaded)	
	(b) Particulars of remittance of Bid Security Amount - 1. Every bidder shall, while applying for bidding, pay online, a bid security amount equal to 1% of the value of the estimated resources or Rs.10,00,000/- (Rupees ten lakh only) for fresh quarries and Rs.5,00,000/- (Rupees five lakh only) for other quarries, whichever is higher, in case of rough stone. (online remittance details to be uploaded)	
4.	Has the applicant filed certificates that the applicant has -	
	(a) No Mining dues - Mining Dues Clearance Certificate towards payment of quarrying dues to be uploaded. (The applicant shall obtain a valid mining dues clearance certificate from the Assistant Director of Geology and Mining where the quarrying or mining lease area is situated, in the Form prescribed in Appendix VIII to these rules for having paid mining dues such as royalty, seigniorage fee, lease amount, dead rent, surface rent, area assessment, local cess and local cess surcharge and the penalty amount payable under the Act or these rules or under the lease deed or agreement already executed or entered into by the applicant)	
	(b) No Income-tax dues - Upto date Income Tax returns in the Form ITR to be upload.	
	(c) No Goods and Service Tax dues	
5.	Minor Mineral which the applicant intends to quarry with descriptions:	

R. Kalpana



6.	Period for which quarrying lease is required;					
7.	Total extent of the area applied for;					
8.	Details of the area for which the tender application is made					
S/ No in the Gazette notification	District	Taluk	Village	Survey number	Area in hectare	
(1)	(2)	(3)	(4)	(5)	(6)	
12	Affidavit for furnishing the details of mineral - wise areas in each district of the State in respect of which the applicant himself or jointly with any other person has — (i) already held a quarrying lease or quarrying permission; (ii) already applied for grant of lease, but not yet granted; and (iii) applied for the grant of lease simultaneously. (to be uploaded)					
13	Any other particulars which the Tenderer wishes to furnish:					

I /We do hereby declare that the particulars furnished above are correct and am /are ready to furnish any other details and security deposit as may required by the Government or District Collector or District Forest Officer. I hereby swear and state that I/We know very well about the provisions contained in the Tamil Nadu Minor Mineral Concession Rules, 1959 in respect of granting of quarry lease applied for and other conditions stipulated in connection with the quarrying and other operations.

**SIGNATURE OF THE TENDERER
WITH OFFICE SEAL (if any)**

Encl: The scanned copy of the following documents has to be uploaded

1. Aadhar Card
2. GST Registration
3. PAN card.
4. Certificate of Company Registration

[Signature]
05/12/2024
COLLECTOR
Tiruvannamalai District
Tiruvannamalai

R. Kalpana
05/12/24

[Signature]

ANNEXURE - III

TENDERER/BIDDER DECLARATION FORM

Rc.No.363/Mines/2024

Dated: .12.2024



1. I/we have gone through the tender document and all the instructions to the bidder and agree to abide by all the conditions and terms mentioned therein.
2. I / We hereby quote the price for the E-auction of Rough Stone quarry / quarries specified in the Annexure I. The quotations furnished in the schedule are subject to the conditions set-forth in the tender form.
3. I / We also swear and state that on no circumstances I / We will produce any rough blocks / slabs or any other form of stone from the area applied for lease either for export purpose in the form of raw blocks, slabs, etc., or for using them in a cutting and polishing industry.
4. I/We hereby certify that our firm has not been banned by the Government on account of unfair business dealings with any Government Departments and Government undertaking.
5. I / We also swear and state that if any false information or concealed any vital information in the affidavit are to be found in later, I /We understand that the bid to be invalid.
6. I / We also swear and state that if any false information or concealed any vital information in the affidavit are to be found after the grant of the lease, I /We understand that the lease to be terminated.

**SIGNATURE OF THE TENDERER.
WITH OFFICE SEAL (R any)**


COLLECTOR 09/12/2024
Tiruvannamalai-District
Tiruvannamalai


R. Kalpana
09/12/2024



ANNEXURE-IV

DETAILS OF PRICE QUOTED

Rc.No.363/Mines/2024 Dated: .12.2024

BOQ

R. Kalpana

ANNEXURE -V

Rc.No.363/Mines/2024 Dated: .12.2024



CRITICAL DATA SHEET

Publishing date	
Bid document download starting date	09.12.2024 from 1100 hrs
Bid submission starting date	09.12.2024 from 1100 hrs
Bid Submission ending date	26.12.2024 upto 1600 hrs
Technical bid opening date	27.12.2024 1100 hrs
Financial bid opening date / Auction Date	Will be Intimated later on through Tamil Nadu e-Tender portal
Tender Application fee	Rs.5,000/- (Non-refundable)
Bid Security Amount	As per Annexure VI of the Tender Document

[Signature]
05/12/2024
DISTRICT COLLECTOR,
TIRUVANNAMALAI.

[Signature]
05/12/24

R. Kalpana



ANNEXURE -VI
DETAILS OF EMD AND TENDER FEE / APPLICATION FEE

SLNo.	Taluk	Village	S.F.No.	Extent (In Ha.)	Proposed lease period in years	EMD fixed as per G.No.21 dt:31.07.2024 (In Rs.)	Tender fee / Application fee (In Rs.)
1	Tiruvannamalai	Adalyur	49/2(P-2)	2.00.0	5 Year	17,29,769	5000
2	Tiruvannamalai	Meikachirapattu	113 (Part)	1.00.0	5 Year	5,00,000	5000
3	Tiruvannamalai	Pavupattu	6/1 (Part)	1.00.0	5 Year	5,40,263	5000
4	Tiruvannamalai	Athipadi	45/2C(P-6)	1.00.0	10 Years	10,00,000	5000
5	Tiruvannamalai	Athipadi	45/2C(P-7)	1.00.0	10 Years	10,00,000	5000
6	Chengam	Sa.Agaram	21 (Part)	1.00.0	10 Years	10,00,000	5000
7	Thandarampattu	Tharadapattu	32/3A(part)	1.00.0	10 Years	10,00,000	5000
8	Thandarampattu	Tharadapattu	129(part)	1.50.0	10 Years	15,06,010	5000
9	Thandarampattu	Royandapuram	292/1A	1.77.5	10 Years	24,53,710	5000

Note: The bidders shall pay respective EMD for each proposed areas for which they want to apply. For other non-interested areas for which they don't want to apply, the Bidder shall Click "EMD Exemption" option available in the portal during online application and shall upload "self - declaration" statement with signature by stating the reason why EMD Exemption is availed.


 05/12/2024
 DISTRICT COLLECTOR,
 TIRUVANNAMALAI.


 B. Kalpana

B. Kalpana



ANNEXURE-VII

SWORN AFFIDAVIT

I am _____ Age _____ residing at _____
do hereby solemnly and sincerely state the list of minor mineral quarries
already held by me under lease and applied for grant of quarry lease as
under affirm on oath and state as follows:

- I. Has already held a quarrying lease or quarrying permission
- II. Has already applied for grant of lease, but not yet granted;
and
- III. Being Applied for the grant of lease simultaneously

I submit that the above fact are true and correct to the best of my
knowledge and belief

Signature invalid

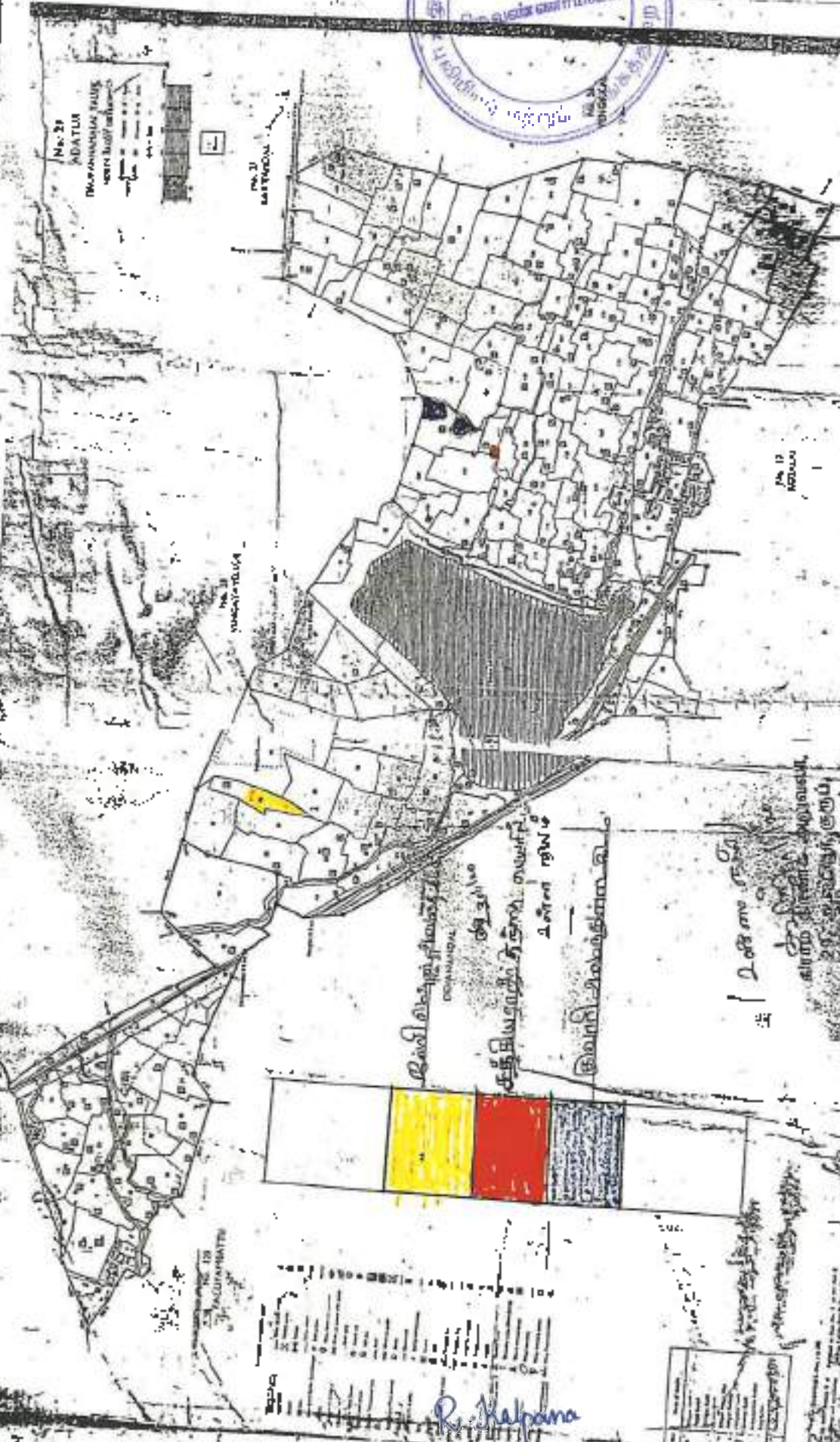
R. Kalpana

Digitally signed by PRASATH HARIRAM
Date: 2024.12.08 12:21:11 IST
Location: Tamil Nadu-TN

APARAYUR Village map



ANNEXURE II



மணியாறு கிணர் துறை
சீர்திருத்தம்
செய்யப்பட்டுள்ளது
மேலும்
சீர்திருத்தம்
செய்யப்பட்டுள்ளது

மேலும்
சீர்திருத்தம்
செய்யப்பட்டுள்ளது

R. Kalpana

1	2	3	4	5	6	7	8	9	10
47-1	24-1	0	4	7.4	7	3.75	0	39.0	2 72
-2	-2	0	4	7.4	7	3.75	2	00.0	5 50
-3	-3	0	4	7.4	7	3.75	0	33.0	34
-4	-4	0	4	7.4	7	3.75	0	50.0	1 08
48-1	-5	0	4	7.4	7	2.75	0	32.0	3 53
-2	26	0	4	8.4	8	2.00	1	53.0	3 65
48-1	25-2A	0	4	7.4	7	2.75	3	10.5	5 79
-2	-2A	0	4	7.4	7	2.75	0	46.0	1 32
-3	-2A	0	4	7.4	7	2.75	0	39.0	3 45
-4	-2A	0	4	7.4	7	2.75	0	24.0	0 66
-5	-2A	0	4	7.4	7	2.75	12	40.5	10 22
50-1	-1A1	0	4	8.4	8	2.00	1	45.0	2 93
-2	-1A2	0	4	8.4	8	2.00	1	56.0	3 12
-3	-1A3	0	4	8.4	8	2.00	0	60.0	1 20
-4	-1A4	0	4	8.4	8	2.00	0	45.5	0 91
-5	-2C	0	4	8.4	8	2.00	4	07.5	8 15
51-1	27	0	4	8.4	8	2.00	5	18.0	6 36
-2	28 1A15	0	4	8.4	8	2.00	0	42.0	0 84
-3	-1A15	0	4	8.4	8	2.00	3	69.5	7 20
52-1	10-1	0	4	7.4	7	2.75	1	98.0	5 45
-2	-1	0	4	7.4	7	2.75	0	30.0	0 40
-3	-1	0	4	7.4	7	2.75	0	45.0	0 55



307 டி. ரேணு (1) வினா
வ. ராமலிங்கம் (2)
273 வ. ராமலிங்கம்

307 டி. ரேணு (1) வினா
வ. ராமலிங்கம் (2)
273 வ. ராமலிங்கம்

தமிழ்

வருவது
குடிசை
தமிழ்

தமிழ்

தமிழ்

204 கோ. பிரியலட்சுமி
நினைவு

333 வ. மார்ட்டின்

166 பேர. தங்கராசு

166 பேர. தங்கராசு

174 மு. சா. சிவசுந்தரி
முத்து

264 பேர. கோபாலசாமி

43 குகசுந்தரி
புதுவிலாசு

56 பேர. சா. சிவசுந்தரி
சுமங்கலம்

91 பேர. சா. சிவசுந்தரி
சுமங்கலம்

R. Kalpana


भारत सरकार
GOVERNMENT OF INDIA


கல்பா ராஜன்
Kalpana Rajan
பிறந்த தேதி / DOB: 26/12/1985
பாலம் / FEMALE

3687 9734 4582


MEERA AADHAAR, MERI PEHACHAN

ANNEXURE **V**




भारतीय जनता पार्टी
INDIAN NATIONAL PARTY

முகவரி:
மணிகாண்டன், 798, பஜனாலை
கோவில் தெரு,
தேவிகாபுரம் (சென்னை)
தகவல், திருவண்ணாமலை,
தமிழ் நாடு - 606902

Address
W/O, Manikandan, 798,
Bajanai Kovil Street,
Devikapuram (CT),
Tiruvannamalai,
Tamil Nadu - 606902

3687 9734 4582


R. Kalpana

CHETTINAD CEMENT CORPORATION LTD.

ANNEXURE VII

Regd. Office: RANI SEETHAI HALL BUILDING IV & V FLOORS, 600, ANNA SALAI, MADRAS-600006.)

WORKS OFFICE: PULYUR.

TELEPHONE 21144 | KARUN
22744 |
21745 |
GRAM "CEMENT" Pullyur C.F.
Tele: 0456-216.
STD Code: 04320



All Correspondences to
Kumaranajah Muthiah Nagar
PULYUR CEMENT FACTORY POST 638114
(Korur Telex Trichy Dist.)

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.

<u>Name of the Pit.</u>	<u>Average Raising/day.</u>
1. Alambadi Pit.	- 1,700 T.
2. Maliapuram 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.

R. Kalpana



Faculty of Science

The Senate of the Annamalai University hereby makes known that B. 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.

Annamalai University
24th December, 1976.

R. Kalpana

A. Chandrasekha
Vice-Chancellor.

PLATE NO: 1

DATE OF SURVIVAL: 07-05-2005

APPLICANT:

1. CARL DAN
2. DANIEL KOWITZ
3. DANIEL KOWITZ
4. DANIEL KOWITZ

QUARRY LEASE APPLIED AREA

S.F.NO 49/2PART-21

$$[\text{XtEN}^-] : 2.0\% \text{ CH}_3\text{OH}$$

2011 AG- 172711K.

$$T_{\Delta L L K} = T F U : \rho N N \Delta \leq \Delta | \Delta |.$$

251R Cl KLVAKKAKMLA.

INDEX

Q. L. APPM. ED. AREA

TOPOSHIFTNO : 57 P:03

LATITUDE 32 16'18" N 107 18'25" W

1.0861720E+03 0.000000E+00 0.000000E+00

LOCATION PLAN

NOT TO SCALE

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, BASED UPON THE LATEST AVAILABLE FINANCIAL DATA STATE GOVERNMENT

C. NATARAJAN, M.Sc., M.Phil.,
QUALIFIED PERSON

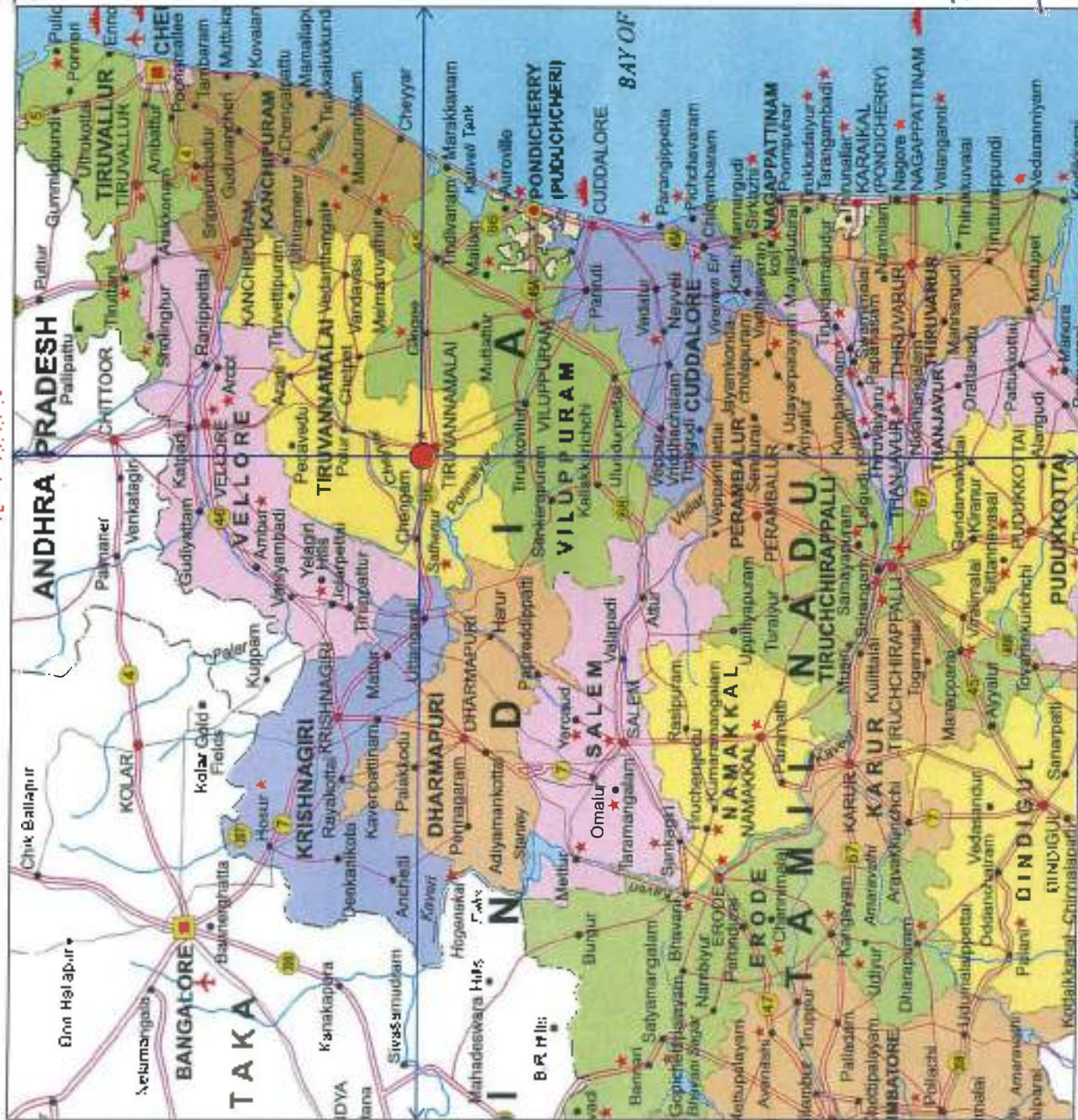


PLATE NO: 1A

DATE OF SURVEY: 01.05.2025

APPLICANT:

TAMIL KALPANA,

W/O MANIKANDAN,

No.796, SAJANA KOVIL STREET,

DEVINA PURAM, CHITPAI TALUK,

THIRUVANNAMALAI DISTRICT-605 902.

QUARRY LEASE APPLIED AREA

S.F.NO : 49/2(PART-2)

EXTENT : 2.00 CHA,

VILLAGE : ADAIYUR,

TALUK : THIRUVANNAMALAI,

DISTRICT : THIRUVANNAMALAI.

INDEX

TOPO SHEET NO : 57 P-03

LATITUDE : 12°16'38.23"N to 12°16'45.53"N

LONGITUDE : 79°02'09.62"E to 79°02'14.38"E

Q.L.APPLIED AREA

300M RADIUS

500M RADIUS

1KM RADIUS

APPROACH ROAD

CARTTRACK

PANCHAYAT ROAD

ODA

BARREN LAND

TREES

SEASONAL AGRICULTURE

HABITATIONS

QUARRY PIT

TANK

ODA

CRUSHER PLANT

FOR=SI

LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD	05
TREES	05
BARREN LAND	40
AGRICULTURE LAND	20
HABITATIONS	05
WATER BODIES	20
FOREST	05

ENVIRONMENTAL PLAN

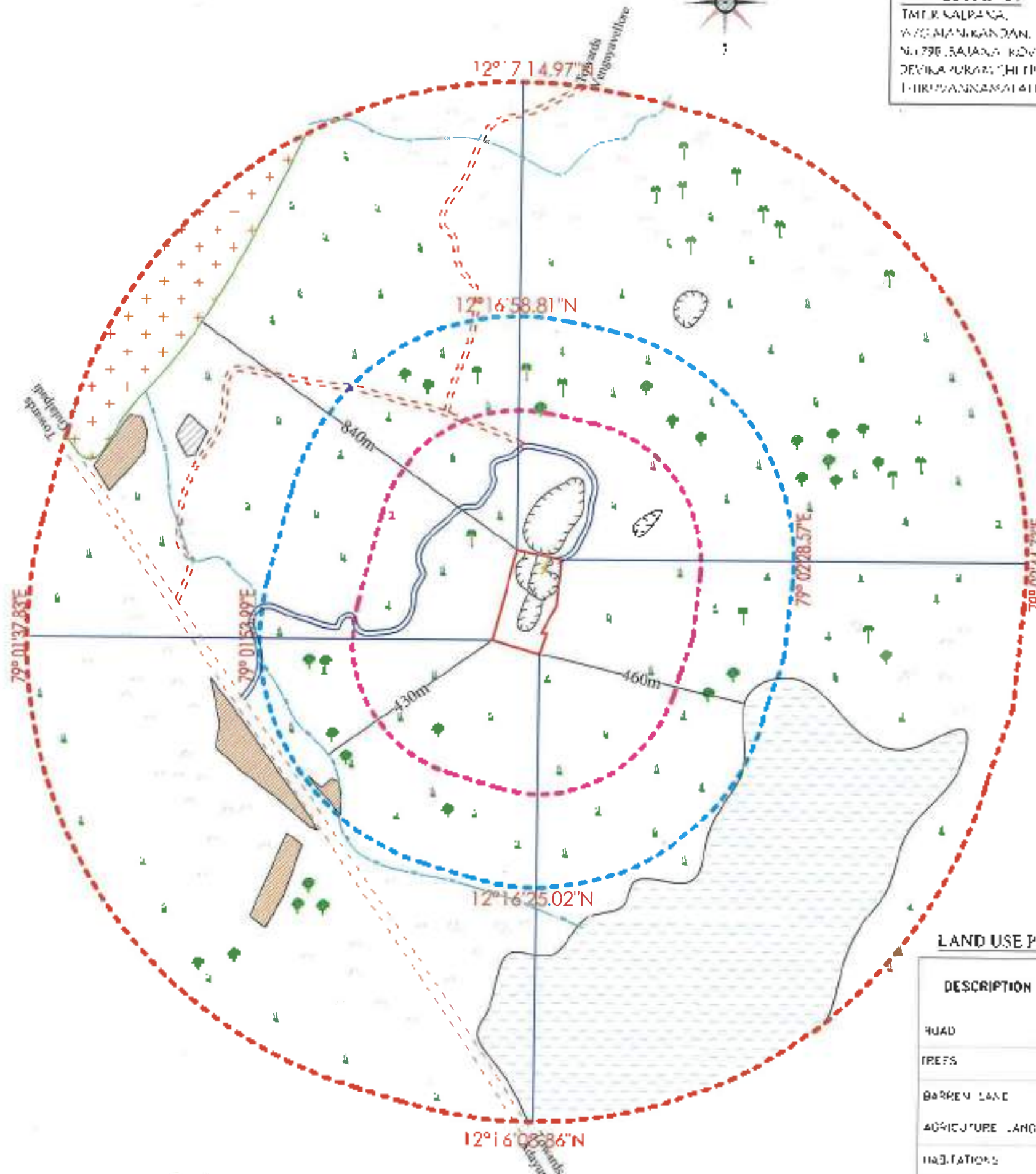
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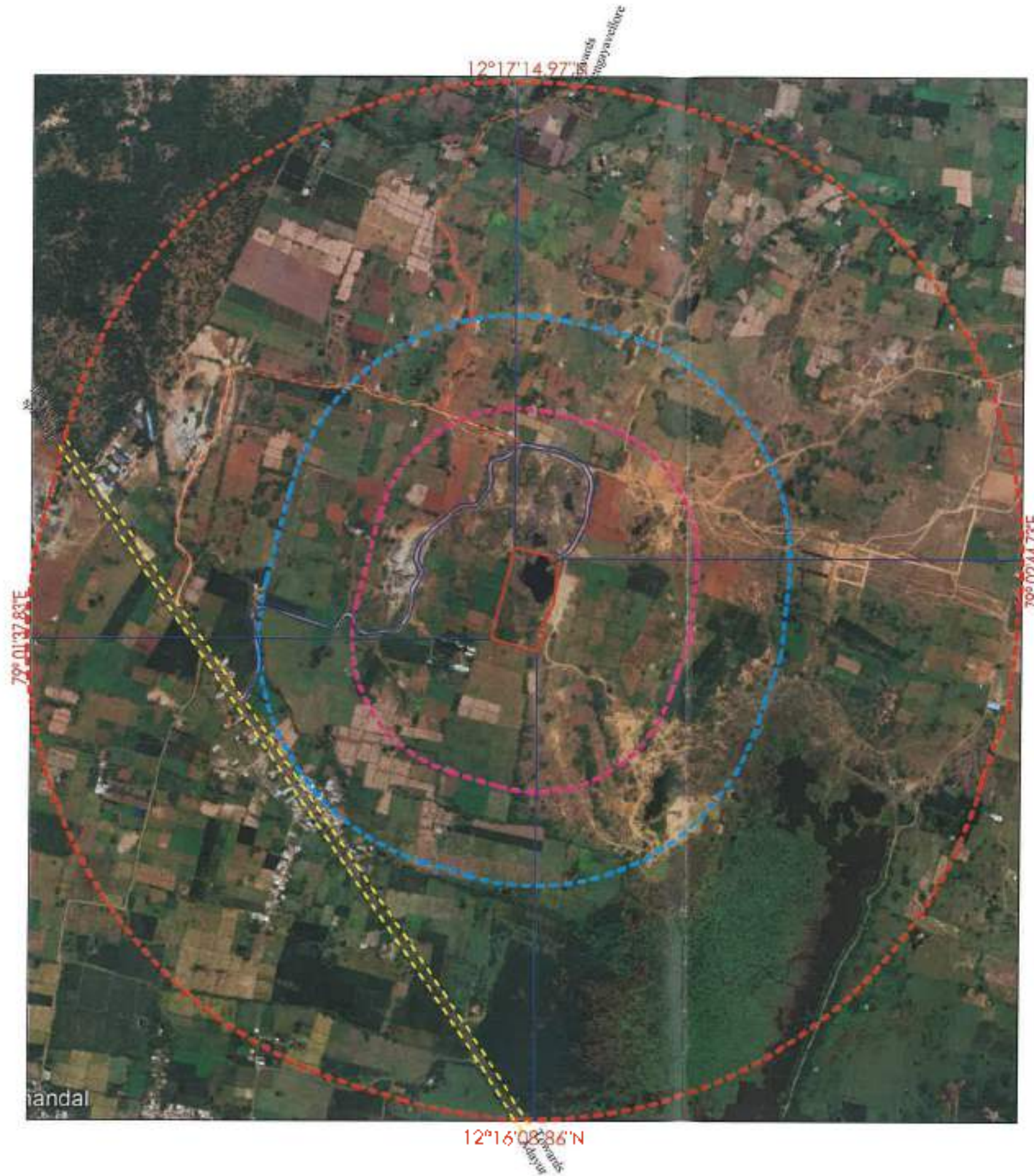
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C.NATARAJAN, M.Sc, M.Phil.,
QUALIFIED PERSON

R. Kalpana





R. Kalpana



PLATE NO: 1B
DATE OF SURVEY : 01.05.2025

APPLICANT:
M^{rs} K. KALPANA,
W/O: MANICKANDAN
No 75B RAJANAY KOVIL STREET
DEVIAAPURAM, CHETPET TALUK,
TIRUVANNAMALAI, DISTRICT 606 902.

QUARRY LEASE APPLIED AREA:
S.F NO : 49/2(PART-2)
EXTENT : 2.00.01-A.
VILLAGE : ADAIYUR.
TALUK : TIRUVANNAMALAI,
DISTRICT : TIRUVANNAMALAI.

INDEX
TOPO SHEET NO : 57 P/03
LATITUDE : 12°16'38.23"N to 12°16'45.53"N
LONGITUDE : 79°02'09.62"E to 79°02'14.38"E

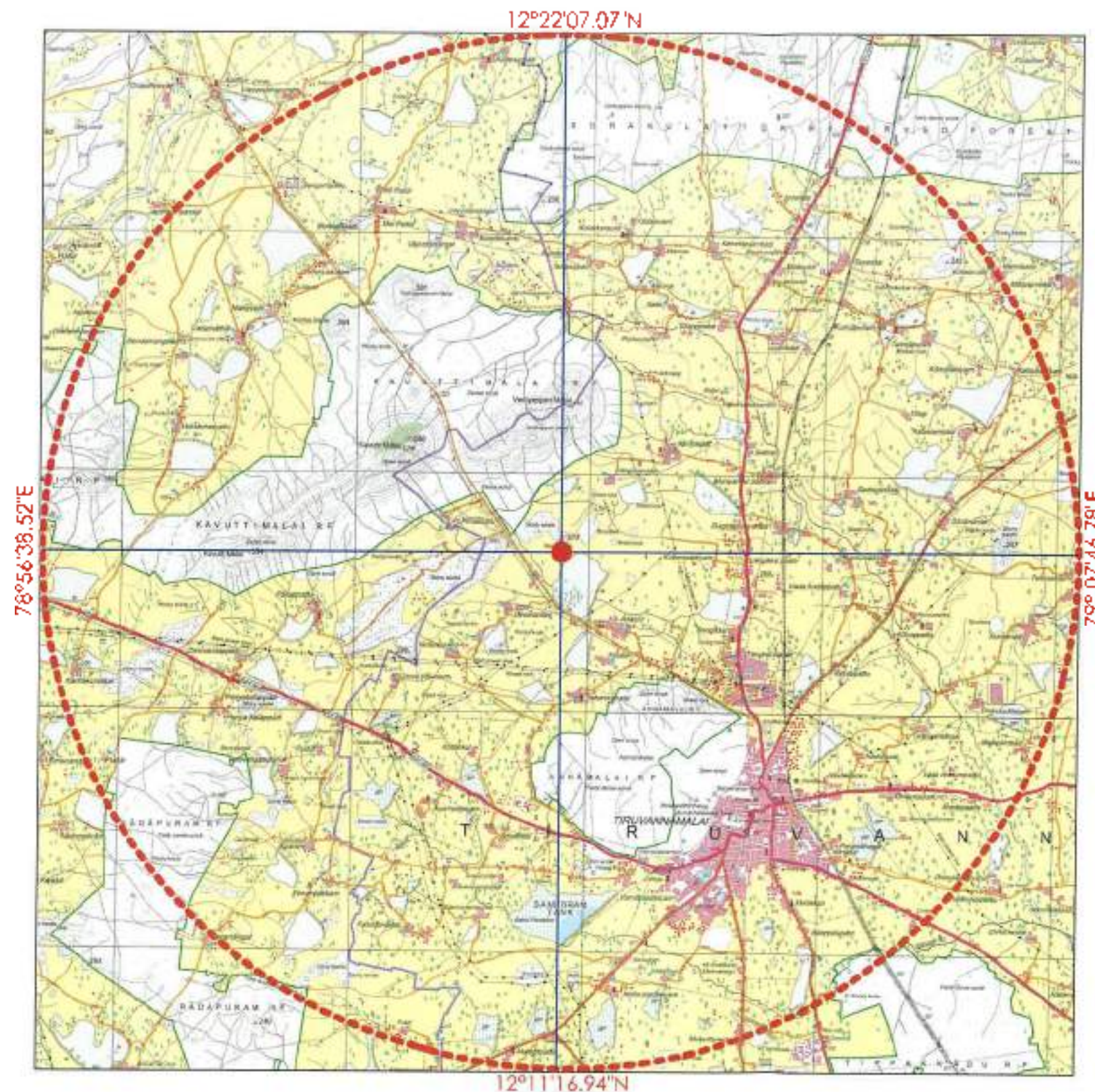
Q.L APPLIED AREA	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
CARTTRACK	
PANCHAYAT ROAD	

SATELLITE IMAGERY MAP

SCALE 1: 10,000

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GOVERNMENT

C. NATARAJAN, M.Sc, M.Phil.,
QUALIFIED PERSON



R. Kalpana



PLATE NO-I C

DATE OF SURVEY : 01.05.2025

APPLICANT:

TMT. K. KALPANA
W/O. MANIKANDAN
NO. 79B, RAJANATHOVI STREET,
DEVINAPURAM, CHETPET TALUK,
TIRUVANNAMALAI DISTRICT - 606 002

QUARRY LEASE APPLIED AREA:

S.T. NO : 49/2(PART-2)
EXTENT : 2.00.3HA.
VILLAGE : ADAIYUR.
TALUK : TIRUVANNAMALAI,
DISTRICT : TIRUVANNAMALAI

INDEX

TOPO SHEET NO : 57 P/03

LATITUDE : 12°16'38.23"N to 12°16'45.53"N

LONGITUDE : 79°02'09.62"E to 79°02'14.38"E

Q.L. APPLIED AREA

10KM RADIUS



TOPO SKETCH OF QUARRY LEASE

APPLIED AREA FOR

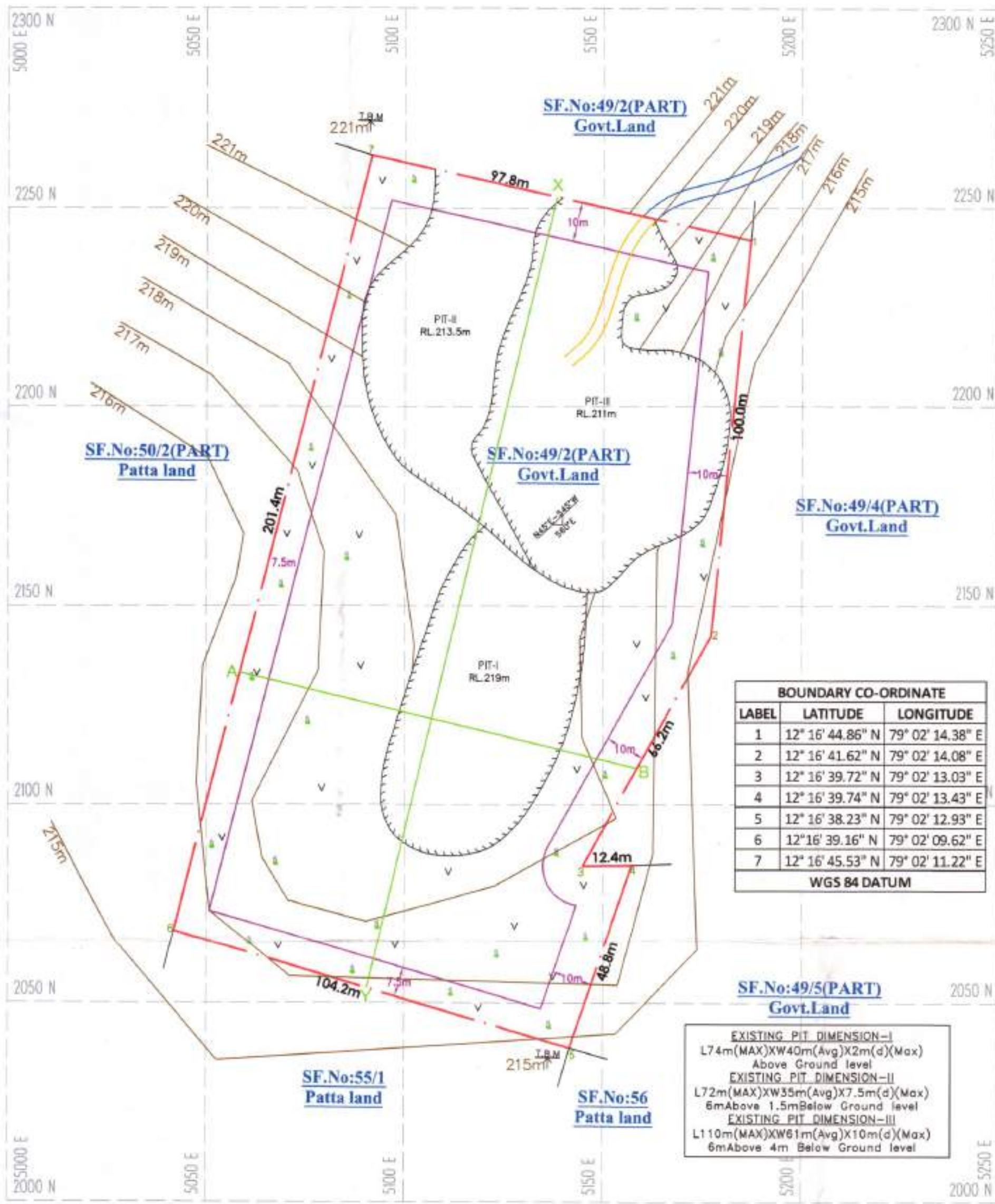
10km RADIUS

SCALE - 1:100000

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C. NATARAJAN, M.Sc., M.Phil.,
QUALIFIED PERSON





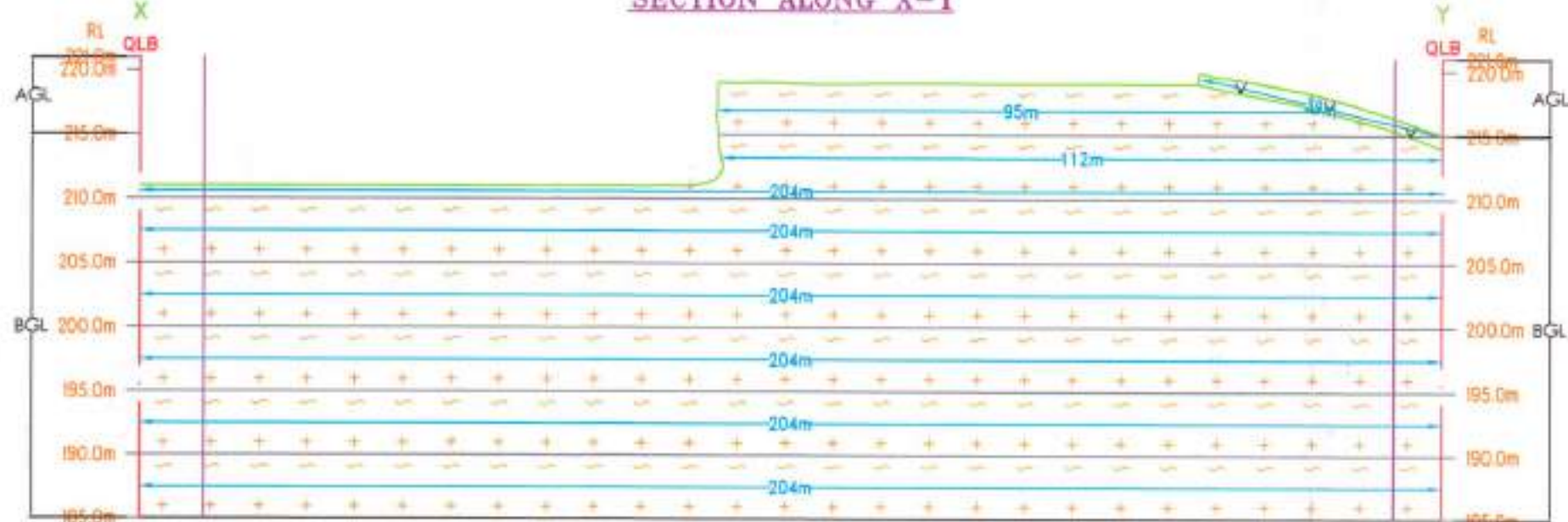
BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	12° 16' 44.86" N	79° 02' 14.38" E
2	12° 16' 41.62" N	79° 02' 14.08" E
3	12° 16' 39.72" N	79° 02' 13.03" E
4	12° 16' 39.74" N	79° 02' 13.43" E
5	12° 16' 38.23" N	79° 02' 12.93" E
6	12° 16' 39.16" N	79° 02' 09.62" E
7	12° 16' 45.53" N	79° 02' 11.22" E
WGS 84 DATUM		

PLATE NO-III
DATE OF SURVEY :09.07.2025

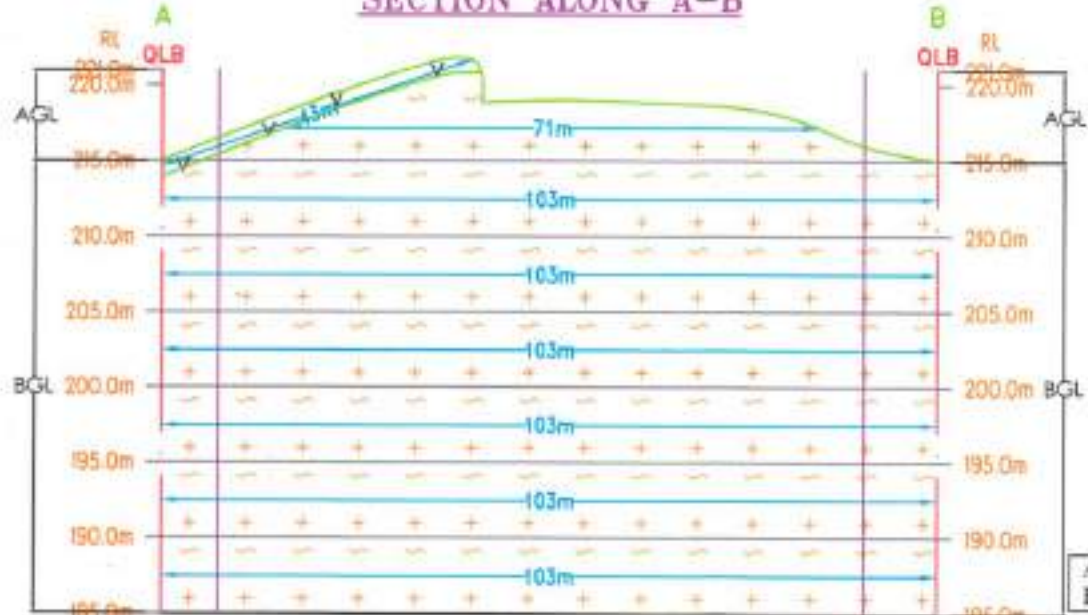
APPLICANT:
T.M.T.R.KALPANA,
W/O.MANIKANDAN,
No.798 ,BAJANAI KOVIL STREET,
DEVIKAPURAM,CHETPET TALUK,
THIRUVANNAMALAI DISTRICT-606 902.

QUARRY LEASE APPLIED AREA:
S.F.NO :49/2(PART-2)
EXTENT : 2.00.0Ha,
VILLAGE :ADAIYUR,
TALUK : TIRUVANNAMALAI,
DISTRICT : TIRUVANNAMALAI.

SECTION ALONG X-Y



SECTION ALONG A-B



AGL-Above Grand Level
BGL-Below Grand Level

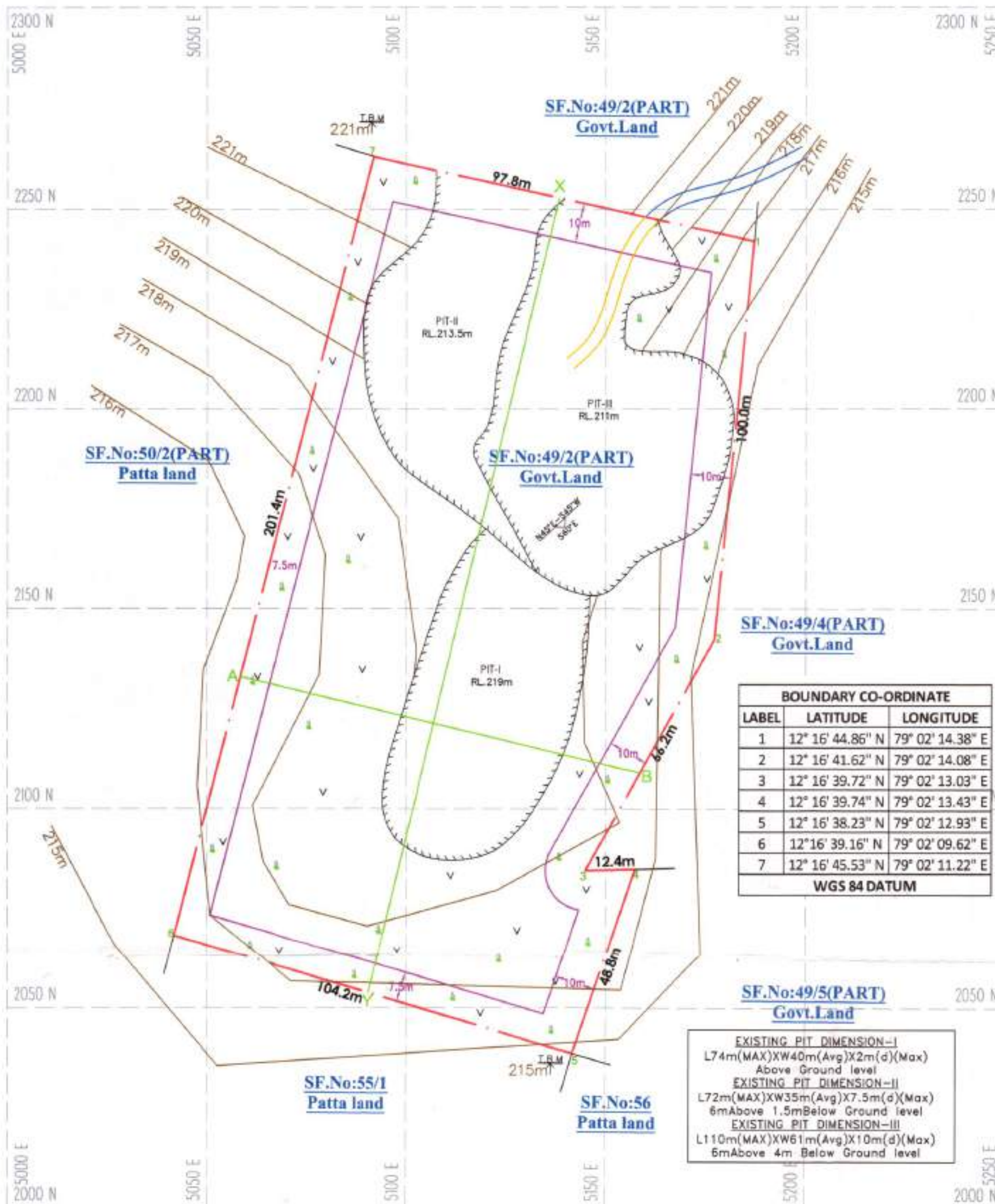
R.Kalpana

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APPROACH ROAD	
QUARRY ROAD	
CONTOUR	
SCRUB	
TOPSOIL	
ROUGH STONE	
STRIKE & DIP	
QUARRY PIT	

TOPOGRAPHY, GEOLOGICAL PLAN
& SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:
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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	12° 16' 44.86" N	79° 02' 14.38" E
2	12° 16' 41.62" N	79° 02' 14.08" E
3	12° 16' 39.72" N	79° 02' 13.03" E
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6	12° 16' 39.16" N	79° 02' 09.62" E
7	12° 16' 45.53" N	79° 02' 11.22" E
WGS 84 DATUM		

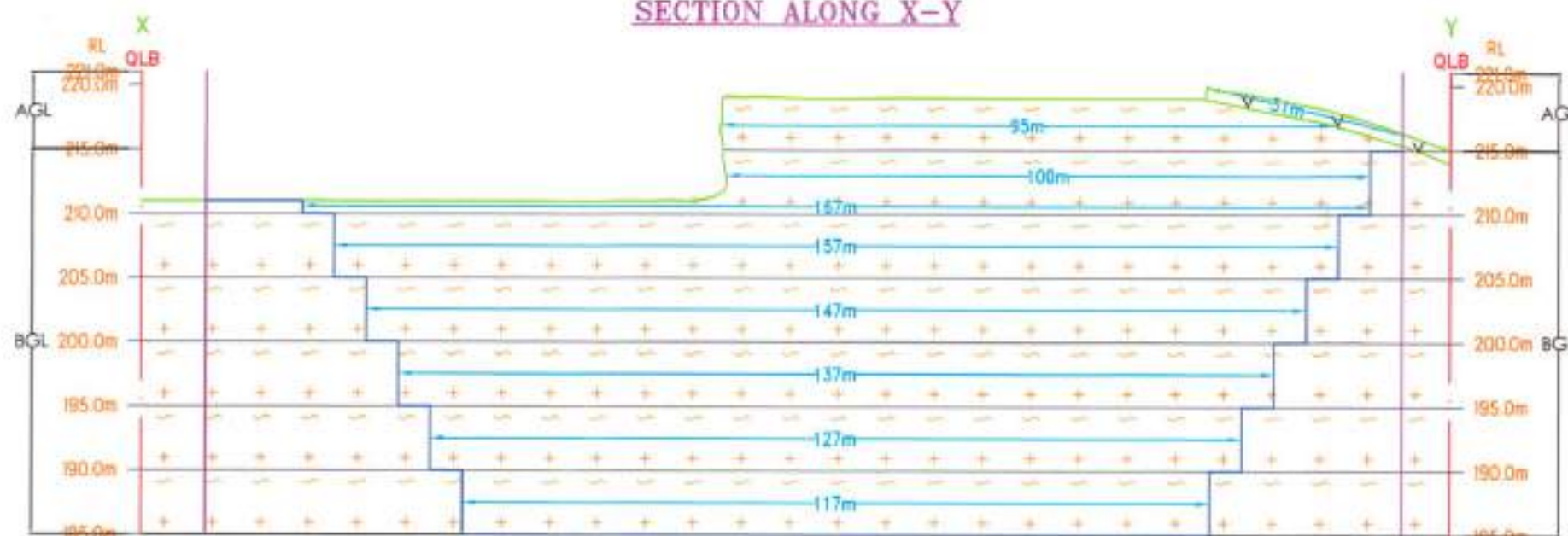
EXISTING PIT DIMENSION-I
L74m(MAX)XW40m(Avg)X2m(d)(Max)
Above Ground level
EXISTING PIT DIMENSION-II
L72m(MAX)XW35m(Avg)X7.5m(d)(Max)
6mAbove 1.5mBelow Ground level
EXISTING PIT DIMENSION-III
L110m(MAX)XW61m(Avg)X10m(d)(Max)
6mAbove 4m Below Ground level

PLATE NO-IV
DATE OF SURVEY :09.07.2025

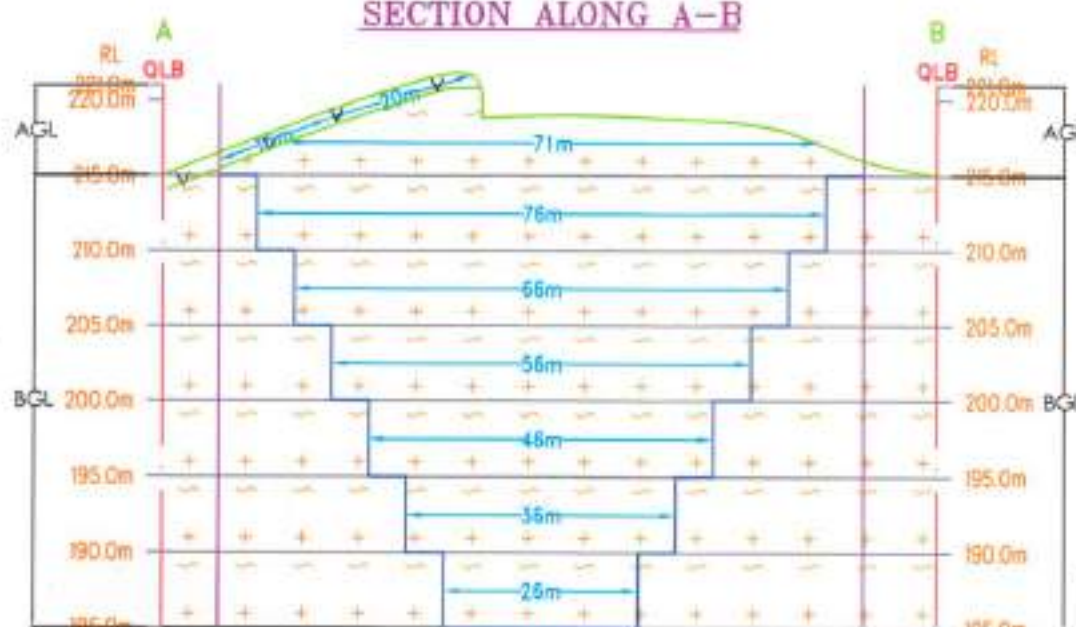
APPLICANT:
TMT.R.KALPANA,
W/O.MANIKANDAN,
No.79B, MAJANAI KOVIL STREET,
DEVIKAPURAM, CHETPET TALUK,
THIRUVANNAMALAI DISTRICT-606 902.

QUARRY LEASE APPLIED AREA:
S.F.NO :49/2(PART-2)
EXTENT : 2.00.0Ha,
VILLAGE:ADAIYUR,
TALUK : TIRUVANNAMALAI,
DISTRICT : TIRUVANNAMALAI,

SECTION ALONG X-Y



SECTION ALONG A-B



AGL-Above Grand Level
BGL-Below Grand Level

R. Kalpana

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Q.L.APPLIED BOUNDARY	
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TOPSOIL	
ROUGH STONE	
STRIKE & DIP	
QUARRY PIT	

MINEABLE PLAN & SECTIONS
SCALE 1 : 1000
SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:
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THE LEASE MAP AUTHENTICATED BY STATE
GOVERNMENT

C.NATARAJAN,M.Sc.,PHIL.,
QUALIFIED PERSON



- PROPOSED SITE SERVICES**
- A - OFFICE
 - B - STORE ROOM
 - C - FIRST AID ROOM
 - D - REST SHELTER
 - E - TOILET

Proposed area to be Planted

BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	12° 16' 44.86" N	79° 02' 14.38" E
2	12° 16' 41.62" N	79° 02' 14.08" E
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5	12° 16' 38.23" N	79° 02' 12.93" E
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7	12° 16' 45.53" N	79° 02' 11.22" E
WGS 84 DATUM		

R. Kalpana

PLATE NO-V
DATE OF SURVEY :09.07.2025

APPLICANT:
TMT.R.KALPANA,
W/O.MANIKANDAN,
No.79B,BAJANAI KOVIL STREET,
DEVIKAPURAM,CHETPET TALUK,
THIRUVANNAMALAI DISTRICT-606 902.

QUARRY LEASE APPLIED AREA:
S.F.NO :49/2(PART-2)
EXTENT : 2.00.0Ha,
VILLAGE :ADAIYUR,
TALUK : TIRUVANNAMALAI,
DISTRICT : TIRUVANNAMALAI.

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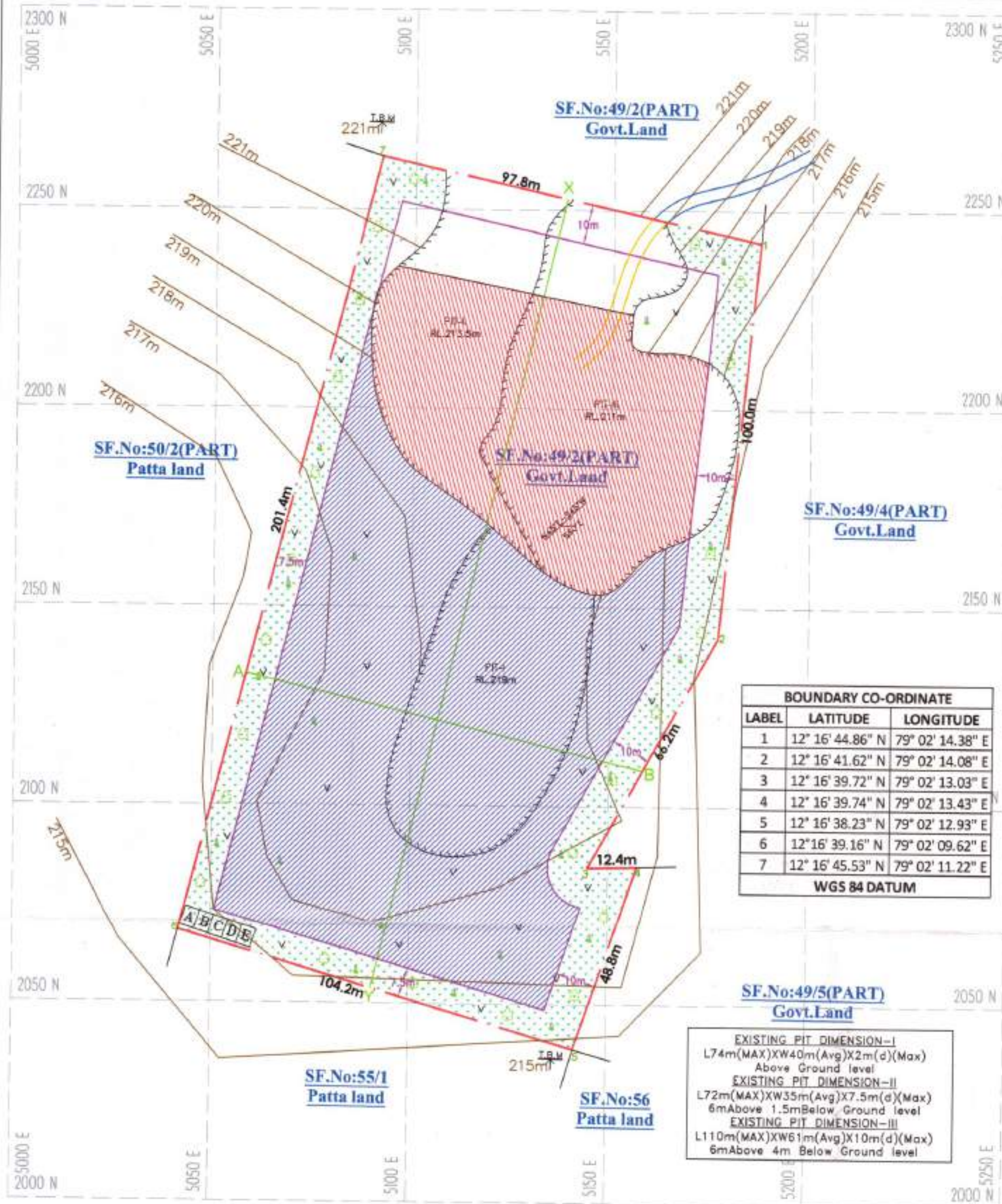
Q.L.APPLIED BOUNDARY	
7.5m&10m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
QUARRY ROAD	
CONTOUR	
SCRUB	
TOPSOIL	
ROUGH STONE	
STRIKE & DIP	
QUARRY PIT	

YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTION

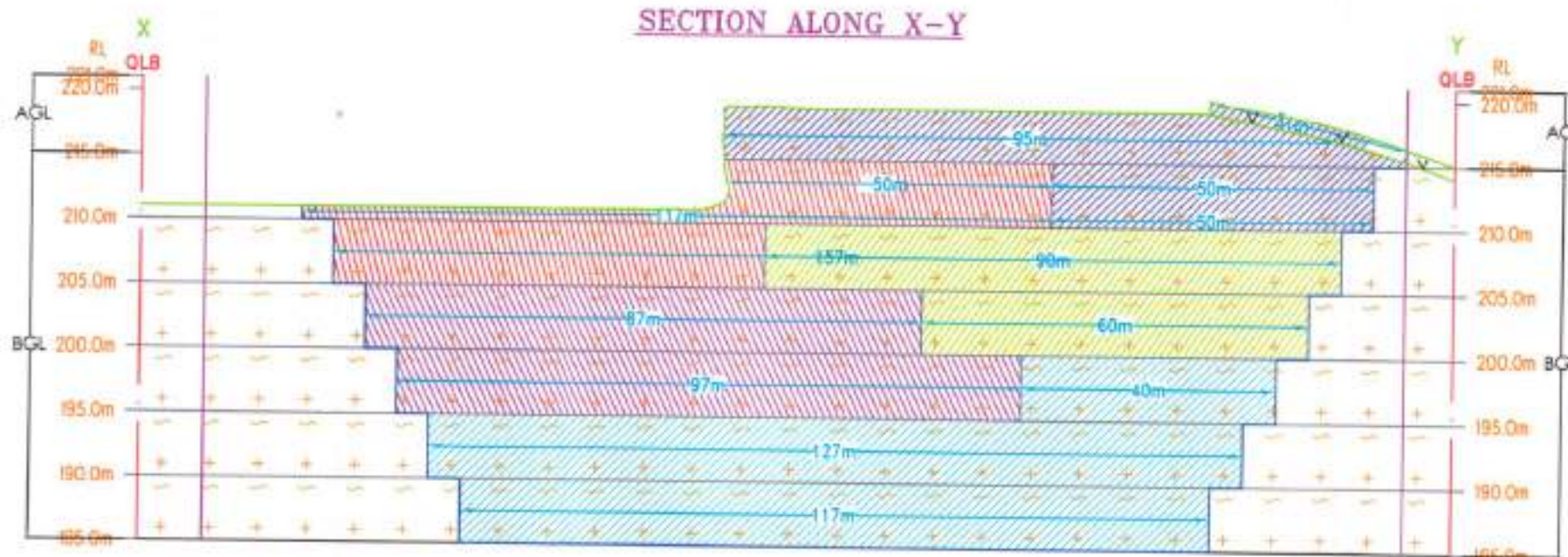
SCALE 1 : 1000
SECTION HOR 1 : 1000, VER 1: 500

PREPARED BY:
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GOVERNMENT

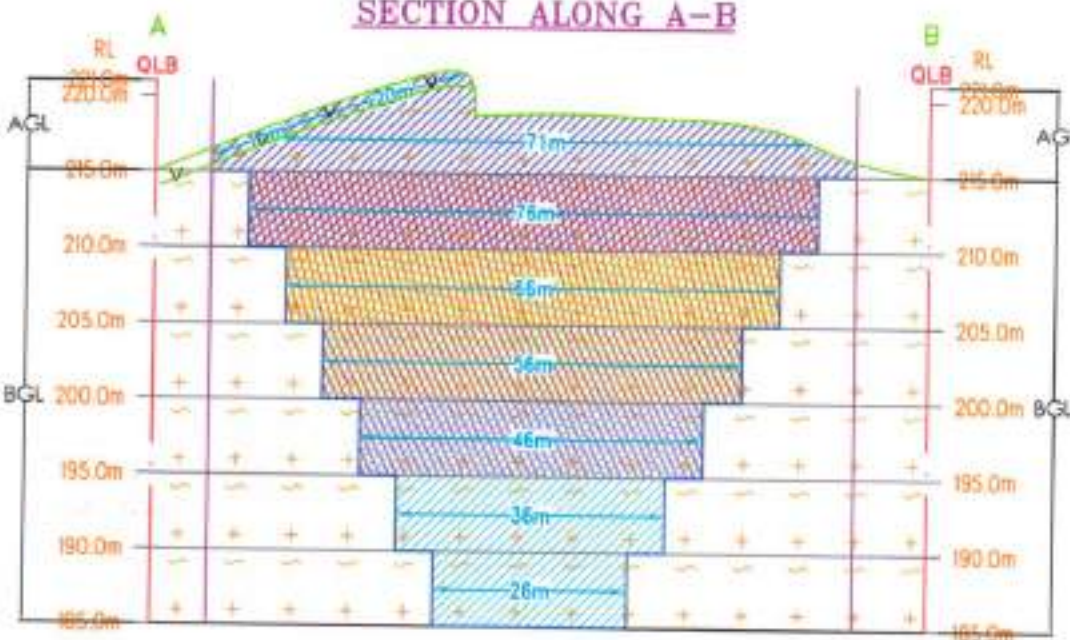
C.NATARAJAN,M.Sc.,M.Phil.,
QUALIFIED PERSON



SECTION ALONG X-Y



SECTION ALONG A-B

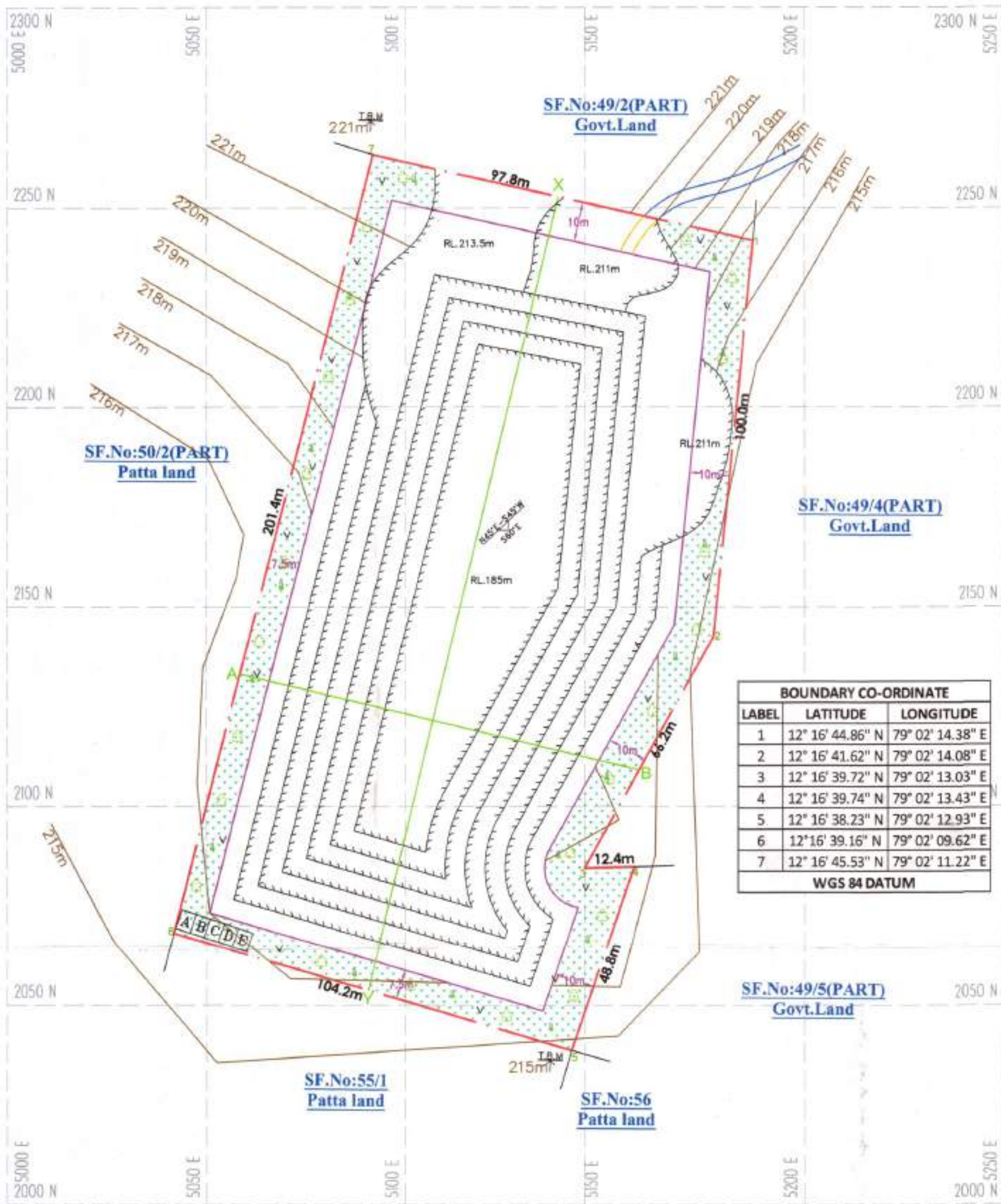


- 1st yr Proposed area to be Quarried
- 2nd yr Proposed area to be Quarried
- 3rd yr Proposed area to be Quarried
- 4th yr Proposed area to be Quarried
- 5th yr Proposed area to be Quarried

PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	0.85.0	1.69.0
INFRASTRUCTURE	Nil	0.01.0
ROADS	0.01.0	0.01.0
GREEN BELT	Nil	0.29.0
UN-UTILIZED AREA	1.14.0	Nil
GRAND TOTAL	2.00.0	2.00.0

AGL-Above Grand Level
BGL-Below Grand Level



PROPOSED SITE SERVICES

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

Proposed area to be Planted

BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	12° 16' 44.86" N	79° 02' 14.38" E
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5	12° 16' 38.23" N	79° 02' 12.93" E
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7	12° 16' 45.53" N	79° 02' 11.22" E
WGS 84 DATUM		

PLATE NO-VI

DATE OF SURVEY :09.07.2025

APPLICANT:

TMT.R.KALPANA,
W/O.MANIKANDAN,
No.798,BAJANAI KOVIL STREET,
DEVIKAPURAM,CHETPET TALUK,
THIRUVANNAMALAI DISTRICT-606 902.

QUARRY LEASE APPLIED AREA:

S.F.NO :49/2(PART-2)
EXTENT : 2.00.0Ha.
VILLAGE :ADAIYUR,
TALUK : TIRUVANNAMALAI,
DISTRICT : TIRUVANNAMALAI.

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Q.L.APPLIED BOUNDARY	
7.5m&10m SAFETY DISTANCE	
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QUARRY ROAD	
CONTOUR	
SCRUB	
TOPSOIL	
ROUGH STONE	
STRIKE & DIP	
PROPOSED QUARRY PIT	

CONCEPTUAL PLAN & SECTION

SCALE 1 : 1000

SECTION HOR 1 : 1000, VER 1: 500

PREPARED BY:

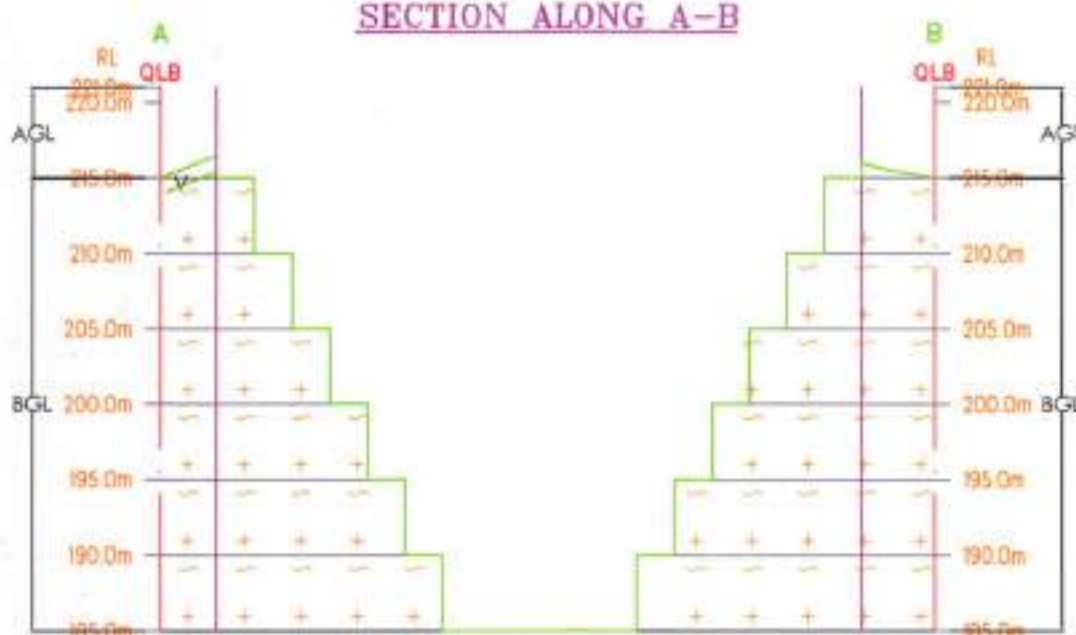
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THE LEASE MAP AUTHENTICATED BY STATE
GOVERNMENT

C.NATARAJAN,M.Sc,M.Phil.,
QUALIFIED PERSON

SECTION ALONG X-Y



SECTION ALONG A-B



ULTIMATE PIT DIMENSION OF END OF
THE QUARRY LEASE PERIOD
L196m(MAX)XW86m(Avg)X36m(d)(Max)
6m Above 30m Below Ground level

AGL-Above Grand Level
BGL-Below Grand Level



ANNEXURE-4

From
Dr.S.Vediappan, M.Sc., Ph.D.,
Deputy Director,
Geology and Mining,
Tiruvannamalai - 4.

To
Tmt.R.Kalpana,
W/o.Manikandan,
No.798. Bajanai Koil Street,
Devikapuram, Chetper,
Tiruvannamalai 606 902.

R.c.No.16/Mines/2025 dated 10.06.2025.

Sir,

Sub: Mines and Minerals - Minor Mineral - Rough stone - Tiruvannamalai District and Taluk - Adaiyur Village - Govt. Poramboke Land in SF.No.49/2 (part-2) over an extent of 2.00.0 Hectare - Application preferred by Tmt.Kalpana - successful Bidder - Precise area communicated - Submission of three copies of draft Mining Plan for approval - Approval accorded - regarding

Ref: 1. E-Auction date 08.01.2025.
2. This Office Letter even No. dated 13.01.2025.
3. Precise Area Communication Notice Rc.No.16/Mines/2025, dated 11.03.2025.
4. Mining Plan submitted by Tmt.Kalpana dated 06.06.2025

Tmt.Kalpana, has preferred an application for the grant of Rough Stone quarry lease over an extent of 2.00.0 Hectare of Government Poramboke land in SF.No.49/2 (Part-2) of Adaiyur Village, Tiruvannamalai Taluk and District for a period of 5 years vide in the reference 1st cited and the precise area has been communicated to the applicant vide the reference 3rd cited with a direction to submit the approved mining plan and Environmental Clearance.

2. As directed, the applicant has submitted three copies of draft mining plan for approval vide in the reference 4th cited. The Mining Plan has been verified in detail and found that it has been prepared in accordance with the guidelines / instructions issued by the Commissioner of Geology and Mining in letter RC. No. 3868 / LC / 2012 dated 19.11.2012.

R. Kalpana

i) The reserves estimated in the mining plan is

Depth in Mts.	Geological Resources in Rough Stone		Mineable Reserves in Rough Stone	
	Cbm	Tons	Cbm	Tons
36m (6m AGL and 30m BGL)	619436	1703449.00	232622	639710.50

ii) Year wise production proposed for the five year period are as follows:-

Year	Mineral	Quantity	
		CBM	Tons
I	Rough Stone	45980	126445.00
II		46202	127055.50
III		46500	127875.00
IV		46670	128342.50
V		47270	129992.50
Total		232622	639710.50

3. Therefore in exercise of the powers conferred under Rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959, the mining plan is hereby approved, subject to the following conditions:

- The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- This approval of the mining plan does not in any way convey the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- The validity of the mining plan is co-terminus with the lease period.
- Quarrying shall be done in accordance with the approved Mining Plan.

R. Kalpana

- vi. If anything is found to be concealed in the contents of the mining plan which are required by the mines act or if any proposed for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- vii. All the conditions stipulated in the precise area communication dated 11.03.2025 should be duly complied with.

4. Further, other quarries situated within 500m radial distance are as follows.

i) Existing Quarries

Sl. No. Name of the Owner	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
M.Ayyakannu, S/o.Manickam, No.481/1, Pillaiyar Kovil street, Nandimangalam village, Padiagraharam Post, Tiruvannamalai District.	Adaiyur 49/2 (Part-1)	4.30.0	16.08.2023 to 15.08.2028	Existing Quarries

i) Abandoned quarries

Sl. No. Name of the Owner	Village & S.F. Nos.	Extent In Hect.	Lease Period	Remarks
N. Harijayashree, W/o.K.Narreshkumar, No.18/7, Vadamathadhi Street, Tiruvannamalai	49/2 (Part-1)	4.30.0	09.11.2006 to 08.11.2011	Expired Quarry
M.Vijai Ganesh 16-A, Valayalkara St., Tiruvannamalai	49/2 (Part-1)	4.30.0	25.04.2012 to 24.04.2017	
M. Vijay Ganesh, S/o.A. Mani, No.16-A, Valayalkara Street, Tiruvannamalai.	49/2 (Part-1)	4.30.0	09.11.2006 to 08.11.2011	
R.Arasappan 47, V.O.C.Nagar, Tiruvannamalai	49/2 (Part -2)	4.30.0	13.06.2012 to 12.06.2017	

R. Kalpana

ii) Present Proposed Quarries

Name of the Owner	Village & S.F. Nos.	Extent in Hect.
Tmt.R.Kalpana, W/o.Manikandan. No.798. Bajanai Koil Street, Devikapuram, Chetper, Tiruvannamalai 606 902	49/2 (Part-2)	2.00.0

Encl: 2 Copies of Approved Mining Plan.

[Signature]
10.06.24
Deputy Director
Geology and Mining,
Tiruvannamalai.

Copy submitted to:

1. The Chairman, SEIAA,
Tamil Nadu, 3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet, Chennai-15.
2. The Commissioner of Geology and Mining, Chennai-32.
3. The District Collector, Tiruvannamalai.

[Signature]
10.06.24

R. Kalpana



ANNEXURE-5

கிராம நிர்வாக அலுவலர் சான்று

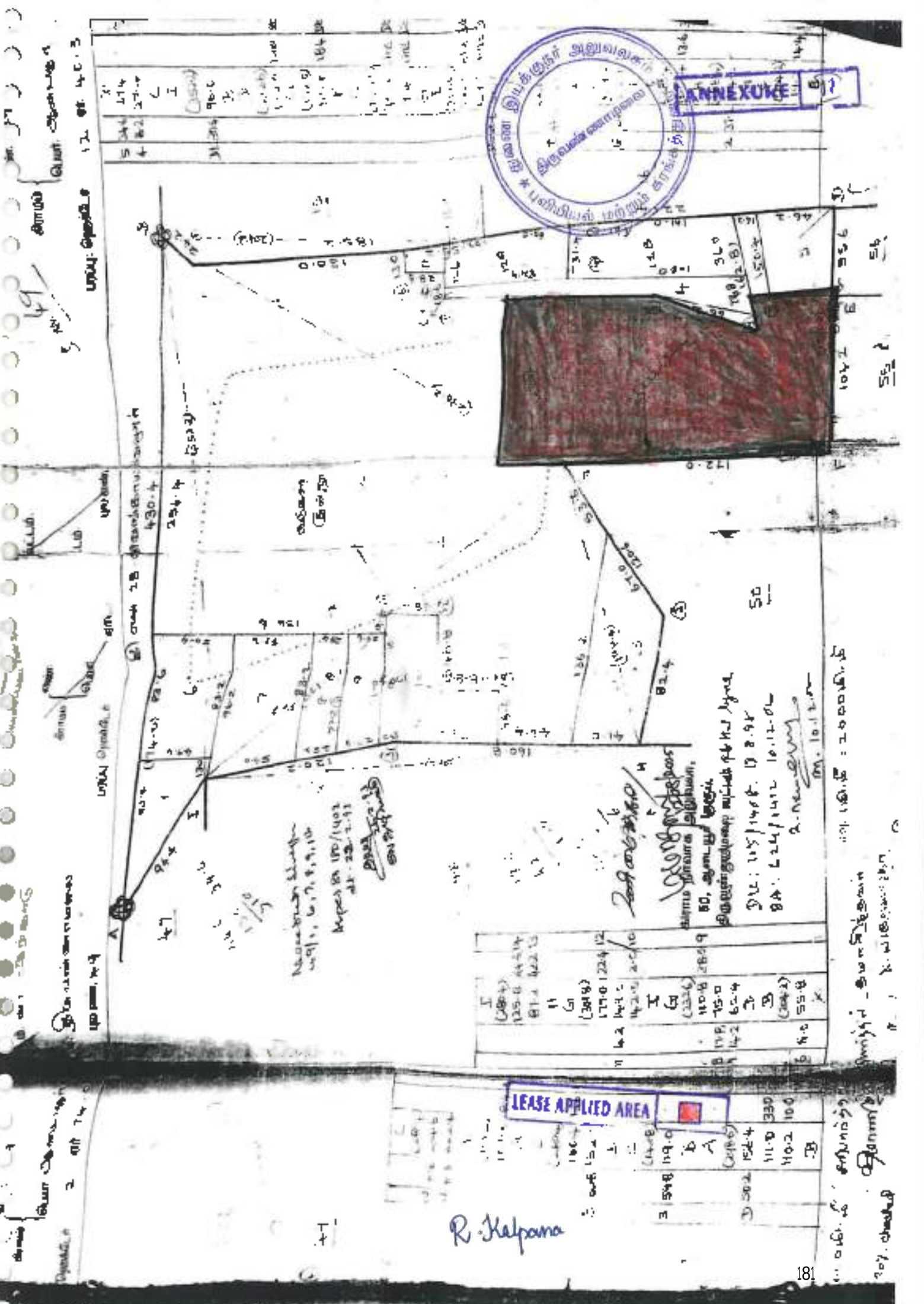
திருவண்ணாமலை மாவட்டம், திருவண்ணாமலை வட்டம், ஆடையூர் கிராமத்தில் உள்ள சர்வே எண்: 49/2 பரப்பு 8.00.0 ஹெக்டரில் அரசு கல்லாங்குத்து புறம்போக்கு நிலம் உள்ளது. அதில் 49/2-ல் பகுதி -II 2.00.0 ஹெக்டர் பரப்பளவில் சாதாரண கல் குவாரி செய்வதற்காக R. கல்பணா க/பெ மணிகண்டன் 798, பஜனை கோயில் தெரு, தேவிகாபுரம் கிராமம், சேதப்பட்டு அஞ்சல், திருவண்ணாமலை மாவட்டம் என்ற விலாசத்தில் இருக்கும் நபரால் ஏலம் எடுக்கப்பட்டுள்ள இடத்தை சுற்றி சுமார் 500 மீட்டர் சுற்றளவு பரப்பில் எந்தவித குடியிருப்பு பகுதிகளோ அங்கீகரிக்கப்பட்ட வீட்டுமனை பிரிவுகளோ புராதன சின்னங்களோ விலை உயர்ந்த மரங்களோ உயர் மின்னழுத்த கம்பிகளோ ஏதும் இல்லை என்பதை தெரிவித்துக் கொள்ளப்படுகிறது.

கிராம நிர்வாக அலுவலர்,
50, ஆடையூர்,
திருவண்ணாமலை வட்டம்

R. Kalpana



ANNEXURE-6



ANNEXURE B

LEASE APPLIED AREA

R. Kalpana

மே. 10.12.2008

சுயம்சேகரி

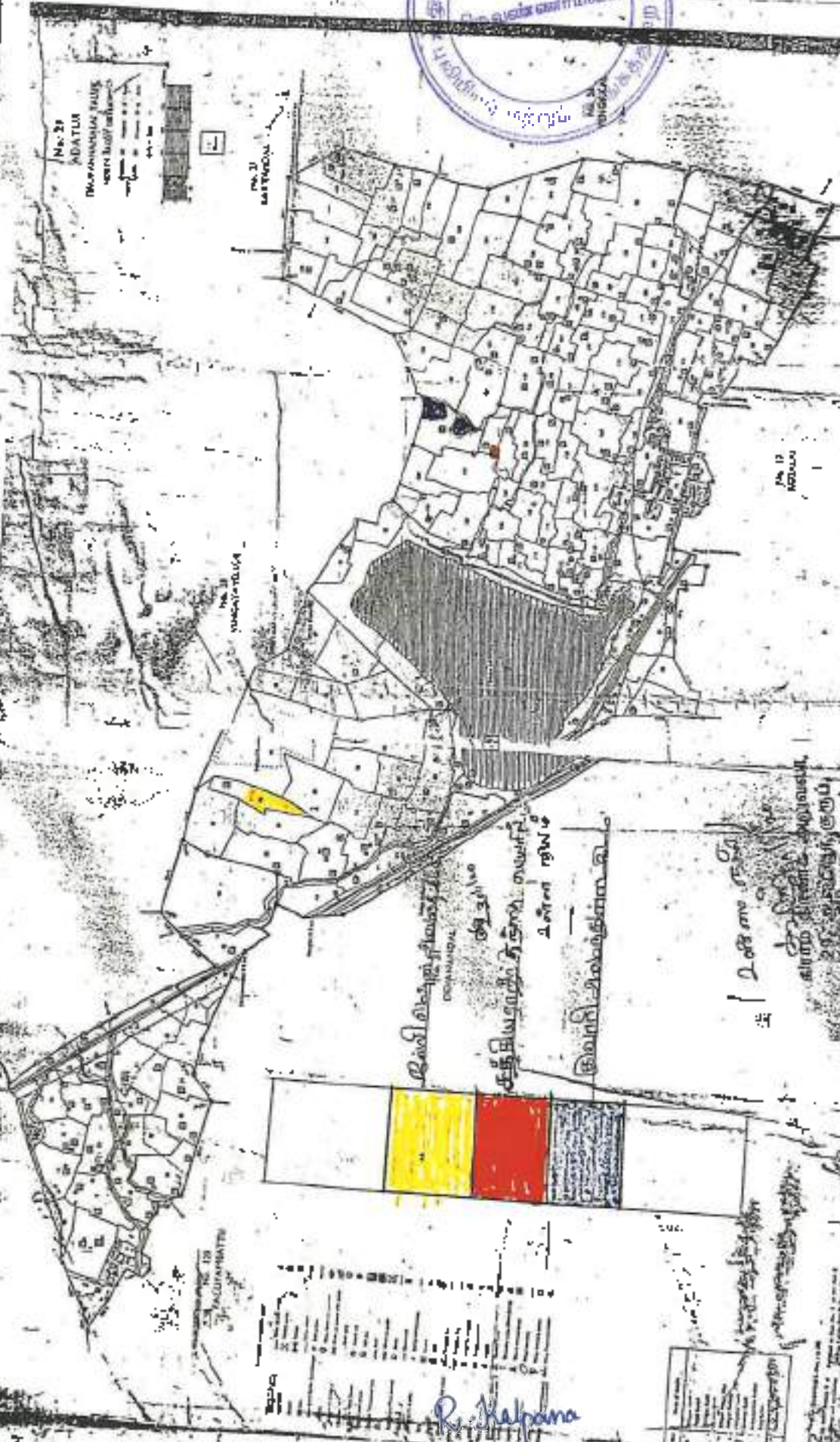
சுயம்சேகரி

சுயம்சேகரி

APARAYUR Village map



ANNEXURE II



R. Kalpana

1	2	3	4	5	6	7	8	9	10
47-1	24-1	0	4	7.4	7	3.75	0	39.0	2 72
-2	-2	0	4	7.4	7	3.75	2	00.0	5 50
3	-3	0	4	7.4	7	3.75	0	33.0	34
-4	-4	0	4	7.4	7	3.75	0	50.0	1 08
48-1	-5	0	4	7.4	7	2.75	0	32.0	3 53
-2	26	0	4	8.4	8	2.00	1	53.0	3 65
48-1	25-2A	0	4	7.4	7	2.75	3	10.5	5 79
-2	-2A	0	4	7.4	7	2.75	0	46.0	1 32
-3	-2A	0	4	7.4	7	2.75	0	39.0	3 45
-4	-2A	0	4	7.4	7	2.75	0	24.0	0 66
-5	-2A	0	4	7.4	7	2.75	12	40.5	10 22
50-1	-1A1	0	4	8.4	8	2.00	1	45.0	2 93
-2	-1A2	0	4	8.4	8	2.00	1	56.0	3 12
-3	-1A3	0	4	8.4	8	2.00	0	60.0	1 20
-4	-1A4	0	4	8.4	8	2.00	0	45.5	0 91
-5	-2C	0	4	8.4	8	2.00	4	07.5	8 15
51-1	27	0	4	8.4	8	2.00	5	18.0	6 36
-2	28 1A15	0	4	8.4	8	2.00	0	42.0	0 84
-3	-1A15	0	4	8.4	8	2.00	3	69.5	7 20
52-1	10-1	0	4	7.4	7	2.75	1	98.0	5 45
-2	-1	0	4	7.4	7	2.75	0	30.0	0 40
-3	-1	0	4	7.4	7	2.75	0	45.0	0 55



தமிழ்நாடு அகாடமி
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தமிழ்நாடு அகாடமி
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சென்னை
தமிழ்நாடு அகாடமி
சென்னை

307 ச. ராஜா (1)
வ. ராமலிங்கம் (2)
273 வ. ராமலிங்கம்

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R. Kalpana



ANNEXURE-7



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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/25/4709	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4709	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	07.10.2025	Test Completed on	20.10.2025
Temperature	35°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	µg/m ³	55.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL(DL-1.1)	-

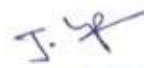
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

For any Technical Issues & Complaints: technical@shrientanalytical.com

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TEST REPORT

Report No.	SARL/25/4710	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4710	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	07.10.2025	Test Completed on	20.10.2025
Temperature	35°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	µg/m ³	45.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4711	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4711	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	08.10.2025	Test Completed on	20.10.2025
Temperature	35°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	µg/m ³	50.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd


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Authorized Signatory
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TEST REPORT

Report No.	SARL/25/4712	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4712	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	08.10.2025	Test Completed on	20.10.2025
Temperature	35°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	µg/m ³	43.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	17.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

S. Bal
Verified



J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4713	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4713	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	09.10.2025	Test Completed on	20.10.2025
Temperature	36°C	Relative Humidity	22%
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	41.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

S. Bal
Verified



END OF THE REPORT

J. Gnanaprakasam
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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/25/4714	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4714	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	09.10.2025	Test Completed on	20.10.2025
Temperature	36°C	Relative Humidity	22%
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	44.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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


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TEST REPORT

Report No.	SARL/25/4715	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4715	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	10.10.2025	Test Completed on	20.10.2025
Temperature	36°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	µg/m ³	43.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4716	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4716	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	10.10.2025	Test Completed on	20.10.2025
Temperature	36°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	µg/m ³	45.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4717	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4717	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	11.10.2025	Test Completed on	20.10.2025
Temperature	36°C	Relative Humidity	24%
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	55.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

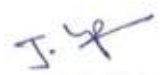
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4718	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4718	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	11.10.2025	Test Completed on	20.10.2025
Temperature	36°C	Relative Humidity	24%
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	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4719	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4719	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	12.10.2025	Test Completed on	20.10.2025
Temperature	35°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	µg/m ³	52.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Technical Manager

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TEST REPORT

Report No.	SARL/25/4720	Report Date.	20.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4720	Sample Received on	13.10.2025
Sample Collected by	LABORATORY	Test Commenced on	13.10.2025
Sample Collected on	12.10.2025	Test Completed on	20.10.2025
Temperature	35°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	µg/m ³	47.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/4733	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4733	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	14.10.2025	Test Completed on	27.10.2025
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	µg/m ³	60.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4734	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4734	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	14.10.2025	Test Completed on	27.10.2025
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	µg/m ³	54.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/25/4735	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4735	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	15.10.2025	Test Completed on	27.10.2025
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	µg/m ³	57.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4736	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4736	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	15.10.2025	Test Completed on	27.10.2025
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	µg/m ³	59.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4737	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4737	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	16.10.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	20%
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	42.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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


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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4738	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4738	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	16.10.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	20%
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	52.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

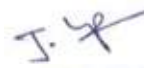
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4739	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4739	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	17.10.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	19%
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	41.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Technical Manager

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TEST REPORT

Report No.	SARL/25/4740	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4740	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	17.10.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	19%
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	50.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4741	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4741	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	18.10.2025	Test Completed on	27.10.2025
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	µg/m ³	61.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

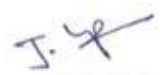
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/4742	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4742	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	18.10.2025	Test Completed on	27.10.2025
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	µg/m ³	41.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4743	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4743	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	19.10.2025	Test Completed on	27.10.2025
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	µg/m ³	64.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4744	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4744	Sample Received on	20.10.2025
Sample Collected by	LABORATORY	Test Commenced on	20.10.2025
Sample Collected on	19.10.2025	Test Completed on	27.10.2025
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	µg/m ³	48.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4757	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4757	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	21.10.2025	Test Completed on	03.11.2025
Temperature	35°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	µg/m ³	67.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL(DL-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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END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4758	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4758	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	21.10.2025	Test Completed on	03.11.2025
Temperature	35°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	µg/m ³	46.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4759	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4759	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	22.10.2025	Test Completed on	03.11.2025
Temperature	35°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	µg/m ³	61.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.8	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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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/25/4760	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4760	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	22.10.2025	Test Completed on	03.11.2025
Temperature	35°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	µg/m ³	38.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4761	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4761	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	23.10.2025	Test Completed on	03.11.2025
Temperature	36°C	Relative Humidity	22%
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	44.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4762	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4762	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	23.10.2025	Test Completed on	03.11.2025
Temperature	36°C	Relative Humidity	22%
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	57.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4763	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4763	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	24.10.2025	Test Completed on	03.11.2025
Temperature	36°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	µg/m ³	42.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4764	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4764	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	24.10.2025	Test Completed on	03.11.2025
Temperature	36°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	µg/m ³	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4765	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4765	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	25.10.2025	Test Completed on	03.11.2025
Temperature	36°C	Relative Humidity	24%
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	52.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4766	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4766	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	25.10.2025	Test Completed on	03.11.2025
Temperature	36°C	Relative Humidity	24%
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	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Phone Number +91 82208 36377 Email: - info@shrientanalytical.com
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TEST REPORT

Report No.	SARL/25/4767	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4767	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	26.10.2025	Test Completed on	03.11.2025
Temperature	35°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	µg/m ³	55.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4768	Report Date.	03.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4768	Sample Received on	27.10.2025
Sample Collected by	LABORATORY	Test Commenced on	27.10.2025
Sample Collected on	26.10.2025	Test Completed on	03.11.2025
Temperature	35°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	µg/m ³	54.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.4	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

For Shrient Analytical and Research Labs Pvt. Ltd


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TEST REPORT

Report No.	SARL/25/4781	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4781	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	28.10.2025	Test Completed on	10.11.2025
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	µg/m ³	46.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4782	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4782	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	28.10.2025	Test Completed on	10.11.2025
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	µg/m ³	48.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4783	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4783	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	29.10.2025	Test Completed on	10.11.2025
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	µg/m ³	48.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4784	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4784	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	29.10.2025	Test Completed on	10.11.2025
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	µg/m ³	50.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4785	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4785	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	30.10.2025	Test Completed on	10.11.2025
Temperature	37°C	Relative Humidity	20%
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	41.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4786	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4786	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	30.10.2025	Test Completed on	10.11.2025
Temperature	37°C	Relative Humidity	20%
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	45.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4787	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4787	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	31.10.2025	Test Completed on	10.11.2025
Temperature	37°C	Relative Humidity	19%
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	42.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4788	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4788	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	31.10.2025	Test Completed on	10.11.2025
Temperature	37°C	Relative Humidity	19%
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	49.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4789	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4789	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	01.11.2025	Test Completed on	10.11.2025
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	µg/m ³	49.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/25/4790	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4790	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	01.11.2025	Test Completed on	10.11.2025
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	µg/m ³	44.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4791	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4791	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	02.11.2025	Test Completed on	10.11.2025
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	µg/m ³	55.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4792	Report Date.	10.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4792	Sample Received on	03.11.2025
Sample Collected by	LABORATORY	Test Commenced on	03.11.2025
Sample Collected on	02.11.2025	Test Completed on	10.11.2025
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	µg/m ³	39.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4804	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4804	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	04.11.2025	Test Completed on	17.11.2025
Temperature	35°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	µg/m ³	53.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	10.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL(DL-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/25/4805	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4805	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	04.11.2025	Test Completed on	17.11.2025
Temperature	35°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	µg/m ³	47.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4806	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4806	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	05.11.2025	Test Completed on	17.11.2025
Temperature	35°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	µg/m ³	58.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.4	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/25/4807	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4807	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	05.11.2025	Test Completed on	17.11.2025
Temperature	35°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	µg/m ³	41.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	18.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

S. Bal
Verified



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Technical Manager

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TEST REPORT

Report No.	SARL/25/4808	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4808	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	06.11.2025	Test Completed on	17.11.2025
Temperature	36°C	Relative Humidity	22%
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	44.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4809	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4809	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	06.11.2025	Test Completed on	17.11.2025
Temperature	36°C	Relative Humidity	22%
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	44.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4810	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4810	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	07.11.2025	Test Completed on	17.11.2025
Temperature	36°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	µg/m ³	41.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4811	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4811	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	07.11.2025	Test Completed on	17.11.2025
Temperature	36°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	µg/m ³	50.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. 4
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TEST REPORT

Report No.	SARL/25/4812	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4812	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	08.11.2025	Test Completed on	17.11.2025
Temperature	36°C	Relative Humidity	24%
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	50.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

S. Bal
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TEST REPORT

Report No.	SARL/25/4813	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4813	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	08.11.2025	Test Completed on	17.11.2025
Temperature	36°C	Relative Humidity	24%
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	55.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4814	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4814	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	09.11.2025	Test Completed on	17.11.2025
Temperature	35°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	µg/m ³	47.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/25/4815	Report Date.	17.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4815	Sample Received on	10.11.2025
Sample Collected by	LABORATORY	Test Commenced on	10.11.2025
Sample Collected on	09.11.2025	Test Completed on	17.11.2025
Temperature	35°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	µg/m ³	51.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

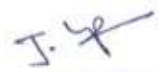
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/25/4827	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4827	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	11.11.2025	Test Completed on	24.11.2025
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	µg/m ³	48.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

S. Bal
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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4828

Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4828	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	11.11.2025	Test Completed on	24.11.2025
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	µg/m ³	53.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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END OF THE REPORT

J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4829	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4829	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	12.11.2025	Test Completed on	24.11.2025
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	µg/m ³	48.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4830	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4830	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	12.11.2025	Test Completed on	24.11.2025
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	µg/m ³	51.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. Gnanaprakasam
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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/25/4831	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4831	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	13.11.2025	Test Completed on	24.11.2025
Temperature	37°C	Relative Humidity	20%
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	43.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4832	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4832	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	13.11.2025	Test Completed on	24.11.2025
Temperature	37°C	Relative Humidity	20%
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	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

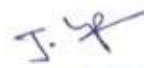
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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/25/4833	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4833	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	14.11.2025	Test Completed on	24.11.2025
Temperature	37°C	Relative Humidity	19%
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	46.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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/25/4834	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4834	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	14.11.2025	Test Completed on	24.11.2025
Temperature	37°C	Relative Humidity	19%
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	50.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4835	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4835	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	15.11.2025	Test Completed on	24.11.2025
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	µg/m ³	68.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	32.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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END OF THE REPORT

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TEST REPORT

Report No.	SARL/25/4836	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4836	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	15.11.2025	Test Completed on	24.11.2025
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	µg/m ³	46.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4837	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4837	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	16.11.2025	Test Completed on	24.11.2025
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	µg/m ³	65.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4838	Report Date.	24.11.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4838	Sample Received on	17.11.2025
Sample Collected by	LABORATORY	Test Commenced on	17.11.2025
Sample Collected on	16.11.2025	Test Completed on	24.11.2025
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	µg/m ³	49.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4850	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4850	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	18.11.2025	Test Completed on	01.12.2025
Temperature	35°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	µg/m ³	56.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL(DL-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/25/4851	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4851	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	18.11.2025	Test Completed on	01.12.2025
Temperature	35°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	µg/m ³	41.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4852	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4852	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	19.11.2025	Test Completed on	01.12.2025
Temperature	35°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	µg/m ³	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4853	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4853	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	19.11.2025	Test Completed on	01.12.2025
Temperature	35°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	µg/m ³	48.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4854	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4854	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	20.11.2025	Test Completed on	01.12.2025
Temperature	36°C	Relative Humidity	22%
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	48.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

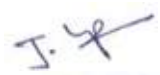
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/4855	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4855	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	20.11.2025	Test Completed on	01.12.2025
Temperature	36°C	Relative Humidity	22%
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	48.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4856	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4856	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	21.11.2025	Test Completed on	01.12.2025
Temperature	36°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	µg/m ³	46.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4857	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4857	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	21.11.2025	Test Completed on	01.12.2025
Temperature	36°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	µg/m ³	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4858	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4858	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	22.11.2025	Test Completed on	01.12.2025
Temperature	36°C	Relative Humidity	24%
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	46.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

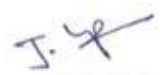
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4859	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4859	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	22.11.2025	Test Completed on	01.12.2025
Temperature	36°C	Relative Humidity	24%
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	48.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/25/4860	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4860	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	23.11.2025	Test Completed on	01.12.2025
Temperature	35°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	µg/m ³	47.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4861	Report Date.	01.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4861	Sample Received on	24.11.2025
Sample Collected by	LABORATORY	Test Commenced on	24.11.2025
Sample Collected on	23.11.2025	Test Completed on	01.12.2025
Temperature	35°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	µg/m ³	55.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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CIN : U74999TN2017PTC116807 / **GST No :** 33AAYCS7325R1ZA / **PAN No:** AAYCS7325R

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TEST REPORT

Report No.	SARL/25/4874	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4874	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	25.11.2025	Test Completed on	08.12.2025
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	µg/m ³	57.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Technical Manager

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TEST REPORT

Report No.	SARL/25/4875	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4875	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	25.11.2025	Test Completed on	08.12.2025
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	µg/m ³	51.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/25/4876	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4876	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	26.11.2025	Test Completed on	08.12.2025
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	µg/m ³	51.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4877	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4877	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	26.11.2025	Test Completed on	08.12.2025
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	µg/m ³	48.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4878	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4878	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	27.11.2025	Test Completed on	08.12.2025
Temperature	37°C	Relative Humidity	20%
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	23.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

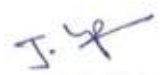
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/4879	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4879	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	27.11.2025	Test Completed on	08.12.2025
Temperature	37°C	Relative Humidity	20%
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	51.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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/25/4880	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4880	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	28.11.2025	Test Completed on	08.12.2025
Temperature	37°C	Relative Humidity	19%
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	44.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4881	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4881	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	28.11.2025	Test Completed on	08.12.2025
Temperature	37°C	Relative Humidity	19%
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	48.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4882	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4882	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	29.11.2025	Test Completed on	08.12.2025
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	µg/m ³	64.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.8	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/25/4883	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4883	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	29.11.2025	Test Completed on	08.12.2025
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	µg/m ³	42.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	19.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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TEST REPORT

Report No.	SARL/25/4884	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4884	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	30.11.2025	Test Completed on	08.12.2025
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	µg/m ³	66.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.3	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/25/4885	Report Date.	08.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4885	Sample Received on	01.12.2025
Sample Collected by	LABORATORY	Test Commenced on	01.12.2025
Sample Collected on	30.11.2025	Test Completed on	08.12.2025
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	µg/m ³	48.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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Technical Manager

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TEST REPORT

Report No.	SARL/25/4898	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4898	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	02.12.2025	Test Completed on	15.12.2025
Temperature	35°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	µg/m ³	57.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL(DL-1.1)	-

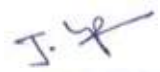
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4899	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4899	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	02.12.2025	Test Completed on	15.12.2025
Temperature	35°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	µg/m ³	47.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/25/4900	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4900	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	03.12.2025	Test Completed on	15.12.2025
Temperature	35°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	µg/m ³	54.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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END OF THE REPORT

J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4901	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4901	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	03.12.2025	Test Completed on	15.12.2025
Temperature	35°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	µg/m ³	49.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4902	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4902	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	04.12.2025	Test Completed on	15.12.2025
Temperature	36°C	Relative Humidity	22%
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	46.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

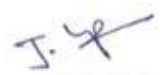
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL – Detectable limit

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/25/4903	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4903	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	04.12.2025	Test Completed on	15.12.2025
Temperature	36°C	Relative Humidity	22%
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	44.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4904	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4904	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	05.12.2025	Test Completed on	15.12.2025
Temperature	36°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	µg/m ³	48.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4905	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4905	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	05.12.2025	Test Completed on	15.12.2025
Temperature	36°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	µg/m ³	49.1	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. 4
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TEST REPORT

Report No.	SARL/25/4906	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4906	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	06.12.2025	Test Completed on	15.12.2025
Temperature	36°C	Relative Humidity	24%
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	53.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

S. Bal
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J. Gnanaprakasam
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TEST REPORT

Report No.	SARL/25/4907	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4907	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	06.12.2025	Test Completed on	15.12.2025
Temperature	36°C	Relative Humidity	24%
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	50.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4908	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4908	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	07.12.2025	Test Completed on	15.12.2025
Temperature	35°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	µg/m ³	52.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.0	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/25/4909	Report Date.	15.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4909	Sample Received on	08.12.2025
Sample Collected by	LABORATORY	Test Commenced on	08.12.2025
Sample Collected on	07.12.2025	Test Completed on	15.12.2025
Temperature	35°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	µg/m ³	48.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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/25/4922	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4922	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	09.12.2025	Test Completed on	22.12.2025
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	µg/m ³	57.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4923	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4923	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	09.12.2025	Test Completed on	22.12.2025
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	µg/m ³	52.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.9	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4924	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4924	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	10.12.2025	Test Completed on	22.12.2025
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	µg/m ³	54.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.1	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4925	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4925	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	10.12.2025	Test Completed on	22.12.2025
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	µg/m ³	50.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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Technical Manager

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TEST REPORT

Report No.	SARL/25/4926	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4926	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	11.12.2025	Test Completed on	22.12.2025
Temperature	37°C	Relative Humidity	20%
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	51.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.4	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

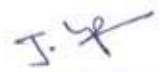
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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/25/4927	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4927	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	11.12.2025	Test Completed on	22.12.2025
Temperature	37°C	Relative Humidity	20%
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	44.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4928	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4928	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	12.12.2025	Test Completed on	22.12.2025
Temperature	37°C	Relative Humidity	19%
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	50.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4929	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4929	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	12.12.2025	Test Completed on	22.12.2025
Temperature	37°C	Relative Humidity	19%
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	50.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4930	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4930	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	13.12.2025	Test Completed on	22.12.2025
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	µg/m ³	63.5	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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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TEST REPORT

Report No.	SARL/25/4931	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4931	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	13.12.2025	Test Completed on	22.12.2025
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	µg/m ³	46.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. Gnanaprakasam
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/25/4932	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4932	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	14.12.2025	Test Completed on	22.12.2025
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	µg/m ³	59.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4933	Report Date.	22.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4933	Sample Received on	15.12.2025
Sample Collected by	LABORATORY	Test Commenced on	15.12.2025
Sample Collected on	14.12.2025	Test Completed on	22.12.2025
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	µg/m ³	48.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.2	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4946	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4946	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	16.12.2025	Test Completed on	29.12.2025
Temperature	35°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	µg/m ³	62.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	28.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	11.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m ³	BDL(DL-1.1)	-

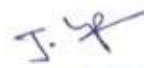
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/25/4947	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4947	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	16.12.2025	Test Completed on	29.12.2025
Temperature	35°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	µg/m ³	47.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4948	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4948	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	17.12.2025	Test Completed on	29.12.2025
Temperature	35°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	µg/m ³	65.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	8.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.7	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/25/4949	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4949	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	17.12.2025	Test Completed on	29.12.2025
Temperature	35°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	µg/m ³	42.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	17.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	3.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4950	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4950	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	18.12.2025	Test Completed on	29.12.2025
Temperature	36°C	Relative Humidity	22%
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	48.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4951	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4951	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	18.12.2025	Test Completed on	29.12.2025
Temperature	36°C	Relative Humidity	22%
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	43.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.5	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

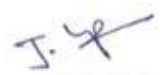
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/25/4952	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4952	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	19.12.2025	Test Completed on	29.12.2025
Temperature	36°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	µg/m ³	46.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.6	
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	3.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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/25/4953	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4953	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	19.12.2025	Test Completed on	29.12.2025
Temperature	36°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	µg/m ³	48.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	23.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4954	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4954	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	20.12.2025	Test Completed on	29.12.2025
Temperature	36°C	Relative Humidity	24%
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	57.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4955	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4955	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	20.12.2025	Test Completed on	29.12.2025
Temperature	36°C	Relative Humidity	24%
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	55.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	26.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.8	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4956	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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-4956	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	21.12.2025	Test Completed on	29.12.2025
Temperature	35°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	µg/m ³	52.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	25.8	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.3	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/25/4957	Report Date.	29.12.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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-4957	Sample Received on	22.12.2025
Sample Collected by	LABORATORY	Test Commenced on	22.12.2025
Sample Collected on	21.12.2025	Test Completed on	29.12.2025
Temperature	35°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	µg/m ³	61.2	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	33.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.7	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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)	-

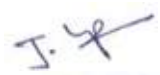
Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/26/0001	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	23.12.2025	Test Completed on	03.01.2026
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	µg/m ³	55.9	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	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/26/0002

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	23.12.2025	Test Completed on	03.01.2026
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	µg/m ³	57.3	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	29.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/26/0003	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-vengikkal 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	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	24.12.2025	Test Completed on	27.10.2025
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	µg/m ³	50.8	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/26/0004	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-Vediappanur 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	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	24.12.2025	Test Completed on	27.10.2025
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	µg/m ³	53.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	27.7	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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J. 4
Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/26/0005	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	25.12.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	20%
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	43.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	6.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/26/0006	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4975	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	25.12.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	20%
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	46.4	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	20.4	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	5.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/26/0007	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-Pichchandal 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-4976	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	26.12.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	19%
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	48.6	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.2	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/26/0008	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-Adaiyur 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-4977	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	26.12.2025	Test Completed on	27.10.2025
Temperature	37°C	Relative Humidity	19%
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	46.7	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	24.0	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.6	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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/26/0009	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4978	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	27.12.2025	Test Completed on	27.10.2025
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	µg/m ³	68.9	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	31.6	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	9.1	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	13.5	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/26/0010	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4979	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	27.12.2025	Test Completed on	27.10.2025
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	µg/m ³	48.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	22.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.0	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

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TEST REPORT

Report No.	SARL/26/0011	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4980	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	27.10.2025
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	µg/m ³	67.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	30.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	7.9	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/m ³	12.4	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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/26/0012	Report Date.	27.10.2025

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-Vengayavellore 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-4981	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	27.10.2025
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	µg/m ³	50.0	100
2	Particulate Matter less than 2.5micron size (PM _{2.5})	IS 5182 (Part 24):2019	µg/m ³	21.3	60
3	Sulphur dioxide (SO ₂)	IS:5182: Part 02:2001	µg/m ³	4.5	80
4	Nitrogen Dioxide (NO ₂)	IS:5182: Part 06:2006	µg/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

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/26/0013

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
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-4982	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
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 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.42	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1034	-
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	428	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	83.2	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	52.8	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	208	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	220	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	320	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	81.5	1000



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TEST REPORT

Report No.	SARL/26/0013

Report Date.	03.01.2026

Sl. No	Parameters	Protocol	Unit	Result	*Limits
					Permissibl e
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	115	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	2.36	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.33	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

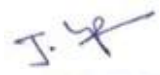
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

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/26/0014

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	W2-Vengayavellore village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4983	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
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 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.84	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	412.6	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	250	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	174	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	44.8	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	14.9	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	112	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	62	-
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	34.5	1000



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Report No.	SARL/26/0014

Report Date.	03.01.2026

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 (SO ₄ ²⁻)	APHA 24th Edition 4500 SO ₄ ²⁻ E: 2023	mg/L	13.5	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.04	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	BDL(D.L-1.0)	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.26	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/26/0015

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	W3-Pichchandal village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4984	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
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 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	6.97	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	720.5	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	435	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	232	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	58	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	145	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	87	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	160	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	166	1000



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TEST REPORT

Report No.	SARL/26/0015

Report Date.	03.01.2026

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 (SO ₄ ²⁻)	APHA 24th Edition 4500 SO ₄ ²⁻ E: 2023	mg/L	70.6	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.03	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	3.54	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.29	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/26/0016

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	W4-Adaiyur village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4985	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.20245
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
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 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.38	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1690	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1015	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	348	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	66.8	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	43.4	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	167.0	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	181	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	325	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	330	1000



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TEST REPORT

Report No.	SARL/26/0016

Report Date.	03.01.2026

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 (SO ₄ ²⁻)	APHA 24th Edition 4500 SO ₄ ²⁻ E: 2023	mg/L	212	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.07	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.65	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.41	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

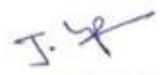
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

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/26/0017

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	W5-vengikkal village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4986	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
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 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.42	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1012	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	610	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	401	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	78	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	49.4	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	195	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	206	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	256	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	112	1000



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TEST REPORT

Report No.	SARL/26/0017

Report Date.	03.01.2026

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 (SO ₄ ²⁻)	APHA 24th Edition 4500 SO ₄ ²⁻ E: 2023	mg/L	116	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.05	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.99	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.29	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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/26/0018

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	W6-Vediappanur village

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-4987	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
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 24 th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.25	6.50-8.50
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	1165	-
B.	Chemical parameters				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	702	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	332	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	74.4	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	35.0	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	186	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	146	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	260	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	176	1000



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TEST REPORT

Report No.	SARL/26/0018

Report Date.	03.01.2026

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 (SO ₄ ²⁻)	APHA 24th Edition 4500 SO ₄ ²⁻ E: 2023	mg/L	220	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	BDL(D.L - 0.01)	0.3
16	Nitrate (as NO ₃)	IS 3025 (Part 34): 1988	mg/L	2.34	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

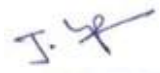
Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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Technical Manager

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TEST REPORT

Report No.	SARL/26/0025	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	SW 1- Kosalai tank

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/SW/CHE-4994	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.	Physical parameters			
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.76
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	262
B.	Chemical parameters			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	160
6	Total hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	90.5
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	22.3
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	8.33
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	55.8
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	34.7
11	Total alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	34.6
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	140



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TEST REPORT

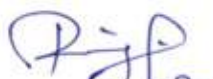
Report No.	SARL/26/0025

Report Date.	03.01.2026

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	15.2
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	BDL(D.L - 0.01)
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	BDL(DL-1.0)
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.25
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	BDL (D.L – 4.0)
20	Bio Chemical Oxygen Demand 3 Days at 27°C	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	BDL (D.L – 2.0)
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.2

Remarks: BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd


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END OF THE REPORT


Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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LAB SERVICES FOR:- Food, Water, Milk, Environment, Academic & Industrial Segment.

CIN : U74999TN2017PTC116807 / GST No : 33AAYCS7325R1ZA / PAN No: AAYCS7325R

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TEST REPORT

Report No.	SARL/26/0026	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	WATER
Sample Mark	SW 1- Devandal tank

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/SW/CHE-4995	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.	Physical parameters			
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24 th Edition 2130 B: 2023	NTU	<1.0
3	pH at 25 °C	APHA 24 th Edition 4500 – H+ B: 2023	-	7.95
4	Electrical Conductivity	APHA 24 th Edition 2510 B: 2023	(µS/cm)	251
B.	Chemical parameters			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	150
6	Total hardness (as CaCO ₃)	APHA 24th Edition 2340 C: 2023	mg/L	86.2
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	21.4
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	7.85
9	Calcium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Ca B: 2023	mg/L	53.5
10	Magnesium Hardness (as CaCO ₃)	APHA 24th Edition 3500 Mg B: 2023	mg/L	32.7
11	Total alkalinity (as CaCO ₃)	APHA 24th Edition 2320 B: 2023	mg/L	34.2
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	135



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TEST REPORT

Report No.	SARL/26/0026

Report Date.	03.01.2026

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	17.6
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	BDL(D.L - 0.01)
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	BDL(DL-1.0)
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.22
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	BDL (D.L – 4.0)
20	Bio Chemical Oxygen Demand 3 Days at 27°C	IS 3025 (Part 44): 1993	mg/L	BDL (D.L – 2.0)
21	Total Suspended Solids	APHA 24th Edition 2540 D: 2023	mg/L	BDL (D.L – 2.0)
22	Dissolved Oxygen	IS 3025 (Part 38): 1989	mg/L	6.1

Remarks: BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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END OF THE REPORT

Authorized Signatory
S. BALAMURUGAN
Asst. Technical Manager

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TEST REPORT

Report No.	SARL/26/0019	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpna S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	SOIL
Sample Mark	S1- PROJECT SITE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4988	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

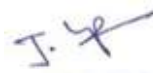
S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.56
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	75.68
3	Dry matter content	IS 15106: 2002	%	96.57
4	Water Content	IS 15106: 2002	%	3.43
5	Organic Matter	IS 2720: Part 22: 1972	%	0.49
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	190
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	50.32
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	28.96
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	20.72
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.42
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	662
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	354
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	%	19.8
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


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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/26/0020	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpna S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	SOIL
Sample Mark	S2-Vengayavellore village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4989	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.98
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	80.24
3	Dry matter content	IS 15106: 2002	%	93.25
4	Water Content	IS 15106: 2002	%	6.75
5	Organic Matter	IS 2720: Part 22: 1972	%	0.52
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	212
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	30.79
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	42.32
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	26.89
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.32
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	550
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	323
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	%	19.5
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


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Technical Manager

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TEST REPORT

Report No.	SARL/26/0021	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpna S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	SOIL
Sample Mark	S3-Pichchandal village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4990	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.85
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	47.32
3	Dry matter content	IS 15106: 2002	%	96.57
4	Water Content	IS 15106: 2002	%	3.43
5	Organic Matter	IS 2720: Part 22: 1972	%	0.69
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	154
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	49.01
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	31.69
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	19.3
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.75
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	428
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	636
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	%	20.6
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


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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/26/0022	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpna S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	SOIL
Sample Mark	S4-Adaiyur village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4991	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.99
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	62.45
3	Dry matter content	IS 15106: 2002	%	95.89
4	Water Content	IS 15106: 2002	%	4.11
5	Organic Matter	IS 2720: Part 22: 1972	%	0.75
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	205
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	34.65
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	45.52
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	19.83
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.25
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	387
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	590
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	%	22.1
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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/26/0023	Report Date.	03.012026

Customer Name & Address	Tmt.R.Kalpna S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	SOIL
Sample Mark	S5-vengikkal village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-2922	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

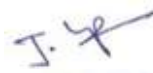
S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.12
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	55.39
3	Dry matter content	IS 15106: 2002	%	96.11
4	Water Content	IS 15106: 2002	%	3.89
5	Organic Matter	IS 2720: Part 22: 1972	%	0.96
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	244
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	40.12
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	36.51
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	23.37
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	2.32
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	420
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	664
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	%	23.6
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


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For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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(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.



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/26/0024	Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpna S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	SOIL
Sample Mark	S6-Vediappanur village

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-4993	Sample Received on	29.12.2025
Sample Collected by	LABORATORY	Test Commenced on	29.12.2025
Sample Collected on	28.12.2025	Test Completed on	03.01.2026
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.54
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	121
3	Dry matter content	IS 15106: 2002	%	94.36
4	Water Content	IS 15106: 2002	%	5.64
5	Organic Matter	IS 2720: Part 22: 1972	%	0.94
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	176
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SANDY LOAM
8	<u>Grain Size Distribution</u>	Methods Manual - Soil testing in India - P. No-67: 2011	%	66.65
	i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	23.74
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	9.61
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	BDL (D.L.0.02)
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.78
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	469
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	305
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	%	21.1
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




Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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TEST REPORT

Report No.	SARL/26/0027

Report Date.	03.01.2026

Customer Name & Address	Tmt.R.Kalpana S.F.No. 49/2 (Part-2) Adaiyur Village, Tiruvannamalai Taluk, Tiruvannamalai District, Tamil Nadu State
Sample Description	NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/NO/CHE-4996	Date of Monitoring	28.12.2025
Sample Collected by	LABORATORY		

Time in hrs	N1	N2	N3	N4	N5	N6
06.00	42.9	39.5	41.2	41.7	39.4	41.2
07.00	45.0	46.9	43.8	49.6	41.7	43.3
08.00	47.2	50.9	46.7	48.4	47.9	45.5
09.00	48.7	52.3	48.6	50.1	51.5	47.0
10.00	50.0	49.6	49.8	42.3	53.3	48.3
11.00	46.3	52.6	48.7	45.6	50.5	44.6
12.00	48.2	46.8	49.6	46.7	49.6	46.5
13.00	46.7	47.6	50.2	44.9	49.0	45.0
14.00	46.9	50.6	48.3	47.8	52.4	45.2
15.00	45.3	49.7	45.6	44.0	52.7	43.6
16.00	46.7	49.5	48.7	46.2	52.0	45.0
17.00	44.3	44.6	44.9	47.7	51.0	42.6
18.00	43.0	42.5	45.3	46.6	48.4	41.3
19.00	40.8	41.8	46.7	44.2	46.9	39.1
20.00	39.7	40.6	42.4	41.7	44.7	38.0
21.00	41.3	42.5	43.5	39.7	43.7	39.6
22.00	40.5	38.7	41.6	37.8	40.2	38.8
23.00	40.9	37.3	40.7	38.3	39.6	39.2
24.00	37.5	39.5	39.2	39.0	38.7	35.8
01.00	38.0	37.9	39.6	37.9	37.9	36.3
02.00	36.7	38.7	39.0	39.3	39.7	35.0
03.00	37.3	40.0	39.7	38.4	40.3	35.6
04.00	38.0	37.9	40.5	38.6	40.8	36.3
05.00	39.8	41.6	39.5	39.4	40.3	38.1

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TEST REPORT

Report No.	SARL/26/0026

Report Date.	03.01.2026

	N1	N2	N3	N4	N5	N6
DAY EQUIVALENT	46.1	48.4	47.3	46.3	49.8	44.4
NIGHT EQUIVALENT	38.8	39.2	40.1	38.6	39.8	37.1
DAY & NIGHT EQUIVALENT	44.7	46.9	45.9	44.9	48.3	43.0

Remarks:

LOCATIONS:

- N1- Project site
- N2-Vengayavellore village
- N3-Pichchandal village
- N4-Adaiyur village
- N5-vengikkal village
- N6-Vediappanur village

For Shrient Analytical and Research Labs Pvt. Ltd


Verified



END OF THE REPORT


Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

Please Contact:

For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

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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: 30/09/2025

Valid Until: 29/09/2029

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




Anuja Anand
Director


Chakravarthy T. Kannan
Chief Executive Officer



ANNEXURE-9

துருநீ :-

K. மதா,
தலைமை அலுவலர்
புனம் நடுநிலைப் பள்ளி,
அடையூர்.
திருவண்ணாமலை மாவட்டம்
திருவண்ணாமலை மாவட்டம்
தலை: 9361338725

முயற்சி :-

திருமதி. R. கல்பனா
க/பு மணிகண்டன்,
No: 798, பஞ்சாபி கோவில் தெரு,
தேவநகரம்,
சேதூர் மட்டி அட்டை,
திருவண்ணாமலை மாவட்டம் - 606902

முயற்சி :- புனம் நடுநிலைப் பள்ளி, அடையூர்
பள்ளி அளவில் நிதி கோருதல் - சார்பு.

அன்புடன்,

அணக்கம்.

திருவண்ணாமலை மாவட்டம், திருவண்ணாமலை அட்டை,
அடையூர் கிளத்தில் கல்பனா அமைப்பதற்காக அறிவிக்கப்பட்டு,
மேற்படி அடையூர் புனம் நடுநிலைப் பள்ளி தலை
செய்யுடைய கீழ்க்கண்ட அறிவிப்பு

திருவண்ணாமலை 1 அட்டை அட்டை தலை 8 அட்டை அட்டை
207 மாவட்டம், மாவட்டம் கல்பனா அட்டை அட்டை. பள்ளி
அளவில் கீழ்க்கண்ட அட்டை அட்டை அட்டை அட்டை

① அட்டை அட்டை அட்டை அட்டை

திருமதி,

② பள்ளி அட்டை அட்டை அட்டை

③ அட்டை அட்டை அட்டை அட்டை

④ மாவட்டம் அட்டை அட்டை அட்டை அட்டை

தலை: 11.09.2025

நன்றி.

திரு: அடையூர், திருவண்ணாமலை

திருமதி
12/9/25 5.00
தலைமை அலுவலர்

அட்டை அட்டை அட்டை அட்டை
அட்டை அட்டை - 606 604.
அட்டை அட்டை அட்டை அட்டை

வினா :-

திருவி. R. கீதா
தூண்கை அச்சியர்,
அத்திராபுர் நல நடுநிலைப்பள்ளி
அடைபூர்,
திருவண்ணாமலை மாவட்டம்
திருவண்ணாமலை மாவட்டம்
எண்: 7010250499

பதிலு :-

திருவி. R. கம்பா
திரும மணிகண்டன்,
NR: 798, பருண கோவில்,
தேவிகாபுரம்,
சேத்துப்பாடி வட்டம்,
திருவண்ணாமலை - 606902

பதிலு :- அத்திராபுர் நல நடுநிலைப்பள்ளி, அடைபூர்
பள்ளி உள்ளூர் நிதி கோரல் - சார்பு.

அன்புதாயர்,

அன்புதாயர்.

திருவண்ணாமலை மாவட்டம், திருவண்ணாமலை வட்டம்,
அடைபூர் கிராமத்தில் கல்விபார் அமைப்புள்ளதாக அறிவிக்கப்பட்டது.
மேற்படி அடைபூர், அத்திராபுர் நல நடுநிலைப்பள்ளி
கீழ்க் கீழ்க்கண்ட விவரம் உடனடி.

இப்பள்ளியில் 1 அடகு குதல் 8 அடகு அடகுபுறரை
48 மாணவ, மாணவியர்கள் பயின்று வருகிறார்கள். பள்ளி
உள்ளூர் நிதி கோரல் தீர்மானம் கீழ்க்கண்ட விவரம்

- (1) சிற்றுஞ்சு
- (2) அடகுபுறரை கட்டும்
- (3) தண்ணீர், கதவுகள் பழுதுபார்த்தல்
- (4) அனைத்து அடகுபுறரை கட்டும் தீர்மானம்
கட்டும்புறரை

நாள் : 11.09.2025

நன்றி.

இடம் : திருவண்ணாமலை, அடைபூர்

திருவண்ணாமலை I/c
11.09.2025
தலைமை ஆசிரியர்
ஆதி திராவிடர் நல நடுநிலைப்பள்ளி
ஆடைபூர்,
திருவண்ணாமலை வட்டம்