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

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

ToR Identification No. TO24B0108TN5151802N, dated 14.05.2024

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	812 (PART)
VILLAGE	NARANAMMALPURAM PART-I
TALUK	TIRUNELVELI
DISTRICT	TIRUNELVELI
EXTENT	1.95.0 HA
PROPOSED PRODUCTION QUANTITY FOR FIVE YEARS	ROUGH STONE - 2,31,420 M3 GRAVEL - 30,772 M3
LAND	PATTA LAND

(Sector No. 1(a) Sector No.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 18.42.55 Ha
Baseline Monitoring Period – February 2024 to April 2024

APPLICANT

Thiru. N.Mohammed Saleem Badhusha,
Naranammalpuram Part-I Village,
Tirunelveli Taluk, Tirunelveli District,
Tamil Nadu State

ORGANIZATION

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/2326/IA 0110

MAY - 2024

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						
2						
3						
4						
5						
6						
7						
8						
9						
10						

ACKNOWLEDGEMENT

M/s. Global Mining Solutions, Salem is very much thankful to N.Mohammed Saleem Badhusha, Lessee for the confidence and trust placed on the organization for carrying out Environmental Impact Assessment (EIA) study for the proposed Rough Stone and Gravel quarry over a lease extent of 1.95.0., & Cluster extent of 15.82.0 Ha., located at Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli 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 Naranammalpuram Part-I Village and the nearby villages for their whole hearted cooperation and constant involvement during the entire field study without which the study would not have been possible.

For: M/s. Global Mining Solutions

(M. Prabu)

Managing Director

UNDERTAKING

In line with MoEF OM No. J – 11013/41/2006-IA.II (I) dated 5th October 2011, we hereby give our undertaking for owning the content and information in the EIA/EMP report submitted for EC of the proposed Rough Stone and Gravel quarry over a lease extent of 1.95.0., & Cluster extent of 15.82.0 Ha., located at Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State.

For: M/s. Global Mining Solutions

Name: Manikandan
EIA Coordinator – Mining

UNDERTAKING

In Line with OM no. J-11013/41/2006-IA.II (1) dated 4th Aug 2009 and its Amendments, we hereby confirm that all Terms of Reference issued by Ministry of Environment, Forest and Climate Change vide ToR R Identification No. TO24B0108TN5151802N, dated 14.05.2024 of Draft EIA/EMP report for the proposed Stone Quarry over a lease extent of 1.95.0., & Cluster extent of 15.82.0 Ha., located at Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State for the production of 2,31,420 m^3 of Rough Stone and 30,772 *m3 of gravel 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/2326/IA 0110, valid till 04.01.2026.

For: M/s. Global Mining Solutions

Name: Manikandan
EIA Coordinator – Mining

QUALITY COUNCIL OF INDIA
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NABET

National Accreditation Board for Education and Training

NABET

Certificate of Accreditation

Global Mining Solutions

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

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

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals-opencast mining only	1	1 (a) (i)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IAAC minutes dated February 10, 2023, posted on the QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance with the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/23/2724 dated March 31, 2023. The accreditation needs to be renewed before the expiry date by Global Mining Solutions, Salem following the due process of assessment.

Sr. Director, NABET
Date: March 31, 2023

Certificate No.
NABET/EIA/2326/IA 0110

Valid up to
January 4, 2026

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

ANNEXURE - VII

Declaration by Experts contributing to the proposed Stone Quarry over a lease extent of 1.95.0., & Cluster extent of 15.82.0 Ha., located at Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli 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

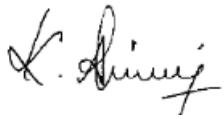
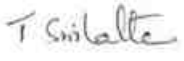
Signature & Date

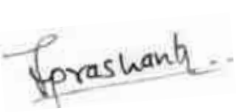
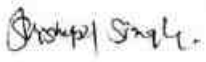
Period of involvement: February 2024 to April 2024.

Contact information:

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

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and Date
1	*AP*	*Dhanalakshmi Ramanathan*	*Assessment of existing air quality, Impact of the project on ambient air and suggested mitigation measures for air pollution.* *Period: Feb 2024 to April 2024.*	R. Dhanal

2	*WP*	*Abirami Kaliaperumal*	*Assessment of existing water quality, impact of the project on surface and ground water quality, suggested mitigation measures for minimizing the impact.* *Period: Feb 2024 to April 2024.*	
3	*SHW*	*Ramadoss N*	*Assessment of waste generated from the project, suggested waste management practices.* *Period: Feb 2024 to April 2024.*	
4	*SE*	*Sarasvathy K*	*Baseline SE studies. Data compilation and assessment. Impact of the project on SE status of the area. Formulation of CER plan.* *Period: Feb 2024 to April 2024.*	
5	*EB*	*Saravanan S*	*Baseline data collection of related to ecology of the area.* *Period: Feb 2024 to April 2024.*	
6	*HG*	*Ravinthiran N*	*Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area.* *Period: Feb 2024 to April 2024.*	
7	*AQ*	*Srilatha Thiruveedhula*	*Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.* *Period: Feb 2024 to April 2024.*	

8	*NV*	*Dhanalakshmi Ramanathan*	*Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.* *Period: Feb 2024 to April 2024.*	
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.* *Period: Feb 2024 to April 2024.*	
10	*RH*	*S.V. Prashant*	*Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the worker.* *Period: Feb 2024 to April 2024.*	
11	*SC*	*Shisupal Sing*	*Soil monitoring, secondary data collection on soil type, soil management practices, utilization of topsoil.* *Period: Feb 2024 to April 2024.*	
12	*GEO*	*Valliappan Meyyappan*	*Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area.* *Period: Feb 2024 to April 2024.*	

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8	Monitoring Report	
9	Lab NABL Certificate	
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11	25km Map showing forest and sanctuaries	
12	Affidavit	

COMPLIANCE TO TERMS OF REFERENCE

S.No	ToR Points	Reply	Pg. No
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 four 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.	-
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 management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	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 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 furnish the Emergency Management plan within the cluster.	Agreed. It will be complied as mentioned in the Point No.4.	-
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Agreed. It will be complied as mentioned in the Point No.4.	-
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Agreed. It will be complied as mentioned in the Point No.4.	-
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Agreed. It will be complied as mentioned in the Point No.4.	-
Impact study of mining			
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following,		-
a	Soil health & soil biological, physical land chemical features	Complied. The details are given in Chapter 3 of the Draft EIA report.	102
b	Climate change leading to Droughts, Floods etc.	The proposed quarry is a very small scale Opencast Semi-Mechanized mining method and the anticipated impacts to the climate change, droughts, floods, etc. will be very marginal.	-
c	Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, &Livelihood of the local people	Considering that the quantum of production is less, only 2 excavator, 3 tippers will be engaged. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 500 number of plants will be	72

		planted in and around the lease area.	
d	Possibilities of water contamination and impact on aquatic ecosystem health	The total water requirement is 4.0 KLD. It will be outsourced from the nearby villages. So, no impact in the project area due to water usage. The wastewater generation in the form of 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 separation during dry season. However, there is no wastewater discharge from this quarry is being anticipated. So, possibilities of water contamination and impact on aquatic ecosystem health is not envisaged.	-
e	Agriculture, Forestry & Traditional practices	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 & Traditional practices located within 10km radius.	-
f	Hydrothermal/Geothermal effect due to destruction in the Environment	The proposed quarry operation is Opencast Semi-Mechanized operation with drilling, blasting, excavation, loading and transportation. So, the effect of Hydrothermal/Geothermal is not envisaged.	-

g	Bio-geochemical processes and its foot prints including environmental stress	This is a simple mining operation, so bio-geochemical processes are not envisaged.	-
h	Sediment geochemistry in the surface streams	Seasonal Odai and Tirunelveli Canal are located at a distance of 57m & 750m respectively. Thamirabarani River & Chittar River is located at a distance of 3.2 km & 5.9 km respectively. Due to mining operation, there may be minimum impact to the said water bodies due to dust sedimentation. It will be controlled by wet drilling, water sprinkling and plantation.	-
Agriculture &Agro-Biodiversity			
13	Impact on surrounding agricultural fields around the proposed mining Area.	Agreed. It is described in the point no. 12 (e) of this ToR Compliance Annexure-B	-
14	Impact on soil flora & vegetation around the project site.	Complied. The details are given in Chapter 3.	103
15	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.	Complied. The details are given in Chapter 3.	103
16	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 Chapter 3.	103
17	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.	177
18	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 4.	10
Forests			
19	The project proponent shall detailed study on impact of mining on Reserve Forests free ranging wildlife.	There is Gangaikondan R F Located at a distance of 1.75 km and no other reserved forest	103

		located in the buffer zone. The fauna commonly found in the core and buffer zone is given in Chapter 3.	
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Complied. The details are given in Chapter 3.	103
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Not Applicable. This is a dry barren land.	-
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There is Gangaikondan R F Located at a distance of 1.75 and no other reserved forest located in the buffer zone. There is no, National Parks, Corridors and Wildlife pathways.	-
Water Environment			
23	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	The hydrogeological study from a reputed institute is in progress; however, the final EIA submission report will be incorporated into Chapter 7.	121
24	Erosion Control measures.	There is no waste generation (OB) in this quarry has been envisaged. However, there may be erosion due to rainy season and that is limited within quarry area. The control measures are explained in Chapter 8.	185
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Complied. The details are incorporated in Chapter 3.	103

26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Not applicable.	-
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Fragmentation impact on environment may be due to drilling and blasting. The anticipated impacts and mitigation measures are discussed in Chapter 4.	76
28	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	An ecological and biodiversity study has been conducted and the same is incorporated in the Chapter 3 of the Draft EIA/EMP report. However, there is no any features mentioned in this condition within the M.L area. However, the impacts anticipated with respect to the environment of the project area is very negligible and it will be minimized within the project area. The details are described in Chapter 10.	103
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	Agreed.	-
30	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Complied. The details are described in Chapter 3.	103
Energy			
31	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	Complied. The details are described in Chapter 4.	82
Climate Change			
32	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.	Complied. The details are described in Chapter 4.	82

33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Complied. The details are described in Chapter 4.	82
Mine Closure Plan			
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Complied. Mine Closure Plan has been incorporated in the approved Mining Plan and the same is incorporated in the Chapter 4 & 10.	132 & 173
EMP			
35	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Complied. The details are described in Chapter 10.	182
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	Complied. The details are described in Chapter 10.	182
Risk Assessment			
37	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.	161
Disaster Management Plan			
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Complied. The details are described in Chapter 7.	172
Others			
39	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.		
40	As per the MoEF& CC office memorandum F.N0.22-65/2017-1A.11I dated: 30.09.2020 and20.10.2020 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.	-
41	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.	Nil	-
2. Mining Conditions - Site Specific			
2.1	The PP shall obtain NOC from TANGEDCO for the HT line located at a distance of 175m, 240m, 415m from the boundary of the quarry site in order to carry out said mining activity	It will be complied.	
2.2	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	Complied. The Details are given as Annexure.	Complied. Enclosed as Annexure 4
2.3	The Plan and Sections of the Development & Production Plan prepared for the proposed quarry in the Mining Plan shall be changed accordingly to satisfy the legal	- Complied.	Complied. Enclosed as Annexure -3

	provisions on 'Bench Geometry' as stipulated in the MMR 1961		
2.4	The PP shall furnish the authentic details on the tank existing at a distance of 175 m during the EIA appraisal.	Details included in the hydrogeological study from a reputed institute is in progress; however, the final EIA submission report will be incorporated. -	Complied. Enclosed as Annexure13
3	SEAC Standard Condition		
3.1	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.	Not applicable. This is a fresh quarry.	-
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.	Complied.	Complied. Enclosed as Annexure 5
3	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.	-

4	The Project Proponent shall carry out Bio-diversity study through reputed institution and the same shall be included in the EIA report.	Complied. The biodiversity report of the study area to be incorporated at the time of final EIA submission.	103
5	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries. Tiger reserve etc. upto a radius of 25 km from the proposed site.	The DFO letter stating that the proximity distance of RF & PF to be incorporated at the time of final EIA submission.	-
6	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.	-	**-**
7	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.	It will be complied at the timing of EC appraisal.	-
8	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	Proponent undertaking agreement enclosed	-

9	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	Agreed. Will be complied.	-
10	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 details to be incorporated at the time of final EIA Submission.	-
11	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines	Not applicable. This is a fresh quarry project.	-
12	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Not applicable. This is a fresh quarry project.	-
13	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	Not applicable. This is a fresh quarry project.	-
14	All comer coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area	Project coordinates superimposed in satellite imagery and given as Figure No – 2.1 in Chapter – 2. The geology and geomorphology map are provided in Figure No.3.23, 3.24 Chapter 3.	63-124

	should clearly show the land use and other ecological features of the study area (core and buffer zone).	The Lithology map and Soil map are provided under Figure No. 3.25, Chapter-3. The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 & Figure 3.2 in Chapter – 3.	
15	The PP shall carry out Drone video survey covering the cluster, green belt, fencing etc.,	This is fresh quarry. The condition will be complied after commencement of the mining operation.	-
16	The proponent shall furnish photographs of adequate fencing, greenbelt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan	There are no trees within ML area. Fencing and plantations are under process. 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 0.69.0 Ha will be under greenbelt and plantation.	-
17	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 Rough stone 680260 m3 and Gravel 38872 m3. The mineable reserves of Rough stone 2,31,420 m3 and Gravel 30772 m3	68
18	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 Fig. 10.1	180
19	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,	The hydrogeological study from a reputed institute is in progress; however, the final EIA submission report will be incorporated into Chapter 7.	121

	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.		
20	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality& flora/fauna including traffic/vehicular movement study.	The baseline data for all environments is collected for the winter season (February to April 2024).	78
21	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.** Accordingly, a detailed Environment Management Plan is prepared considering air, water, noise and soil environment and the details are given in **Chapter 7.**	145 & 169
22	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Rain water harvesting Plan is given in **chapter 4.**	173
23	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.	Satellite imagery has been used to study the lease area and the details of land use is given in **Chapter 3.**	106

24	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.	-
25	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 famishedto the effect that the proposed mining activities could be considered.	No proximity to Critically polluted areas.	-
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	The impact of the mining operations due to this quarry on water environment is studied and mitigation measures are proposed. Rain water harvesting plan is given Chapter 4.	173
27	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.	-
28	A tree survey shall be carried out (Nos. name of species, age, diameter, etc) both within the mining lease applied area & 300m buffer zone and its management during mining activity	There are no trees within 300m buffer zone of the project area.	-
29	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	Detailed mine closure plan is given in Chapter 7.	173
30	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.	-

31	The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix – I in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Green belt is proposed in an area of 0.39.0 Ha. Green belt development plan provided.	69
32	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	Accepted. The photographs showing green belt will be provided once it is completed.	-
33	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	A disaster management plan is prepared and the details are given in Chapter 7.	172
34	A risk assessment and Management plan shall be prepared and included in the EIA/EMP report for the complete life of the proposed quarry or till the end of the lease period	Risk assessment and its management is given in Chapter 7.	161
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.	119

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. Details of CER and CSR are discussed under Chapter No. 8	-
37	The Socio-economic studies should be carried out within a 5km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Socio economic study is conducted both by visits and secondary data collection. Details are given in Chapter 3	152
38	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	-
39	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	200
40	If any quarrying operations were carried out in the proposed quarrying site for which now EC is sought, the project proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF & CC, Regional Office, Chennai or the concerned DEE/TNPCB.	Not applicable. This is a fresh quarry project.	-
41	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.	-	-
42	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	Agreed	-

	attracting penal provisions in the Environment (Protection) Act, 1986		
Standard Terms of Reference for (Mining of minerals)			
1.1	An EIA-EMP Report shall be prepared for peak capacity (…..MTPA)operation in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.	Complied.	-
1.2	An EIA-EMP Report would be prepared for peak capacity operation to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for.... MTPA of mineral production based on approved project/Mining Plan for.... MTPA. Baseline data collection can be for any season (three months) except monsoon.	Anticipated Environmental Impacts and Mitigation Measures is given in Chapter 8.	130
1.3	Proper KML file with pin drop and coordinate of mine at 500-1000 m interval be provided.	Agreed	-
1.4	A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries, mines, and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant	Land Use Pattern of 10 km Radial Buffer Area of Project Site is given page chapter-3.	107

	Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given. The above details to be furnished in tabular form also		
1.5	Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.	Land Use Pattern of 10 km Radial Buffer Area of Project Site is given page chapter-3.	107
1.6	A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.	Contour map, Physiography and Drainage is given Chapter-3.	122
1.7	Catchment area with its drainage map of 25 km area within and outside the mine shall be provided with names, details of rivers/ riverlet system and its respective order. The map should clearly indicate drainage pattern of the catchment area with basin of major rivers. Diversion of drains/ river need eloboration in form of lengthe, quantity and quality of water to be diverted	Drainage map is given Chapter-3.	122
1.8	Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine	Mineral reserves, geological status of the study area is given chapter-2.	184

	plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.		
1.9	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.	Method of mining Details is Given Chapter-2.	184
1.10	Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.	Details given chapter-2	78
1.11	A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channeling of the water courses, etc., approach roads, major haul roads, etc should be indicated.	Land Use Pattern of 10 km Radial Buffer Area of Project Site is given page chapter-3.	107
1.12	Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under	Land Use Pattern of 10 km Radial Buffer Area of Project Site is given page chapter-3.	107

	surface rights and under mining rights should be specified. Area under Surface Rights Area under Surface Area Under Mining Rights(ha) S.N ML/Project Land use Rights(ha) (ha) Area under Both (ha) 1 Agricultural land 2 Forest Land 3 Grazing Land 4 Settlements 5 Others (specify) S.N. Details Area (ha) 1 Buildings 2 Infrastructur 3. Roads 4 Others (specify) Total		
1.13	Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.	Flora & fauna of 10 km Radial Buffer Area of Project Site is given page chapter-3.	103
1.14	One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided. The detail of NABL/ MoEF&CC certification of the respective laborartory and NABET accreditation of the consultant to be provided.	Details given under description of the environment chapter-3.	80

1.15	Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.	Details given under description of the environment chapter-3.	80
1.16	For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAQMS shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area. In case of expansion, the displayed data of CAAQMS and its comparison with the monitoring data to be provided	Details given under description of the environment chapter-3.	87
1.17	A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report	Details given under chapter-4.	171

1.18	The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data should be provided in EIA/ EMP report also occupational status & economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.	Socioeconomic Environment Details Given Chapter-3.	152
1.19	The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that area and what will be the compensatory measure to be adopted by PP to minimize the impact of forest diversion.	Biological Environment Details Given Chapter-3.	78
1.20	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.	Health Details Given Chapter-3.	114
1.21	Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted	The hydrogeological study from a reputed institute is in progress; however, the final EIA submission report will be incorporated into Chapter 7.	171
1.22	Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability	Abstraction from the mine on the hydrogeology and groundwater regime details is given chapter-3	1471

	and/or if the area falls within dark/grey zone.		
1.23	Study on land subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.	Land subsidence is given chapter-3	171
1.24	Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.	Impact due to Water use in Mines and water balance given chapter-4.	136
1.25	PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs	Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan details given chapter-10	139
1.26	PP to evaluate the greenhouse emission gases from the mine operation and corresponding carbon absorption plan.	greenhouse emission gases details given chapter-10	139
1.27	Site specific Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan should be provided.	Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan given chapter-7.	136
1.28	Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.	Mining method, technology details given chapter-1.	139
1.29	Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of	Mineral transportation details given chapter-2.	140

	mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.		
1.30	Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.	Parking, rest areas and canteen, and effluents/pollution load details given chapter -4	145
1.31	The number and efficiency of mobile/static water jet, Fog cannon sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.	PP will provide mobile water tankers with a cost of 1.0 lakhs under EMP.	160
1.32	Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.	Final Mine Closure Plan and post mining land use details given in chapter-7	173
1.33	Adequate greenbelt nearby areas, mineral stock yard and transportation area of mineral shall be provided with details of species selected and survival rate Greenbelt development should be undertaken particularly around the transport route.	Agreed	-
1.34	Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.	EMP cost details given chapter-2	160

1.35	Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.	Not applicable.	-
1.36	CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.	CSR details given chapter-11	200
1.37	Corporate Environment Responsibility:	CSR details given chapter-11	200
1.38	a) The Company must have a well laid down Environment Policy approved by the Board of Directors.	Environment policy details given chapter- 10.	181
1.39	b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.	Environment policy details given chapter- 10.	181
1.40	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.	-	-
1.41	d) To have proper checks and balances, the company should have a well laid down 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.	-	-

1.42	e) Environment Managament Cell and its responsibilities to be clearly spell out in EIA/ EMP report	EMP cell details given Chapter-4	182
1.43	f) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.	Agreed	-
1.44	Status of any litigations/ court cases filed/pending on the project should be provided	Nil	
1.45	PP shall submit clarification from DFO that mine does not fall under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.	Noted	-
1.46	Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.	Noted	-
1.47	Details on the Forest Clearance should be given as per the format given: Total ML Total Project Area Forest (ha) land (ha) Date of FC Extent of Forest Land Balance area for which FC is yet to be obtained Status of appl for diversion of forest land If more than one provides details of each FC	Noted	-
1.48	In case of expansion of the proposal, the status of the work done as per mining plan and approved mine closure plan shall be detailed in EIA/ EMP report	Noted	-
1.49	Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the time bound action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated	Noted	-

	English Translation of the same should be provided.		
1.50	PP shall carry out survey through drone highlighting the ground reality for atleast 10 minutes	Noted	-
1.51	Detailed Chronology of the project starting from the first lease deed alloted/Block allotment/ Land acquired to its No. of renewals, CTO /CTE with details of no. renewals, previous EC(s) granted details and its compliance details, NOC details from various Govt bodies like Forest NOC(s), CGWA permissions, Power permissions, etc as per the requisites respectively to be furnished in tabular form	Noted	-
1.52	The first page of the EIA/ EMP report must mention the peak capacity production, area, detail of PP, Consultant (NABET acrreditation) and Laboratory (NABL / MoEF & CC certification)	Noted	-
1.53	The compliances of ToR must be properly cited with respective chapter section and page no in tabular form and also mention sequence of the respective ToR complied within the EIA-EMP report in all the chapter,s section	Noted	-

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.

Thiru. N.Mohammed Saleem Badhusha, Lessee, has obtained Precise Area communication letter from the Joint Director / Assistant Director (i/c), Department of Geology and Mining, Tirunelveli, to quarry out 92,31,420 m^3 of Rough Stone and 30,772 m^3 of Gravel over an extent of 1.95.0 Ha., located at the Survey No. 812 (P), of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State. 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.

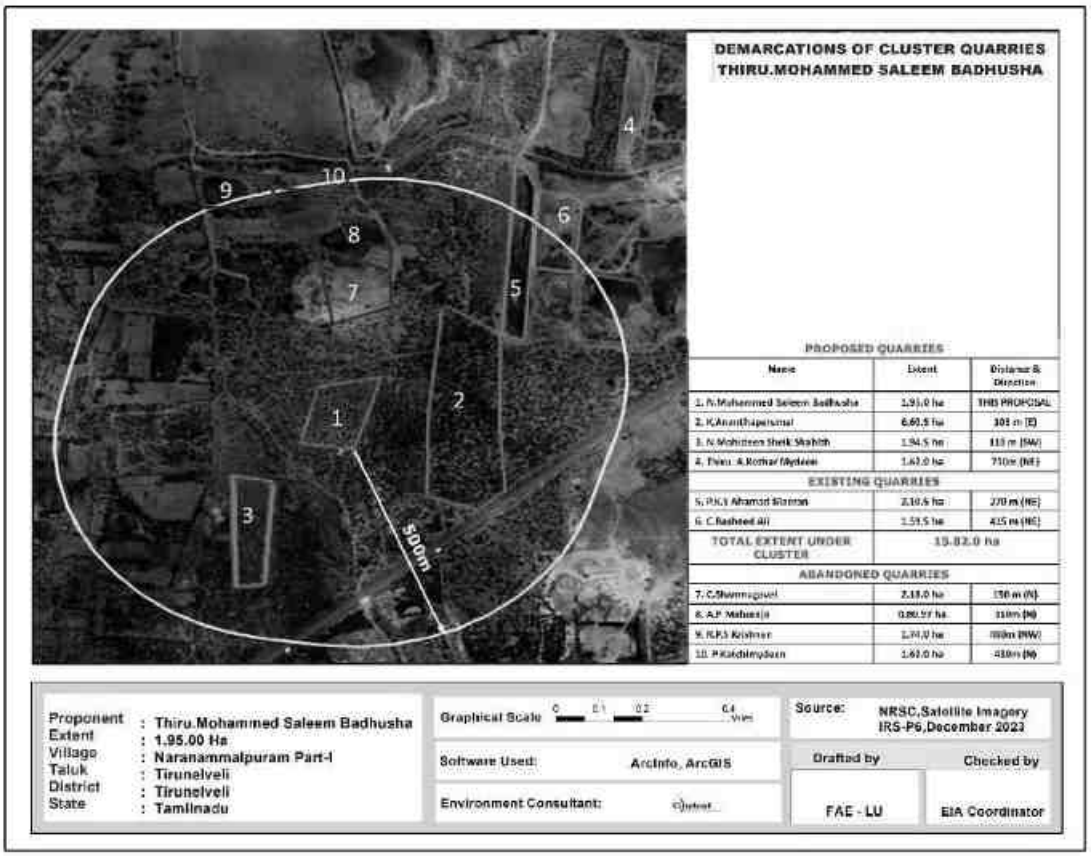
	Table 1.1 Cluster Mines Details					
Sl. No	Name and address	G.O. No. and Date	Village and Taluk	S.F.No.	Extent (in Ha)	Period of lease
Existing Quarries						
1	Thiru.P.K.S.Ahamad Meeran, S/o.Mohamed Sultan, 18, Puthu Amman Kovil Street, Sindhupundhurai, Tirunelveli Taluk and District.	Rc. No.M2/ 214/2023, dated. 20.09.2023	Gangaikondan Part-2 Village, Tirunelveli Taluk	1665/1B	2.10.5	06.10.2020 to 05.10.2025
2	Thiru.C.Rasheed Ali, S/o.Chinna Sheik Rowther, 9/100, Mela	Rc. No.M2/ 214/2023,	Gangaikondan Part-2 Village,	1662/1A(P) (0.38.0)	1.59.5	21.01.2022 to

	Pallivasal Street, Mela Thalaiyuthu, Sankar Nagar, Tirunelveli – 627357	dated. 20.09.2023	Tirunelveli Taluk	& 1663/1A (1.21.5)		20.01.2032
	Extent: 3.70.0 Ha					
Abandoned Quarries:						
1	C.Shanmugavel	Rc. No. M2/32387/1999 Dated 14.07.1999	Naranammalpuram Village	817/2	2.18.0 Ha	Abandoned quarry
2	A.P Maharaja	Rc. No. M3/17064/2004 Dated 05.08.2004	Naranammalpuram Village	824/3A	0.80.97	Abandoned quarry
3	R.P.S Krishnan	Rc. No. M3/113038/2005 Dated 28.02.2006	Naranammalpuram Village	824/1 & 825	1.74.0	Abandoned quarry
4	P.Katchimydeen	Rc. No. M3/99246/2004 Dated 20.11.2004	Naranammalpuram Village	817/1B1C	1.62.0	
Proposed Quarries						
S.No.	Name and address	Village & Taluk	S.F.No.	Extent (in Ha)		Remarks
1	Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District – 627357.	Naranammalpuram Part-1 Village, Tirunelveli Taluk	812(P)	1.95.0		Proposed quarry
2	Thiru.K.Ananthaperumal, S/o.Kanniah, 160D/8, Polepettai West, Thoothukudi District.	Palamadai Village, Tirunelveli Taluk	414/1, 415A/1A & 415A/2A	6.60.5		Instant proposal

3	Thiru.N.Mohideen Sheik Shahith, S/o.Navaskhan, 1/19, Muthu Nagar, Sankar Nagar, Tirunelveli – 627 357.	Naranammalpuram Part-1 Village, Tirunelveli Taluk	807	1.94.50	Proposed quarry
4	Thiru.A.Kothar Mydeen, S/o.Ahamed Meeran, Thenkulam, Tirunelveli.	Gangaikondan Village, Tirunelveli Taluk	1660/4	1.62.0	Proposed quarry
Total Extent: 15.82.0 Ha					

As per EIA notification, 2006 and its subsequent amendments the proposed Thiru.K.Ananthaperumal Rough Stone & Gravel 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 15.82.0 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. TO24B0108TN5151802N, dated 14.05.202. This report has been prepared in line with the approved TOR for production of maximum excavation of 2,31,420 m^3 of Rough Stone and 30,772 m^3 of Gravel of gravel for a period of five years.

1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

The proposed project is for mining of Rough Stone gravel (under cluster) from the S.F. No. 812 (P) located in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli 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 & Gravel quarry
4.	Type of Lease	Proposed quarry
5.	Extent of the lease	1.95.0 Ha
6.	Proposed depth of mining	37m BGL
7.	Method of mining	Opencast Semi-mechanized
8.	Proposed lease period	10 Years
9.	Proposed Environmental Clearance	5 Years
10.	Proposed production quantity for five years	2,31,420 m^3 of Rough Stone 30,772 m^3 of Gravel

(b) Profile of the project proponent

The proposed lessee N.Mohammed Saleem Badhusha is an individual with sound experience in the identification of quarry, operation and marketing in the field of Rough Stone and gravel quarry. The proposed land is It is owned patta land, Please refer Annexure no –I, the applicant owned this land through government tender.

(c) Project proponent details

Name of the proponent : Thiru. N.Mohammed Saleem Badhusha

Status of the Proponent : Individual
Address : Thiru. N.Mohammed Saleem Badhusha
S/o.Navaskhan,
No.1/19, Muthnagar,
Sankarnagar,
Tirunelveli,
Pin Code– 627 357

1.3 BRIEF DESCRIPTION OF NATURE OF THE PROJECT

The proposed quarrying operation Opencast Semi-Mechanized method with 5m bench height, 5m bench width and overall bench slope is less than 80°. The quarry operation involves shallow jackhammer drilling, slurry blasting, excavation, loading and transportation.

1.4 SIZE AND LOCATION OF THE PROJECT

(a) Size of the project

Table1.2 Proposed project details

Sl. No.	Feature	Description
1	Type of land	Owned Patta land
2	Extent of lease area	1.95.0 Ha
3	Type of lease	Proposed quarry
4	Geological Resource	Rough Stone – 6,80,260 m3 Gravel - 38,872 m3
5	Mineable Resource	Rough Stone – 2,31,420 m3 Gravel – 30,772 m3
6	Proposed production quantity for five years	Rough Stone - 2,31,420 m3 Gravel - 30,772 m3
6	Proposed depth of mining	37m BGL

(b) Location of the project

The proposed project site is located in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State and its Latitude 08°48'15.51"N to 08°48'21.48"N and Longitude: 77°44'57.62"E to 77°45'03.02"E. with Survey of India Topo Sheet No58-H/13.

1.5 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.

1.6 SCOPE OF THE STUDY WITH DETAILS OF REGULATORY SCOPING

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 gives 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, Tamilnadu has issued a Terms of Reference ToR Identification No. TO24B0108TN5151802N, dated 14.05.2024 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 summer season 2024 (February 2024 to April 2024) 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.

1.7 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 February 2024 to April 2024 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.

1.8 STATUS OF LITIGATIONS

This is a fresh 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 Joint Director / Assistant Director (i/c), Department of Geology and Mining, Tirunelveli vide Roc.No.M2/197/2023 dated 06.10.2023. The letter copy enclosed as **Annexure – 2.**

b. Mining Plan Approval Letter:

The project proponent has prepared mining plan under rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the Joint Director / Assistant Director (i/c), Dept. of Geology & Mining, Tirunelveli vide Rc.No.M2/197/2023 dated 14.11.2023. 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 the Joint Director / Assistant Director (i/c), Department of Geology and Mining, Tirunelveli vide Rc.No.M2/197/2023 dated 20.09.2023. The letter copy enclosed as **Annexure – 4.**

d. Project Proponent undertaking affidavit:

The project proponent has issued an affidavit under MoEF & CC O.M. No. 3-50/2017-IA.III(Pt.) dated 30.05.2018 to comply with the direction of the Hon'ble SC made on 2.08.2017 in W.P. (C) 114 of 2014 in matter of Common Cause vs Union of India & Ors. The Affidavit copy is enclosed as **Annexure – 12.**

e. Land document of the proposed lease area:

It is patta land jointly registered in the name of Thiru.Mohammed Saleem Badhusha, (applicant) Thiru.Mohammed Abdur Rahman Wajith, Thiru.Mohideen Sheik Shahith vide patta no.1465, the applicant has obtained consent from the other pattadar. The copy of the Patta, Adangal, A-Register and Consent Registered Documents are enclosed as Annexure - 6.

CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT

The type of the project is opencast semi-mechanized mining method to excavate Rough Stone within the proposed Mine Lease area with drilling, blasting, loading and transportation. This project is located at S.F. No. 812 (P) over an extent of 1.95.0 Ha in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli 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 15.82.0 Ha. The details of mines located in the cluster area is certified by Joint Director / Assistant Director (i/c), Dept. of Geology & Mining, Tirunelveli vide Rc.No.M2/197/2023 dated 14.11.2023.

	Table.2.1 Cluster Mines Details					
Sl. No	Name and address	G.O. No. and Date	Village and Taluk	S.F.No.	Extent (in Ha)	Period of lease
Existing Quarries						
1	Thiru.P.K.S.Ahamad Meeran, S/o.Mohamed Sultan, 18, Puthu Amman Kovil Street, Sindhupundhurai, Tirunelveli Taluk and District.	Rc. No.M2/ 214/2023, dated. 20.09.2023	Gangaikondan Part-2 Village, Tirunelveli Taluk	1665/1B	2.10.5	06.10.2020 to 05.10.2025
2	Thiru.C.Rasheed Ali, S/o.Chinna Sheik Rowther, 9/100, Mela Pallivasal Street, Mela Thalaiyuthu, Sankar Nagar, Tirunelveli – 627357	Rc. No.M2/ 214/2023, dated. 20.09.2023	Gangaikondan Part-2 Village, Tirunelveli Taluk	1662/1A(P) (0.38.0) & 1663/1A (1.21.5)	1.59.5	21.01.2022 to 20.01.2032
	Extent: 3.70.0 Ha					

Abandoned Quarries:

1	C.Shanmugavel	Rc. No. M2/32387/1999 Dated 14.07.1999	Naranammalpuram Village	817/2	2.18.0 Ha	Abandoned quarry
2	A.P Maharaja	Rc. No. M3/17064/2004 Dated 05.08.2004	Naranammalpuram Village	824/3A	0.80.97	Abandoned quarry
3	R.P.S Krishnan	Rc. No. M3/113038/2005 Dated 28.02.2006	Naranammalpuram Village	824/1 & 825	1.74.0	Abandoned quarry
4	P.Katchimydeen	Rc. No. M3/99246/2004 Dated 20.11.2004	Naranammalpuram Village	817/1B1C	1.62.0	

Proposed Quarries

S.No.	Name and address	Village & Taluk	S.F.No.	Extent (in Ha)	Remarks
1	Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District – 627357.	Naranammalpuram Part-1 Village, Tirunelveli Taluk	812(P)	1.95.0	Proposed quarry
2	Thiru.K.Ananthaperumal, S/o.Kanniah, 160D/8, Polepettai West, Thoothukudi District.	Palamadai Village, Tirunelveli Taluk	414/1, 415A/1A & 415A/2A	6.60.5	Instant proposal
3	Thiru.N.Mohideen Sheik Shahith, S/o.Navaskhan, 1/19, Muthu Nagar, Sankar Nagar, Tirunelveli – 627 357.	Naranammalpuram Part-1 Village, Tirunelveli Taluk	807	1.94.50	Proposed quarry

4	Thiru.A.Kothar Mydeen, S/o.Ahamed Meeran, Thenkulam, Tirunelveli.	Gangaikondan Village, Tirunelveli Taluk	1660/4	1.62.0	Proposed quarry
Total Extent: 15.82.0 Ha					

The proposed production is is 2,31,420 m^3 of Rough Stone and 30,772 m^3 of Gravel for the period of five years by open cast semi mechanized mining method.

2.2 SALIENT FEATURES OF THE PROJECT

The salient features of the proposed Rough Stone quarry of N.Mohammed Saleem Badhusha.

Table 2.1.a Salient features of the project

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	New Project
3	Category	B1
4	Nature of mineral	Minor mineral
5	Life of the mine	10 years
6	Production Quantity for five years	Rough Stone - 2,31,420 m^3 Gravel - 30,772 m^3
7	Waste generation and management	Nil
8	Bench height and width	Proposed bench height & width is 5.0m respectively and number of proposed benches is 6 Nos.
9	Ultimate pit depth	37m BGL
10	End use	The excavated Rough Stone and Gravel is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

2.3 LOCATION

This project site is located in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State. The Nearest Railway line is Tirunelveli - Thoothukudi line which is about 288 m on southeastern side of the area. The National Highway (NH-44) Salem – Kanniyakumari is about 900 m on western side of the area. The State Highway (SH-75) Tirunelveli – Ottapidaram is about 6.8 Km on southeastern side of the area. The general location is given in Figure 2.7. The specific location is given in Figure 2.8.

FIGURE 2.1 LOCATION MAP

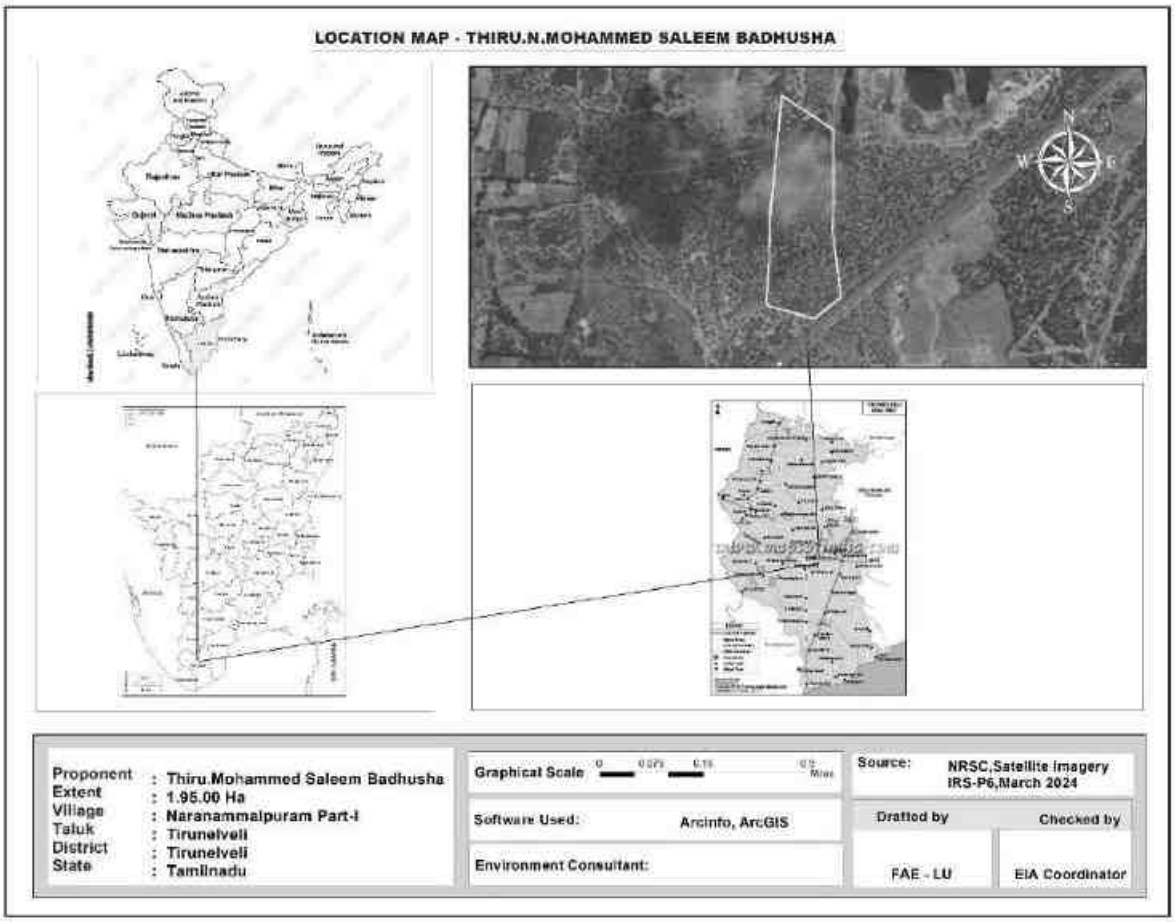
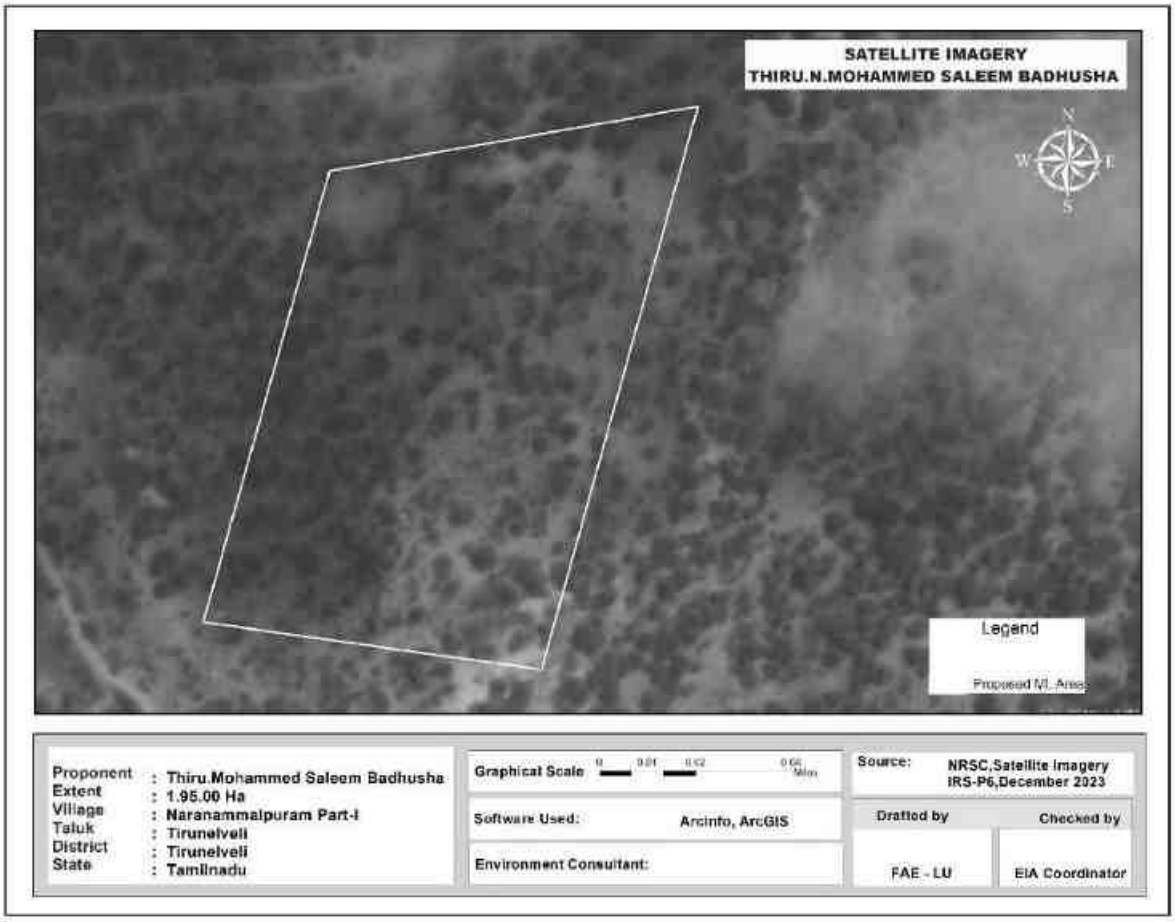


FIGURE 2.2 MAP OF THE PROJECT AREA



As shown in the map above, the project is approachable from Gangaikondan – Thalaiyuthu road on Northwestern side of the area. The National Highway (NH-44) Salem – Kanniyakumari is about 900 m on western side of the area. The State Highway (SH-75) Tirunelveli – Ottapidaram is about 6.8 Km on southeastern side of the area

2.4 PROJECT BOUNDARY AND PROJECT SITE LAYOUT:

The lease area has 4 corners and the latitude and longitude values are given below.

Table 2.2 Co-Ordinates of the Project Site			
Corners	Co-Ordinates		Distance between the corners
	Latitude	Longitude	
1	08°48'16.00"N	77°44'57.62"E	1-2 =148.6m
2	08°48'20.68"N	77°44'58.84"E	2-3=130.2m
3	08°48'21.48"N	77°45'03.02"E	3-4=191.6m
4	08°48'15.51"N	77°45'01.21"E	4-1=110.8m

FIGURE 2.3 GOOGLE IMAGE SHOWING PROJECT SITE

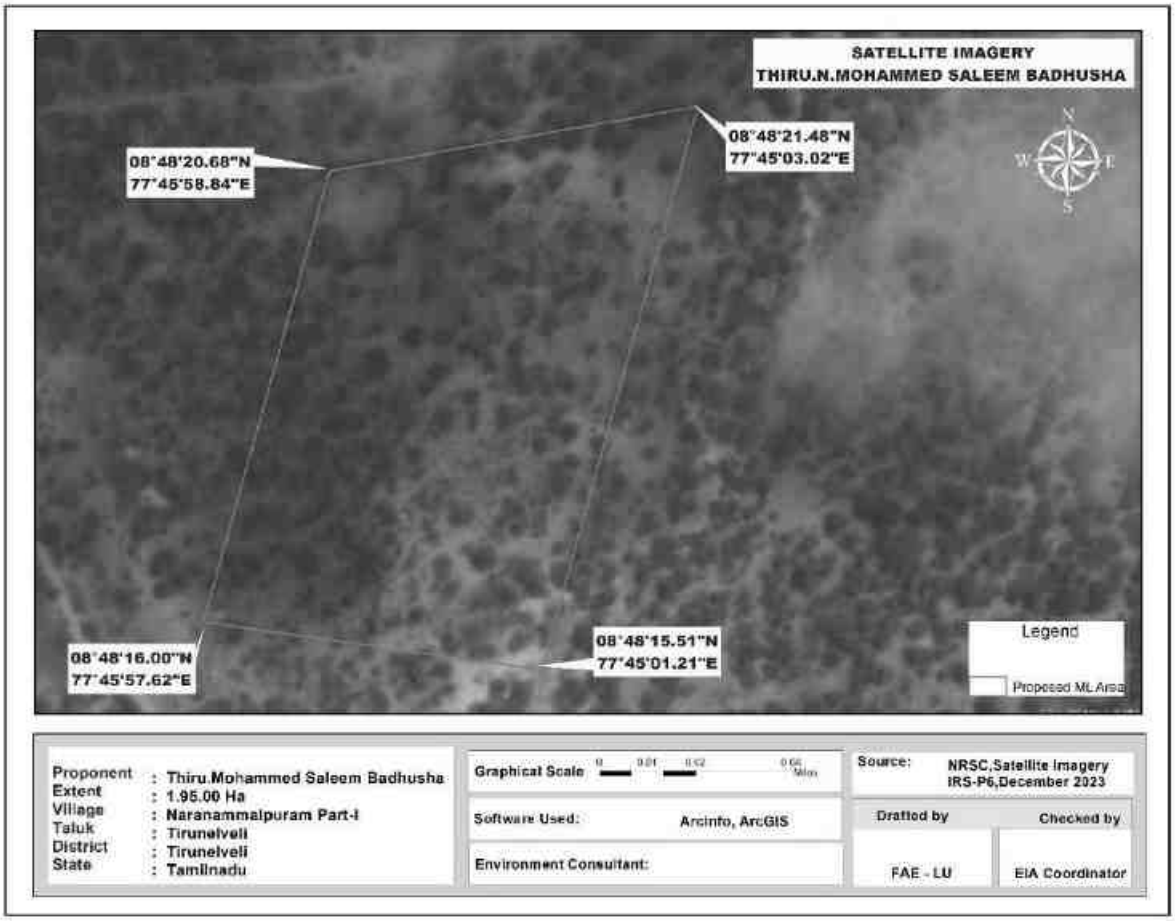


FIGURE 2.4 SURFACE PLAN OF THE PROJECT AREA

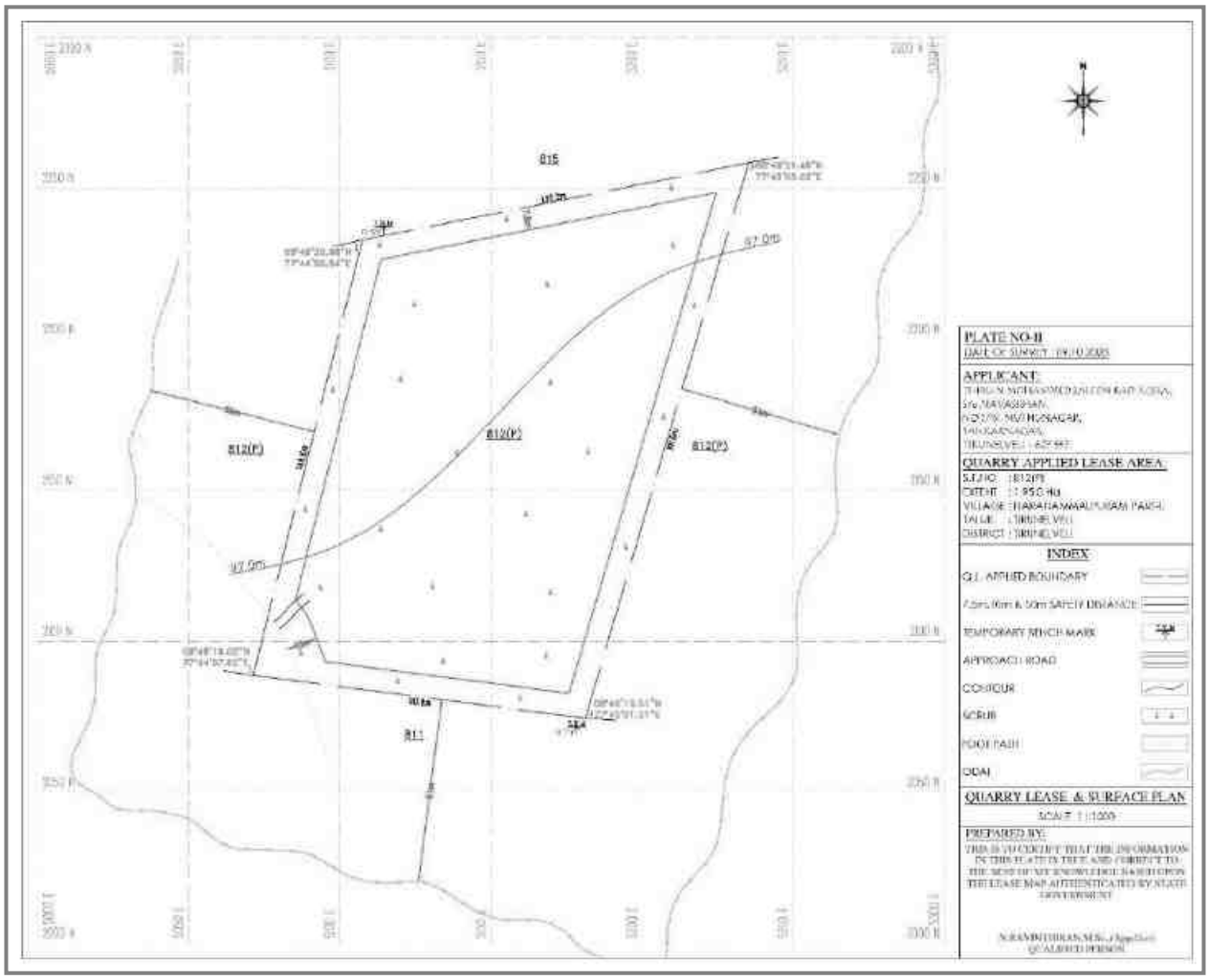


FIGURE 2.5 SITE PHOTOS

Site Connectivity

Sr.No	Salient Features	Description
1	Nearest Roadway	• There is an existing road from the area leads to Palamadai village road on Southeast side of the area. • The Nearest Railway line is Tirunelveli - Thoothukudi line which is about 288 m on southeastern side of the area. • The National Highway (NH-44) Salem – Kanniyakumari is about 900 m on North western side of the area. • The State Highway (SH-75) Tirunelveli – Ottapidaramis about 6.8 Km on southeastern side of the area.
2	Nearest Village	Pappankulam: 1.4km - NE Palamadai: 1.3km - SE Thathanuthu0.6km – SW
3	Nearest Railway	Tirunelveli - Thoothukudi line which is about 715m on southeastern side of the area.
4	Nearest Airport	Tuticorin – 32.0km – E

2.5 GEOLOGY AND TOPOGRAPHY

a. Topography

The mine lease area of 1.95.0 Ha is covered in the Survey of India Toposheet 58-H/13 and is bounded by Latitude 08°48'15.51"N to 08°48'21.48"N and Longitude: 77°44'57.62"E to 77°45'03.02"E. No major river is found nearby the lease applied area. Water table is found at a depth of 62m. Temperature of the area is reported to be 180C to a maximum of 420C during summer. Rainfall of this area is about 800mm 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.

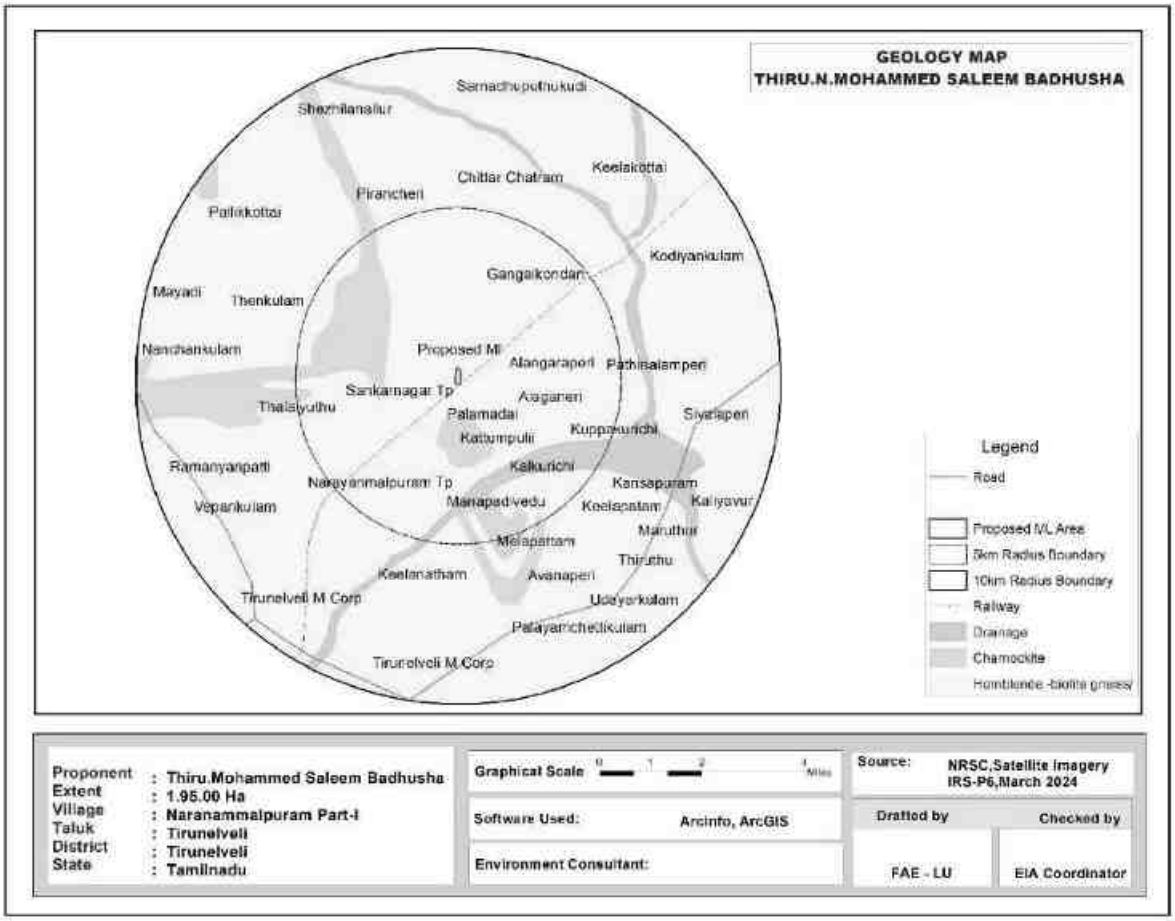
The elevation of the proposed quarry is 65m (maximum) from MSL. There is no forest land in the mine lease area. The project site is dry land which is not fit for any cropping.

b. Regional Geology

Geologically Tirunelveli 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. The famous Sittampundi Anorthosite Complex which is known for its complex geology and occurrences of Platinum Group of Elements is situated in this district. Hornblende Biotite Gneisses are the oldest rocks in four taluks 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 metres to ten metres and the length extends to few kilometres. 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. Thin veneer of alluvium is found along the course of the Cauvery and Thirumanimuthar. However, alluvium of few meters thickness is found near the junction of river Thirumanimuthar and river Cauvery. 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 2.6 REGIONAL EOLOGY MAP - 10 Km RADIUS FROM PROJECT AREA



c. Local Geology

d. Geological Resources

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 $N45^0E - S45^0W$ with dipping towards $SE60^0$.

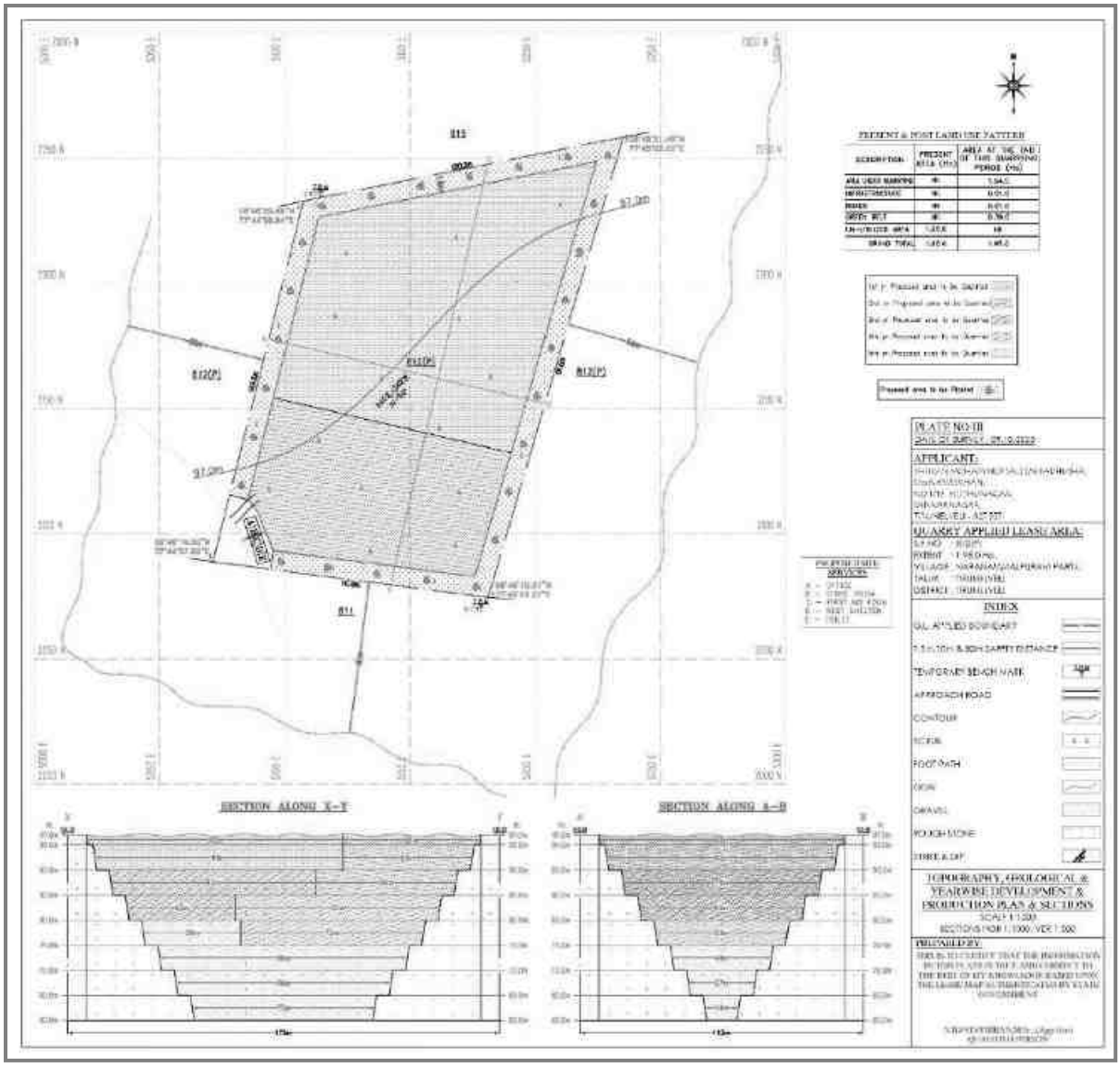
The general geological succession of the area is given as under.

AGE		**ROCK TYPE**
Recent	-	Gravellysoil
	Unconformity	
Archaean	-	Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss

Table 2.3 Geological resources in the lease area								
Section	Topography	Bench	Length (m)	Width (m)	Dept (m)	Volume (m^3)	Gravel Formation (m^3)	Geological Resources of Rough stone (m^3)
XY-AB	Below Ground level	I	172	113	2	38872	38872	
		II	172	113	35	680260		680260
						Total	**38872**	**680260**

Available Geological Resources of Rough stone 680260 m3 and Gravel 38872 m3.

FIGURE - 2.7 GEOLOGY MAP OF PROJECT AREA
FIGURE - 2.8 GEOLOGY CROSS SECTION



2.6 AVAILABLE MINEABLE RESERVES

Mineable reserve is getting restricted due to the formation of benches, leaving the statutory safety distance in the inner boundary, mineral lock up in the benches itself, ultimate depth of mining, bench slope adopted etc. So, the mineable reserve is estimated after reducing the rough stone blocked in the safety distance, benches and existing pit. The Rough stone reserves are given below.

Table 2.4 Mineable Resources in the Lease Area								
Section	**Topography**	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Volume m^3**	**Gravel in m^3**	**Mineable Reserve of Rough stone in m^3**
XY-AB	Blow ground level	I	157	98	2	30772	30772	
		II	151	92	5	69460		69460
		III	138	79	5	54510		54510
		IV	125	66	5	41250		41250
		V	112	53	5	29680		29680
		VI	99	40	5	19800		19800
		VII	86	27	5	11610		11610
		VIII	73	14	5	5110		5110
Total							**30772**	**2,31,420**

2.7 NEED FOR THE PROJECT

The construction industry is growing at a very faster rate so there is an increasing demand for Rough Stone. Also, in the international market there is a good demand for Indian cut and raw stones. Thus, this project will contribute to the demand of rough stone and provide employment opportunities to the nearby villages.

2.8 SIZE OR MAGNITUDE OF OPERATION

The proposed production is Rough stone 2,31,420m3 of Rough stone 30,772m3 for the period of five years by Opencast Semi Mechanized mining method.

2.9 LAND USE OF THE PROJECT AREA

The proposed Mine Lease area is owned patta land and the Land use pattern of the project site is given below Table 2.5.

Table 2.5 Current Land Use Pattern			
S. No.	**Land Use**	**Present Area (Hect)**	**Area in use during the quarrying period (Hect)**
1	Quarrying Pit	Nil	1.54.0
2	Infrastructure	Nil	0.01.0
3	Roads	Nil	0.01.0
4	Green Belt	Nil	0.39.0
5	Unutilized	1.95.0	Nil
	Total	**1.95.0**	**1.95.0**

2.10 LAND USE AT MINE CLOSURE STAGE

Table 2.6 Land Use at Mine Closure Stage		
S. No.	**Land Use**	**Area in use during the quarrying period (Hect)**
1	Area left for water body	1.54.0
2	Green Belt	0.39.0
3	Remaining area	0.02.0
Total		**1.95.0**

2.11 METHOD OFMINING

Opencast Semi-mechanized method of semi mechanized mining with 5.0 m height 5.0m width and overall, 80^0 slope of the bench. It is proposed to excavate, 2,31,420 m^3 of Rough Stone and 30,772 m3 of Gravel for Five years. No wastage is envisaged as the entire material available is Rough Stone and Gravel only.

2.12 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.

2.13 BENCH GEOMETRY

Height (max) and Width (max) of the benches will be maintained as 5m each and overall slope angle will be at around 80^0 with the horizontal.

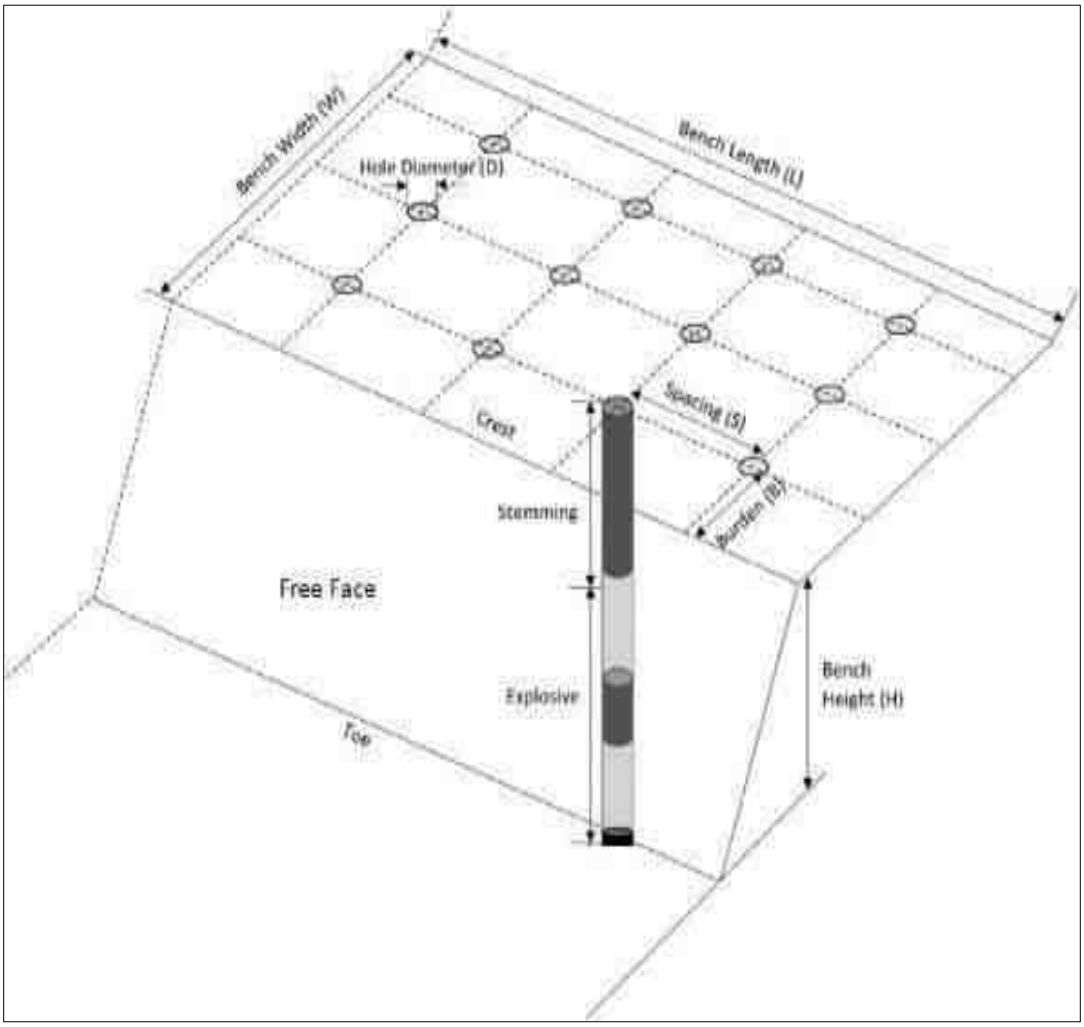
2.14 DEVELOPMENT OF MINING FACES

The proposed mining method is Opencast Semi 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 March 2025.

2.15 DRILLING & BLASTING

Drilling will be done upto maximum depth of 37m BGL (BGL and 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 3 Tonnes per Kg of explosives. Small dia 32 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 2.1.

FIGURE 2.9 BLASTING PATTERN

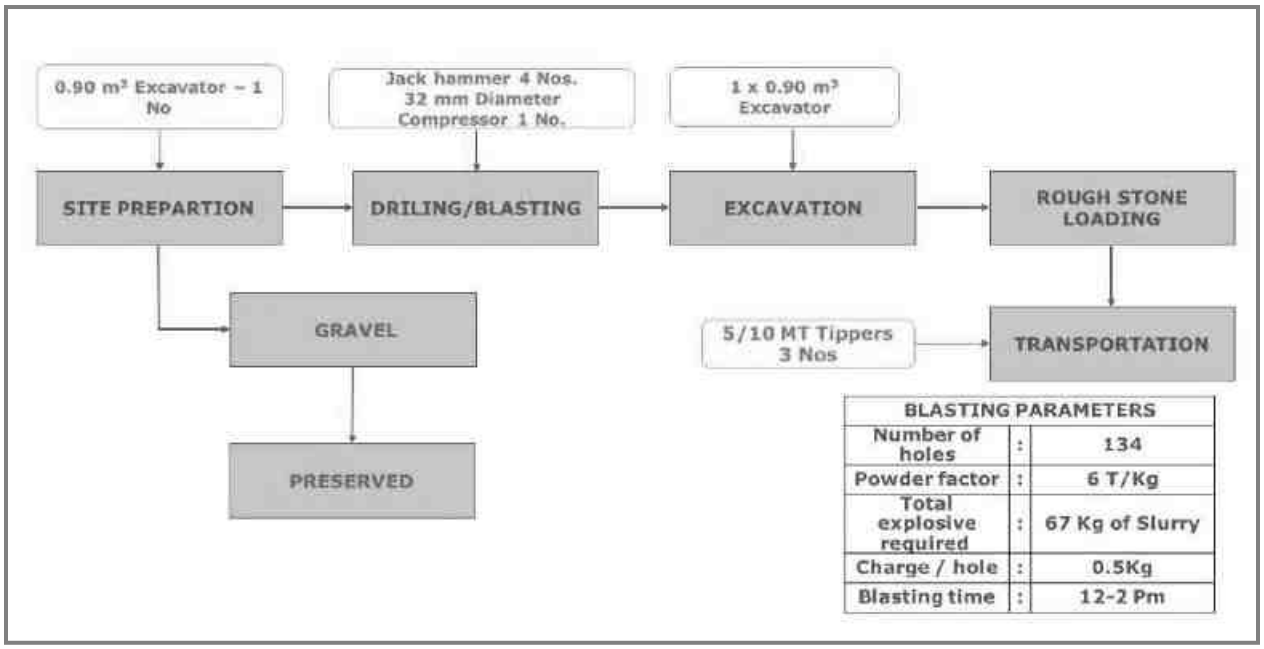


2.16 LOADING& TRANSPORTATION OF ROUGH STONE

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

2.17 PROCESS FLOW CHART FOR MINING OF DECORATIVE STONE

FIGURE 2.10 FLOW CHART OF THE QUARRY OPERATION



2.18 LAYOUT

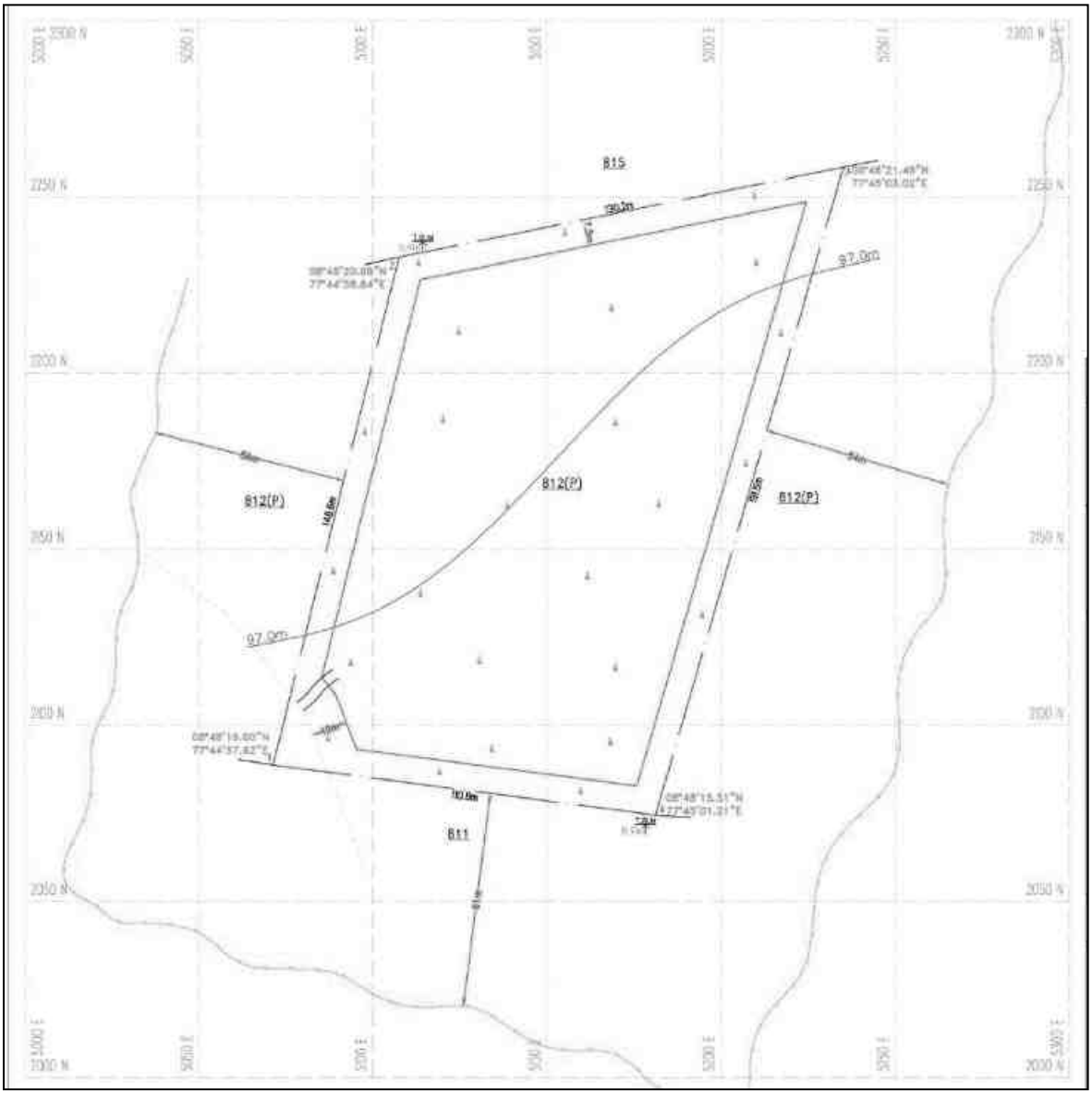
Layout of the proposed quarry working has been shown in development Plan/Sections (Figure 2.11) Coloring has been done distinctly for easy identification of year wise excavation programme.

2.19 MACHINERY DETAILS

Table 2.7 Machineries involved in the project

S.No.	Particulars	Size capacity	Motive Power	Nos
1.	Jack hammer (32mm dia hole)	1.2m - 6.0m	Compressed air	5
2.	Compressor	1 psi	Diesel drive	4
3.	Excavator with Bucket and Rock Breaker	0.90 m^3	Diesel drive	2
4.	Tippers	5/10 Ts	Diesel drive	3

FIGURE 2.11 PROJECT LAYOUT PLAN AND SECTIONS



2.20 PROPOSED SCHEDULE FOR IMPLEMENTATION

Year wise Production of Rough stone and Gravel 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 2.10.

Table 2.8 Summary of production For 5 Years

Year	Section	Topography	Bench	Length (m)	Width (m)	Depth (m)	Volume m^3	Gravel in m^3	Reserve of Rough stone in m^3
I	XY-AB	BGL	I	102	98	2	19992	19992	
			II	99	92	5	45540		45540
Total								**19992**	**45540**
II	XY-AB	BGL	I	55	98	2	10780	10780	
			II	52	92	5	23920		23920
			III	56	79	5	22120		22120
Total								**10780**	**46040**
III	XY-AB	BGL	III	82	79	5	32390		32390
			IV	43	66	5	14190		14190
									46580
IV	XY-AB	BGL	IV	82	66	5	27060		27060
			V	73	53	5	19345		19345
Total									**46405**
V	XY-AB	BGL	V	39	53	5	10335		10335
			VI	99	40	5	19800		19800
			VII	86	27	5	11610		11610
			VIII	73	14	5	5110		5110
Total									**46855**
Grand Total								**30772**	**231420**

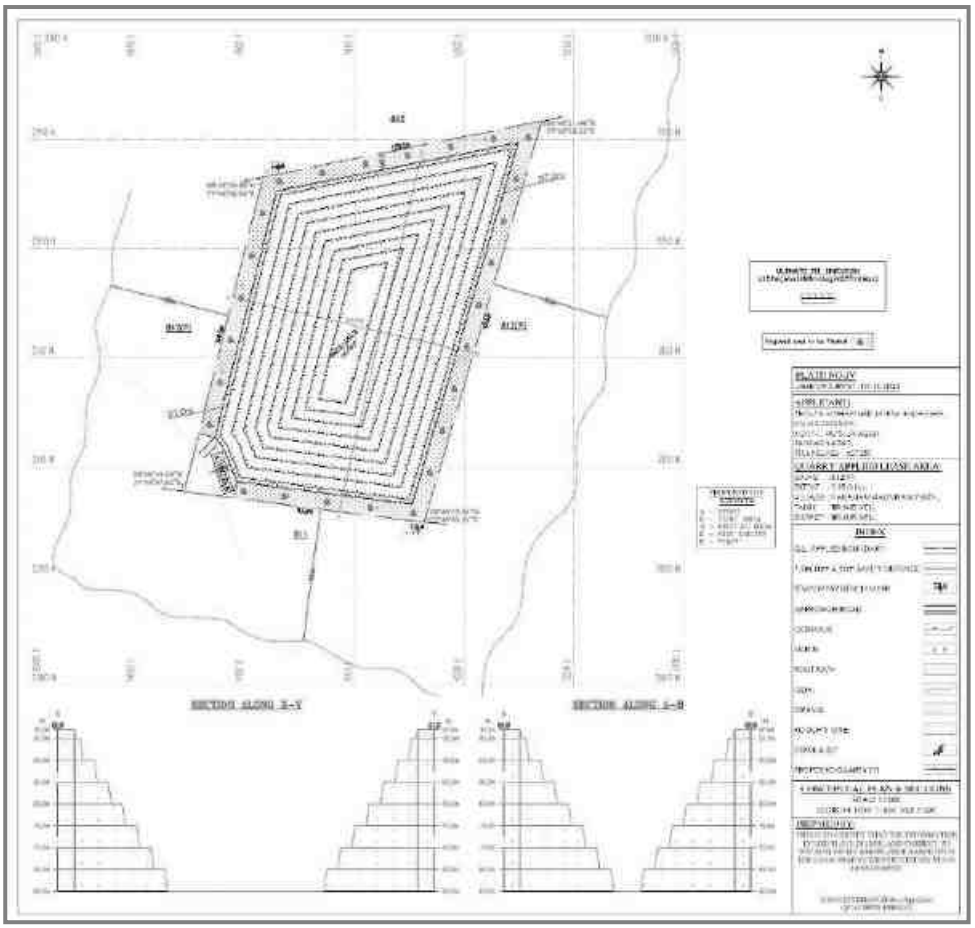
2.21 CONCEPTUAL PERIOD

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 2.14. Ultimate extent and size of the quarry at the conceptual stage is given below as Table 2.11 and Land Use pattern is given as Table 2.12. The conceptual plan is given as Figure 2.14.

TABLE 2.9 Ultimate Pit Dimension			
Pit No.	**Length (max) (m)**	**Width (Avg) (m)**	**Depth (max) (m)**
I	157	98	37

TABLE 2.10 Land Use at Mine Closure Stage		
S. No.	**Land Use**	**Area in use during the quarrying period (Ha)**
1	Area left for water body	1.54.0
2	Green Belt	0.39.0
3	Remaining area	0.02.0
Total		**1.95.0**

FIGURE 2.12 CONCEPTUAL PLAN



Green belt development plan is proposed for the 5 year period.**S.No.**	**Year**	**Species**	**No. of trees**	**Spacing**	**Survival**
1	I	Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca	500	3m x 3m	87%
2	II		-		
3	III		-		
4	IV		-		
5	V		-		
Total			**500**		

2.22 TECHNOLOGY AND PROCESS DESCRIPTION

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 80° slope using conventional opencast semi-Mechanized method.
- The quarry operation involves splitting of rock mass of considerable volume from the parent rock by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy customers.
- Occasionally hydraulic excavator is attached with rock breakers for fragmentation to avoid secondary blasting.

2.23 PROJECT REQUIREMENTS

TABLE 2.11 Project Requirements

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 4 KLD which will be procured from the outside agencies. Out of 4 KLD, drinking water requirement is 2.0 KLD, Green belt development is 1.0 KLD and for dust suppression is 1.0 KLD.
2	Power requirement	No electricity is needed for mining operations.
3	Manpower requirement	Total Manpower 27 Nos. Permanent employee – 15, Temporary employee – 12
4	Financial requirement	EMP cost will be Rs.36.46 Lakhs and 152.84 Lakhs have been proposed as EMP capital costs and recurring costs, respectively, for the period of 5 years.
5	Funds for Socio economic development	INR 8.0 Lakhs is allocated.

2.24 Project Cost

The budget of the project is given below.

TABLE 2.12 Budget of the Project

S.No.	Details	Cost (in INR)
FIXED ASSET COST		
1	Land cost	39,63,000
2	First aid room and accessories	1,00,000
3	Labour Shed	1,00,000
4	Sanitary Facility	1,00,000
TOTAL		**42,63,000**
OPERATIONAL COST		
1	Machineries	80,00,000
2	Fencing cost	2,50,000
TOTAL		**82,50,000**
EMP COST		
1	Air Environment	9,85,000
2	Noise Environment	50,000
3	Water Environment	2,20,000
4	Implementation of EC, Mining Plan & DGMS Condition	11,91,000
5	GREEN BELT	2,50,000
6	Additional Key EMP Expenses	9,50,000
TOTAL		36,46,000/-

CHAPTER 3
DESCRIPTION OF THE ENVIRONMENT

3.1. DESCRIPTION OF THE STUDY AREA

The project area is located in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State over an extent of 1.95.0 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 Summer Season i.e. February 2024 to April 2024 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.

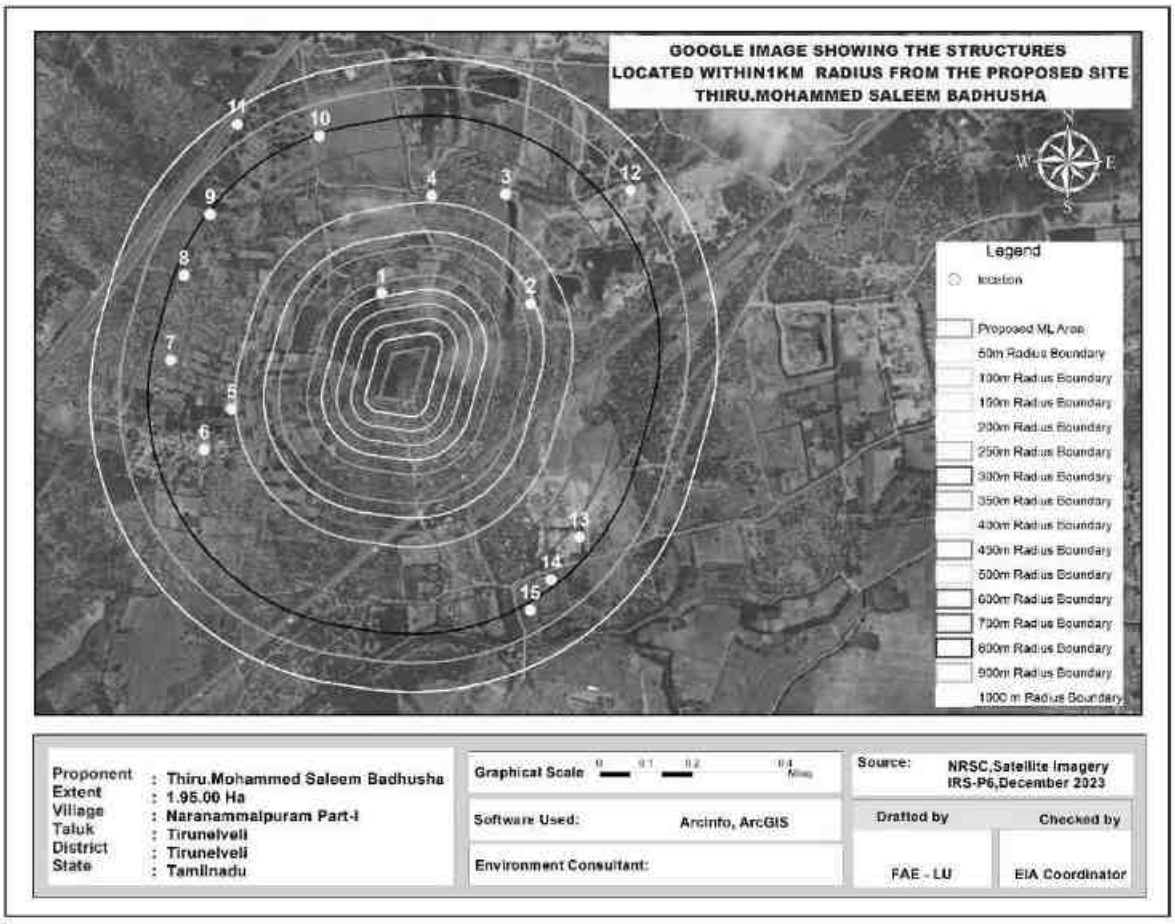
The components included are:

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

3.2. ENUMERATION OF THE STRUCTURES LOCATED WITHIN 300 M RADIUS FROM THE PROPOSED QUARRY SITE

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

FIG 3.1 GOOGLE MAP SHOWING 50M INTERVAL FOR 300M RADIUS FROM THE LEASE AREA



3.3. DESCRIPTION OF ENVIRONMENT IN 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 15km radius
2	Areas which are important or sensitive for ecological reasons	
A	Wetlands, water courses or other water bodies,	Water bodies / Distance / Direction: Seasonal Odai – 54 m – E Seasonal Odai – 56 m – W Odai – 515 m – N Tirunelveli Canal – 750 – S Thamirabarani River – 3.2km – SE Chittar River – 5.9km – E Rajavallipuram kulam – 780km – S Kalkurichi Kulam – 4.2km – E
B	Coastal zone, biospheres,	Nil within 10km radius
C	Mountains, forests	Gangaikondan R F – 1.75km (NE), Thalaiyuthu R F – 2.1km (W), Mel Pattam R F – 3.9km (SE), Sivalaperi R F – 9.4km (E)
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	Palamadai – 1.2 km in SE
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Palamadai – 1.2 km in 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 3.2 FEATURES OF ENVIRONMENT FOR 10KM RADIUS FROM THE PROPOSED LEASE AREA

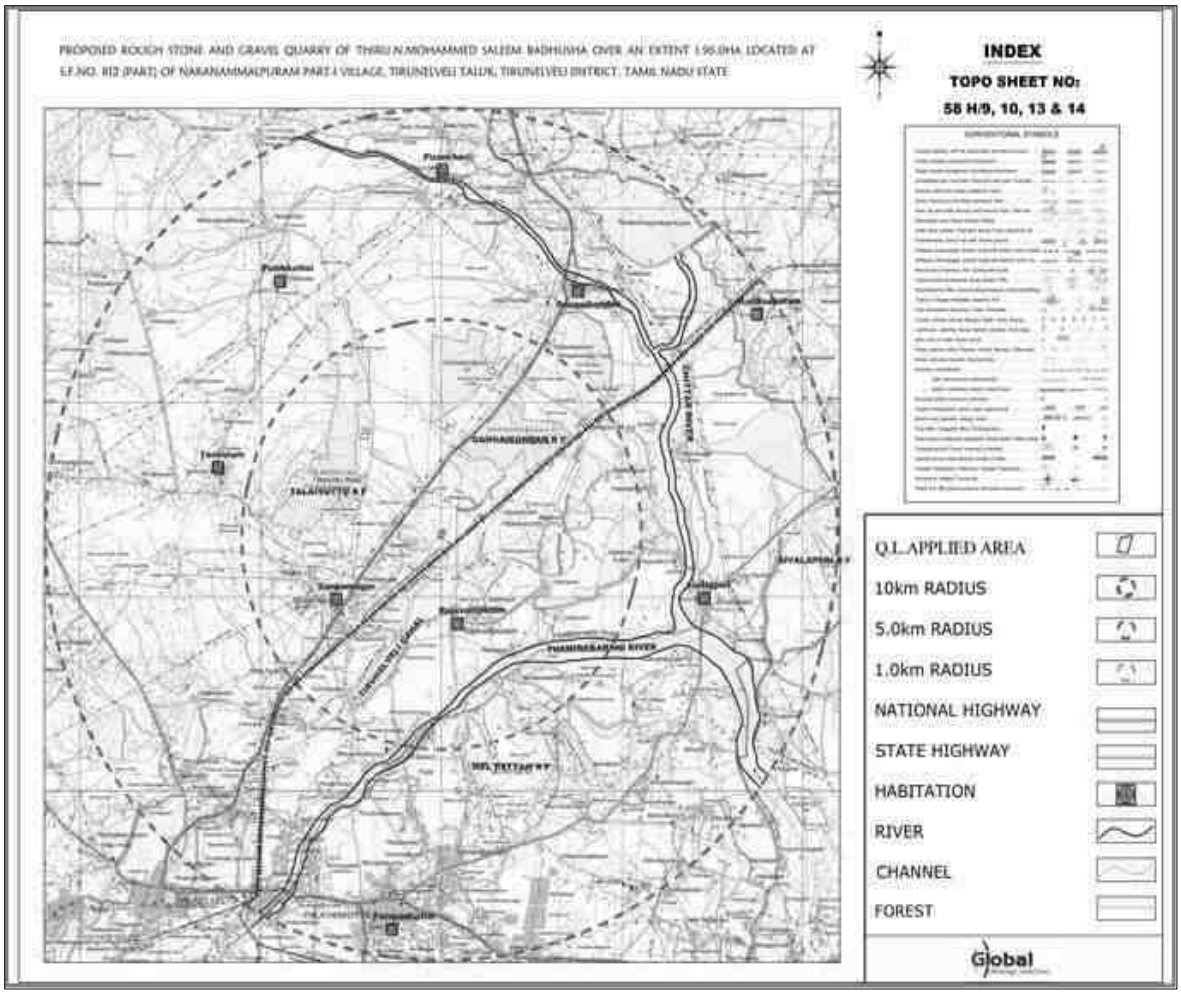
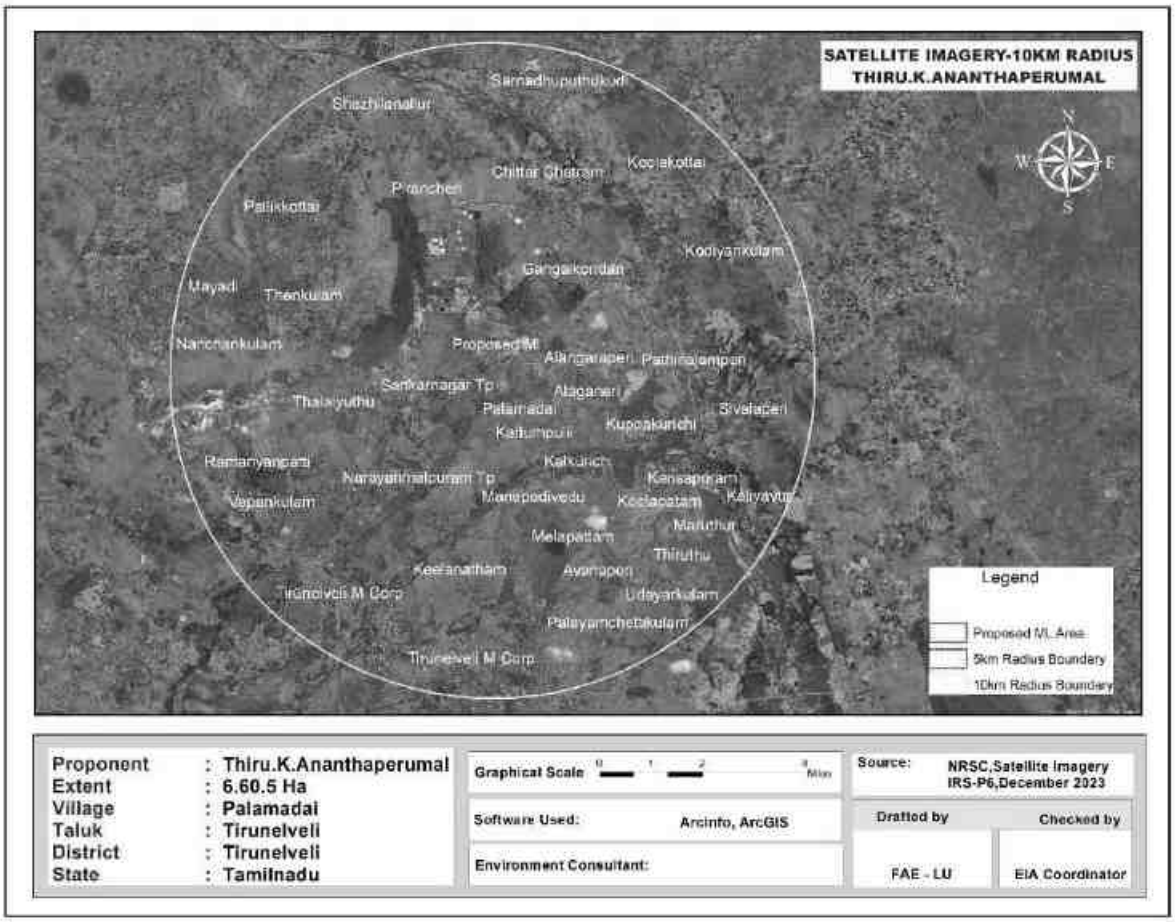


FIGURE - 3.2.A SATELLITE MAP OF THE PROJECT AREA (10 KM RADIUS)



3.4. METEOROLOGICAL ENVIRONMENT

3.4.1 Meteorological conditions prevailing in the buffer zone is given below

Climate

The climate of Tirunelveli District is tropical. The period from the weather is pleasant during the period from November to January. The normal temperature varies between 24.4°C and 27.1°C mean minimum, whereas the hottest climate experiences from March to May with mercury reaching 38.5°C at the highest.

Rainfall

Tirunelveli 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. Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons. The excess rainfall is 192% (Source: Mausam.imd.gov.in)

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	
1251.3	799.2	1071.9	1034.5	1592.2	985

Relative Humidity

The relative humidity, in general around the year is between 55 and 65% in most parts of the district, except during the north-east monsoon season when it is over 65%. 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 3.2.

FIG 3.3 SEISMIC MAP OF INDIA

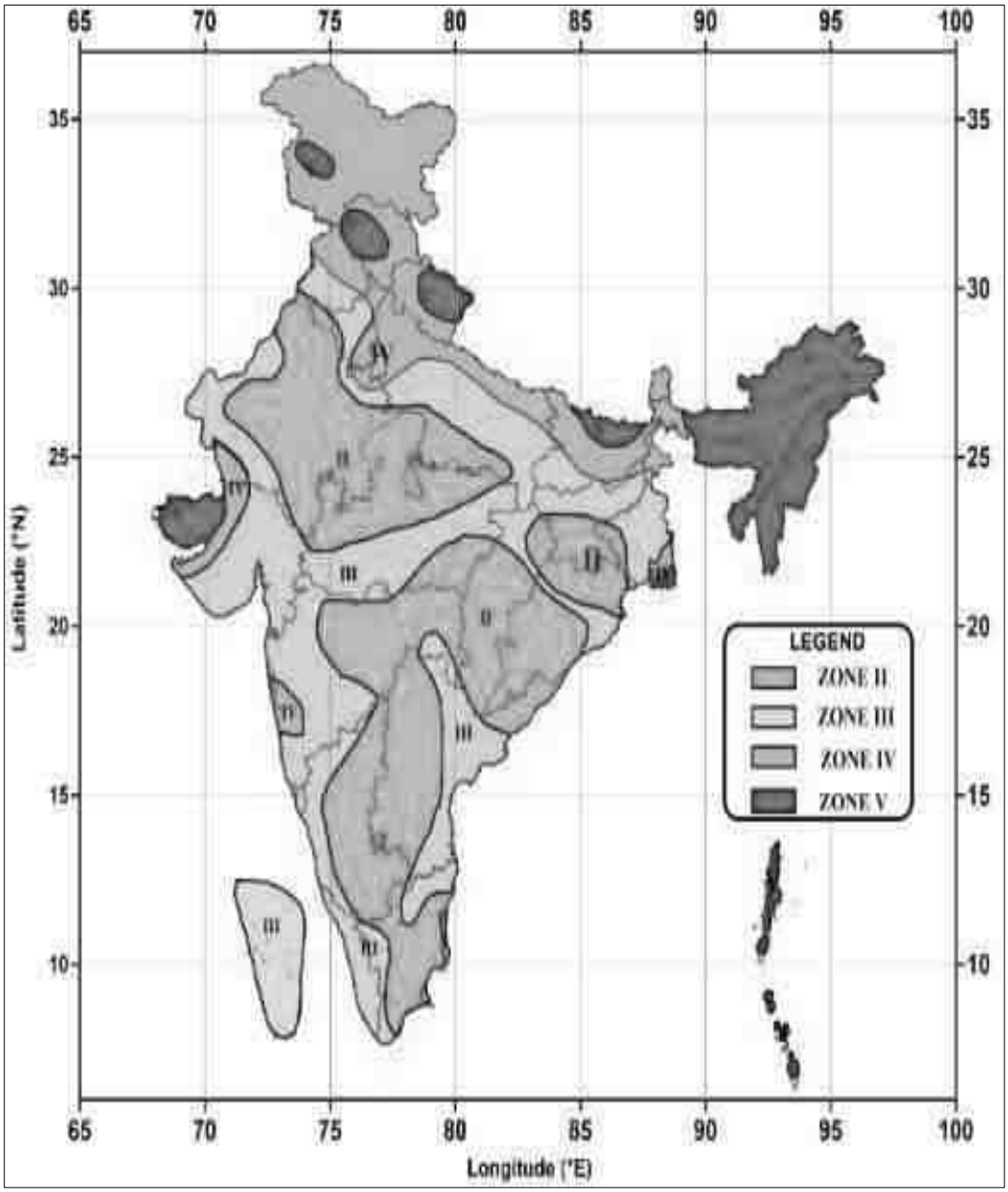
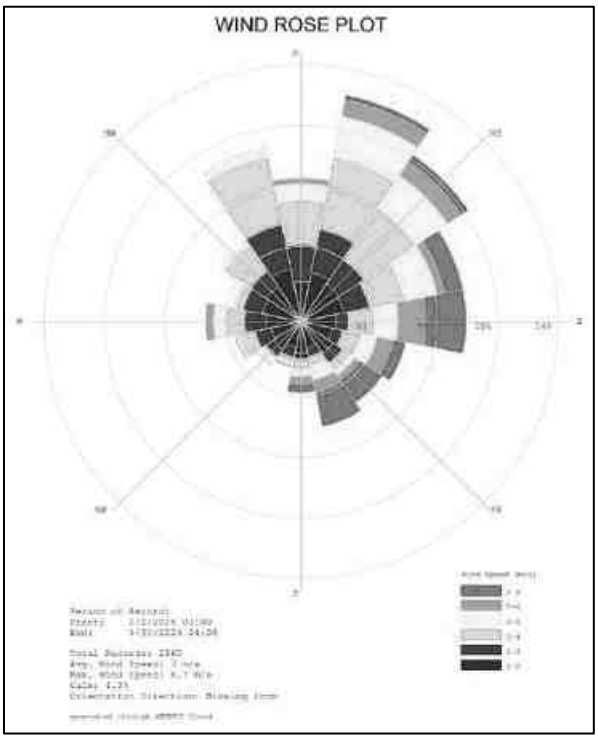
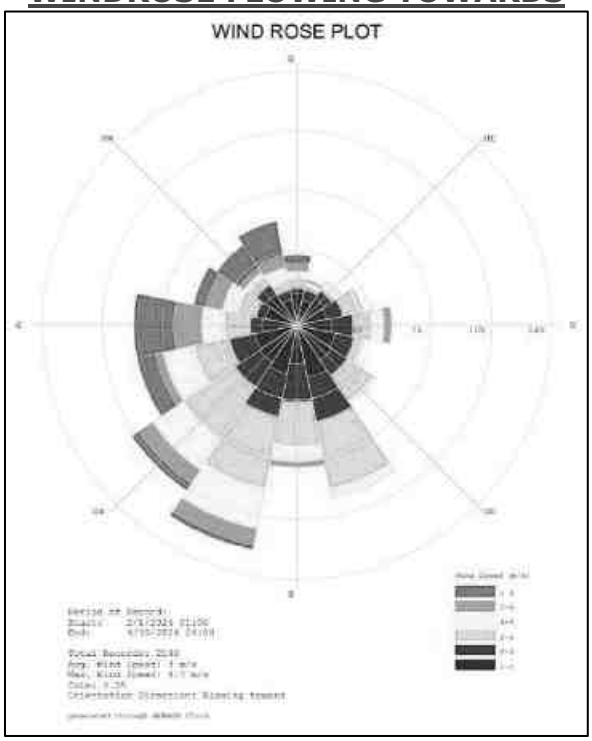


FIG 3.4 WIND ROSE PLOT DURING OCT TO DEC 2023
WINDROSE FLOWING FROM



WINDROSE FLOWING TOWARDS



Meteorological data of the project area

The meteorological data collected in the study area from February 2023 to April 2024 which includes Temperature, Wind speed, Wind direction and Relative humidity. The predominant wind blow from West. The temperature of the area is reported to be 18^0C to a maximum of 42^0C during summer.

3.5 AMBIENT AIR MONITORING DATA

Ambient air quality monitoring has been carried out in 6 locations. One in the core zone and remaining four 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.

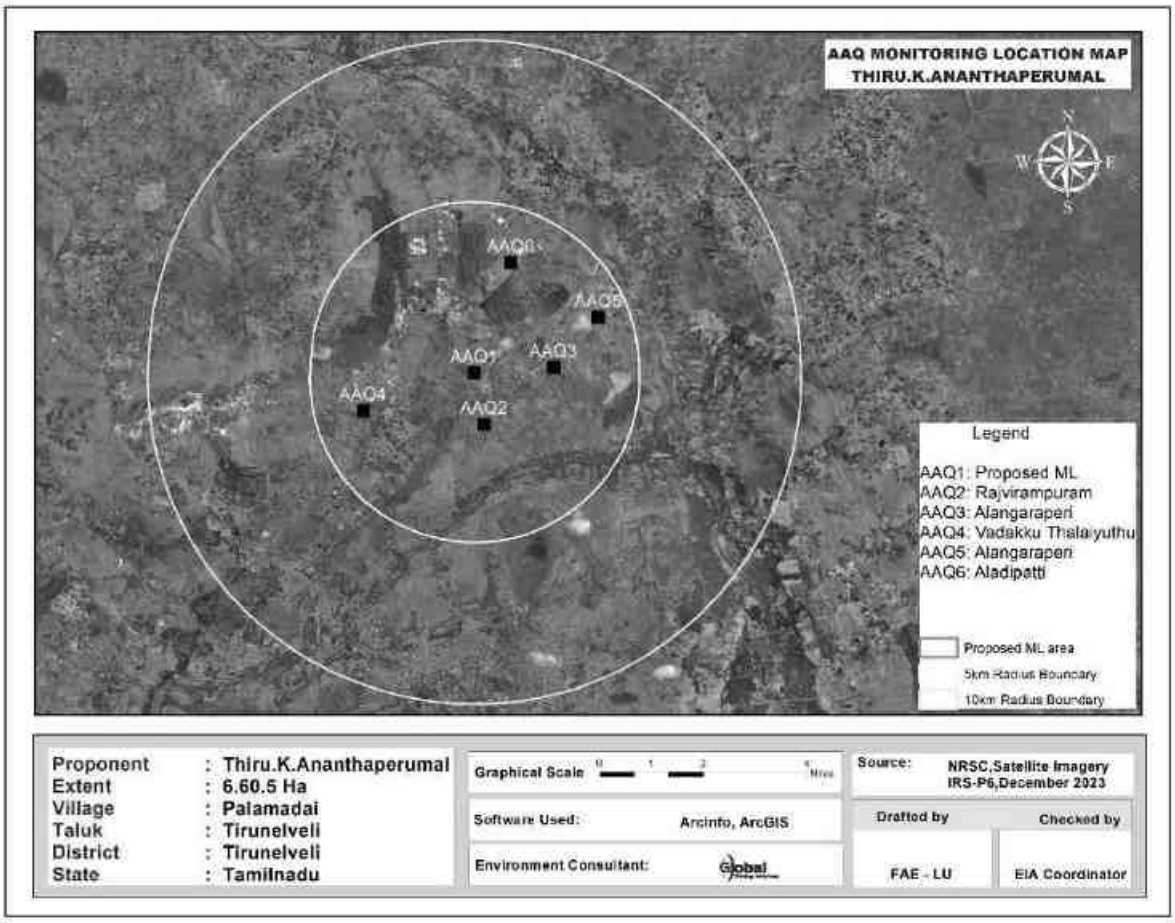
The levels of Respirable Particulate Matter (PM10), Fine Particulates (PM2.5), Sulphur Dioxide (SO2) and Oxides of Nitrogen (NOx) were monitored for establishing the baseline status. PM10 were sampled with the help of Respirable Dust Samplers on filter papers and SO2 & NOx were absorbed in the respective absorption media in the impingers attached to RD samplers and analyzed Spectro-photometrically. PM2.5 was monitored with the help of Fine Particulate Samplers. The monitoring locations for ambient air study are given in Table – 3.3 and Figure 3.5 below.

Table 3.3: Details Of Ambient Air Quality Monitoring Locations

S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ 1	Project site	Core Zone	08°48'10.57"N 77°45'06.01"E
2	AAQ 2	Rajvirampuram	1.61 Km, S	08°47'26.42"N 77°45'17.36"E
3	AAQ 3	Alangaraperi	2.45 Km, E	08°48'28.3"N 77°4'28.1"E

Table 3.3: Details Of Ambient Air Quality Monitoring Locations				
S. No.	**Station Code**	**Locations**	**Distance & Direction**	**Coordinates**
4	AAQ 4	Vadakku Thalaiyuthu	3.6 Km, W	08°47'41.46"N 77°43'16.12"E
5	AAQ 5	Pathinalamperi	4.2 Km, NE	08°49'13.62"N 77°47'13.33"E
6	AAQ6	Aladipatti	3.6 Km, N	08°50'9.62"N 77°45'46.25"E

FIG 3.5 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 $\mu g/m^3$.

Table.3.4 Results of Air sampling Analysis in 6 locations

Station ID	Min	Max	Avg.
Particulate matter PM-$_{2.5}$ (µg/m^3)			
AAQ-1	23.8	29.8	26.8
AAQ-2	16.6	23.1	19.85
AAQ-3	20.7	26.5	21.95
AAQ-4	23.1	31.5	27.3
AAQ-5	21.3	25.8	23.55
AAQ-6	19.4	25.3	22.35
CPCB NAAQS 2009 for PM $_{2.5}$ - 60 µg/m^3			
Particulate matter PM-$_{10}$ (µg/m^3)			
AAQ-1	57.3	67.2	62.25
AAQ-2	36.1	49.9	43
AAQ-3	46.3	56.7	51.5
AAQ-4	49.2	67.1	58.5
AAQ-5	44.5	53.3	48.9
AAQ-6	42.5	55.7	49.1
CPCB NAAQS 2009 for PM $_{10}$ - 100 µg/m^3			
Sulphur Di-oxide as SO_2 (µg/m^3)			
AAQ-1	3.5	4.9	4.2
AAQ-2	3.1	5.6	4.35
AAQ-3	3.2	4.9	4.05
AAQ-4	5.5	10.4	7.95
AAQ-5	3.1	5.4	4.25
AAQ-6	3.1	4.4	3.75
CPCB NAAQS 2009 for SO_2 – 80 µg/m^3			
Oxide of Nitrogen as NO_2 (µg/m^3)			
AAQ-1	7.2	9.5	8.35
AAQ-2	6.2	8.5	7.35
AAQ-3	6.7	8.9	7.8
AAQ-4	8.1	12.7	10.4
AAQ-5	6.9	9.2	8.05
AAQ-6	7.1	8.7	7.9
CPCB NAAQS 2009 for NO_2 – 80 µg/m^3			

The results are summarized in graph and given as below Fig. 3.5

FIG 3.6 AMBIENT AIR QUALITY DATA A1 - MINE LEASE AREA

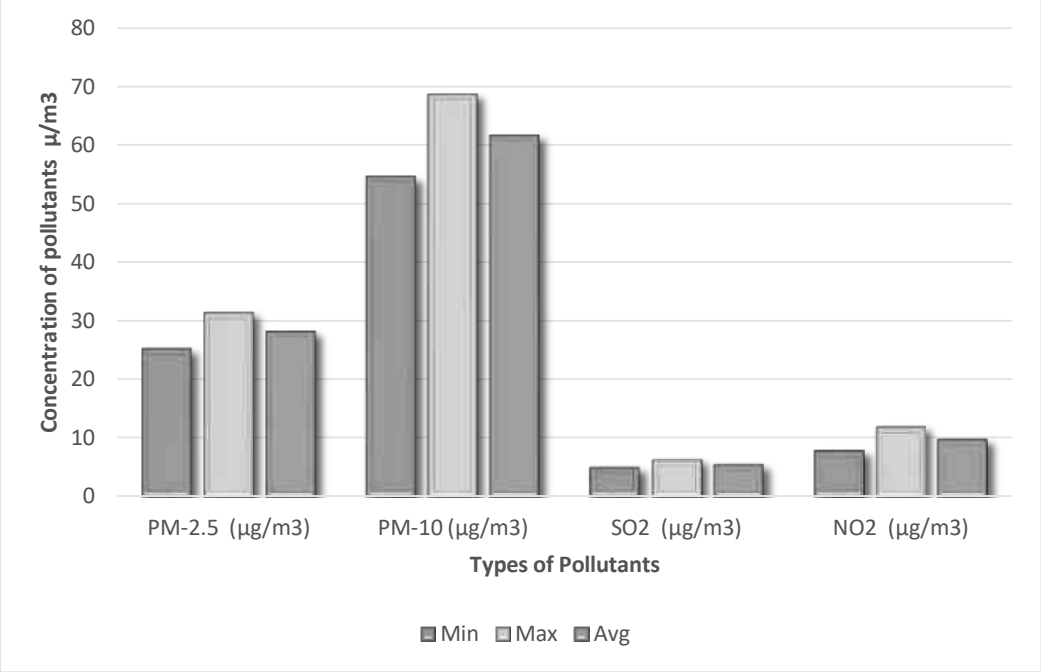


FIG 3.7 AMBIENT AIR QUALITY DATA A2 - RAJVIRAMPURAM VILLAGE

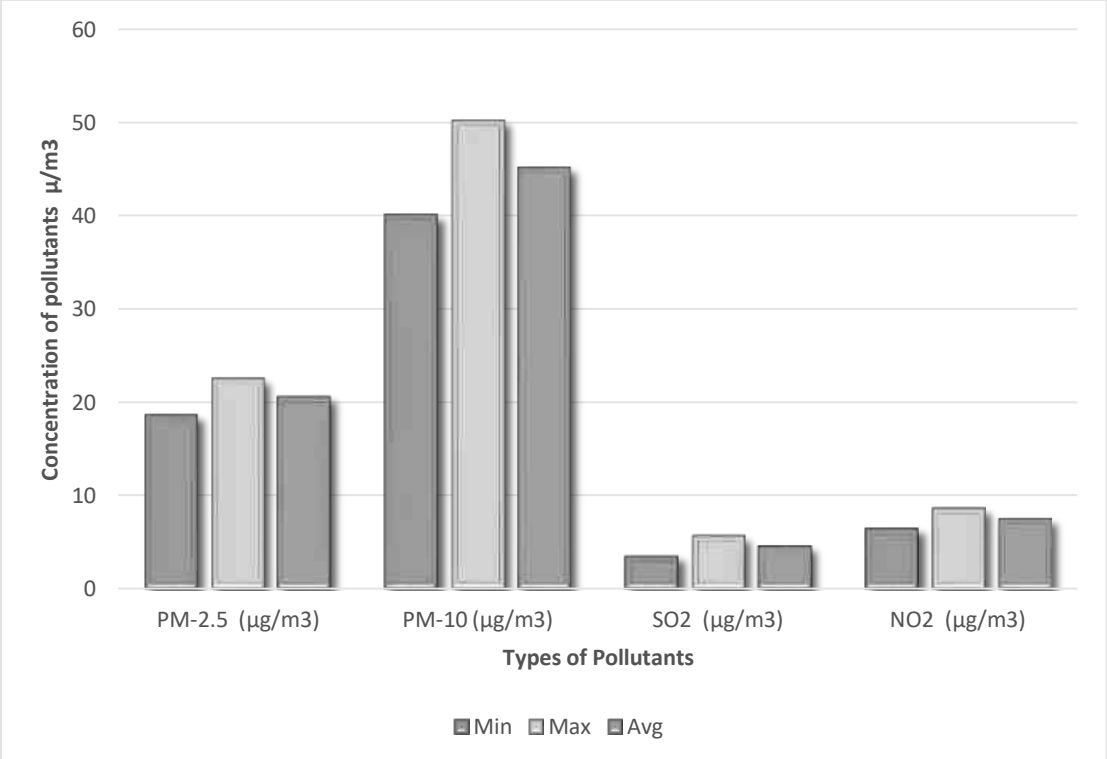


FIG 3.8 AMBIENT AIR QUALITY DATA A3 - ALANGARAPERI VILLAGE

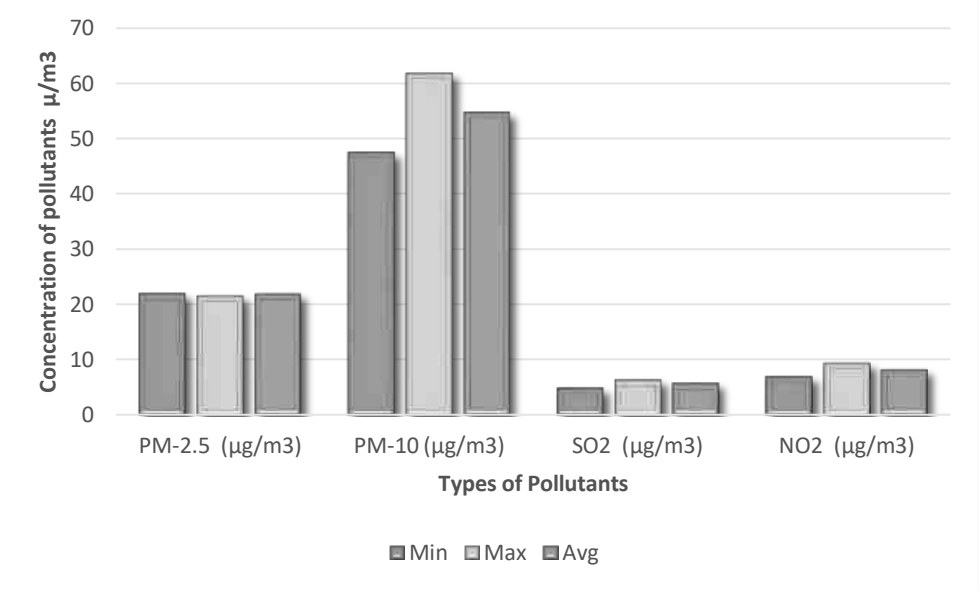


FIG 3.9 AAQ DATA A4 - VADAKKU THALAIYUTHU VILLAGE

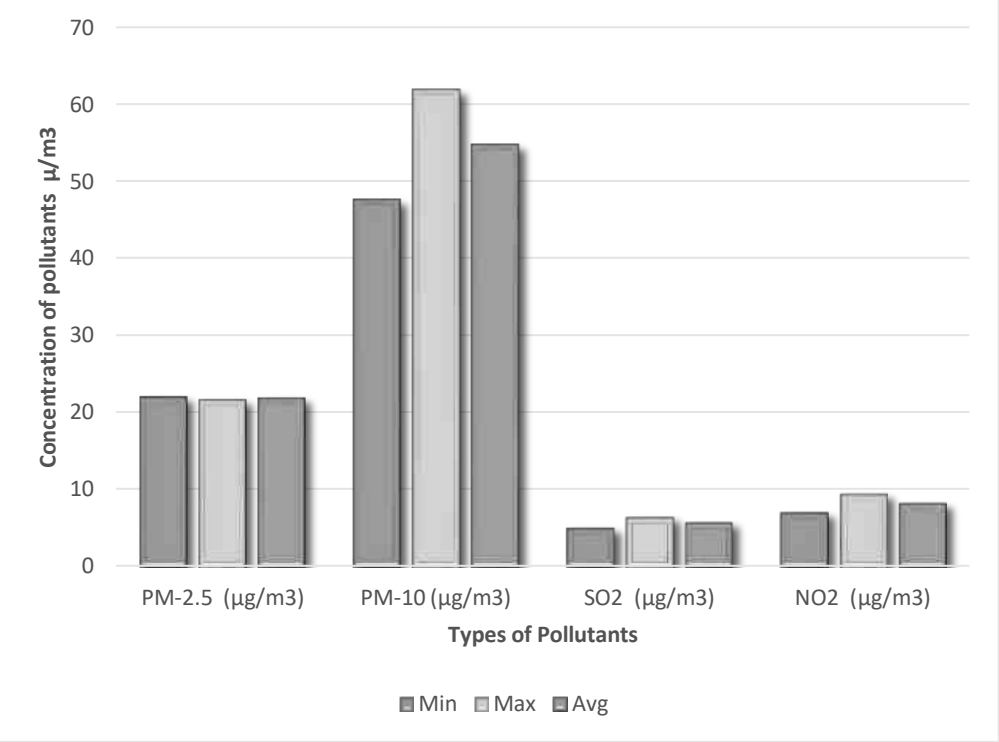


FIG 3.10 AMBIENT AIR QUALITY DATA A5 - PATHINALAMPERI VILLAGE

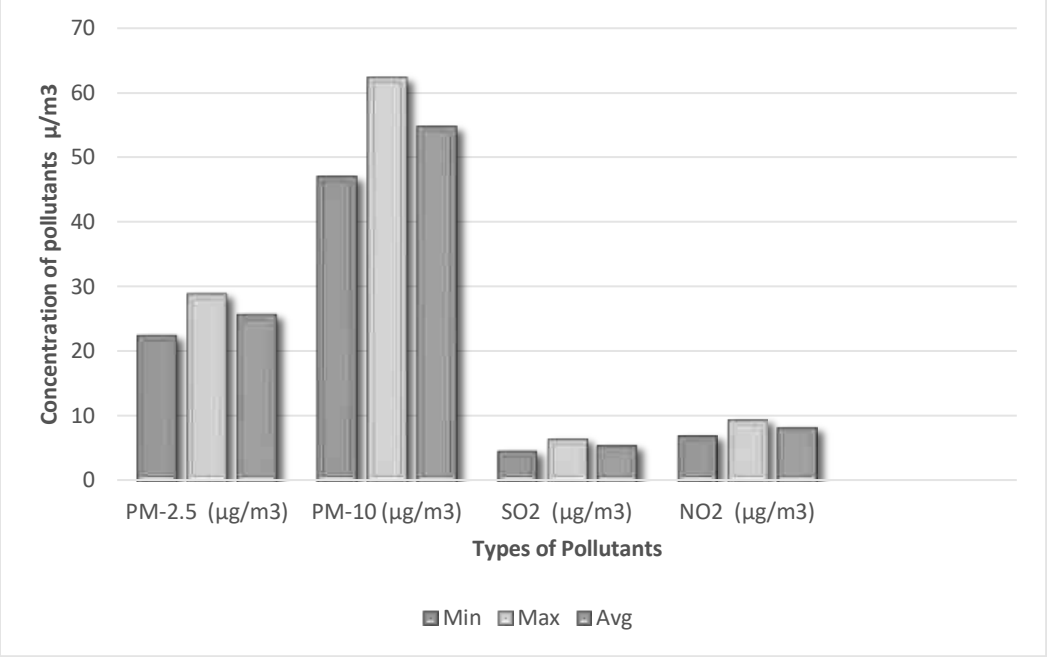
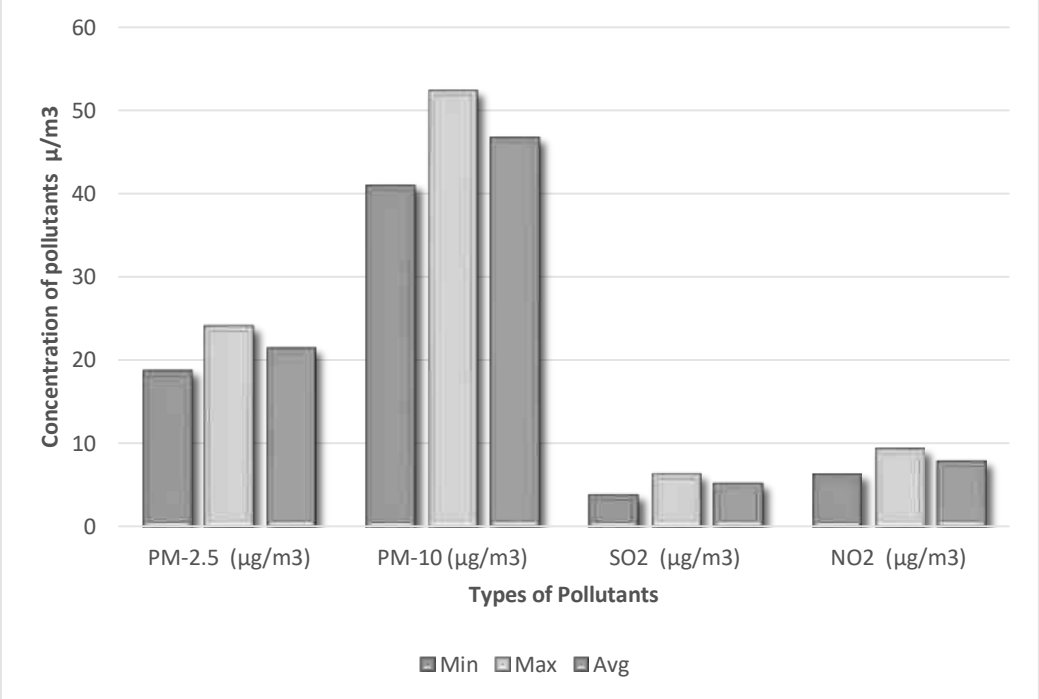


FIG 3.10 AMBIENT AIR QUALITY DATA A5 - ALADIPATTI VILLAGE



From the above results, it is observed that the ambient air quality with respect to PM_{10}, $PM_{2.5}$, SO_2, and NO_2 at all the monitoring locations was within the permissible limits specified by CPCB.

3.6 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.

3.6.1 Surface Water

There is Thamirabarani River is located at a distance of 3.42 km in south direction of lease area. The Palamadai Pond is situated at a distance of 2.12 m in southeastern direction. 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 3-14 and Figure 3.11.

3.6.2 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 3.11.

3.6.3 Sampling Locations

Two (2) surface water samples and six (6) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on water bodies. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012. The water sampling locations are given in Table 3.5 and shown as Figure 3.11.

The monitoring locations were selected based on:

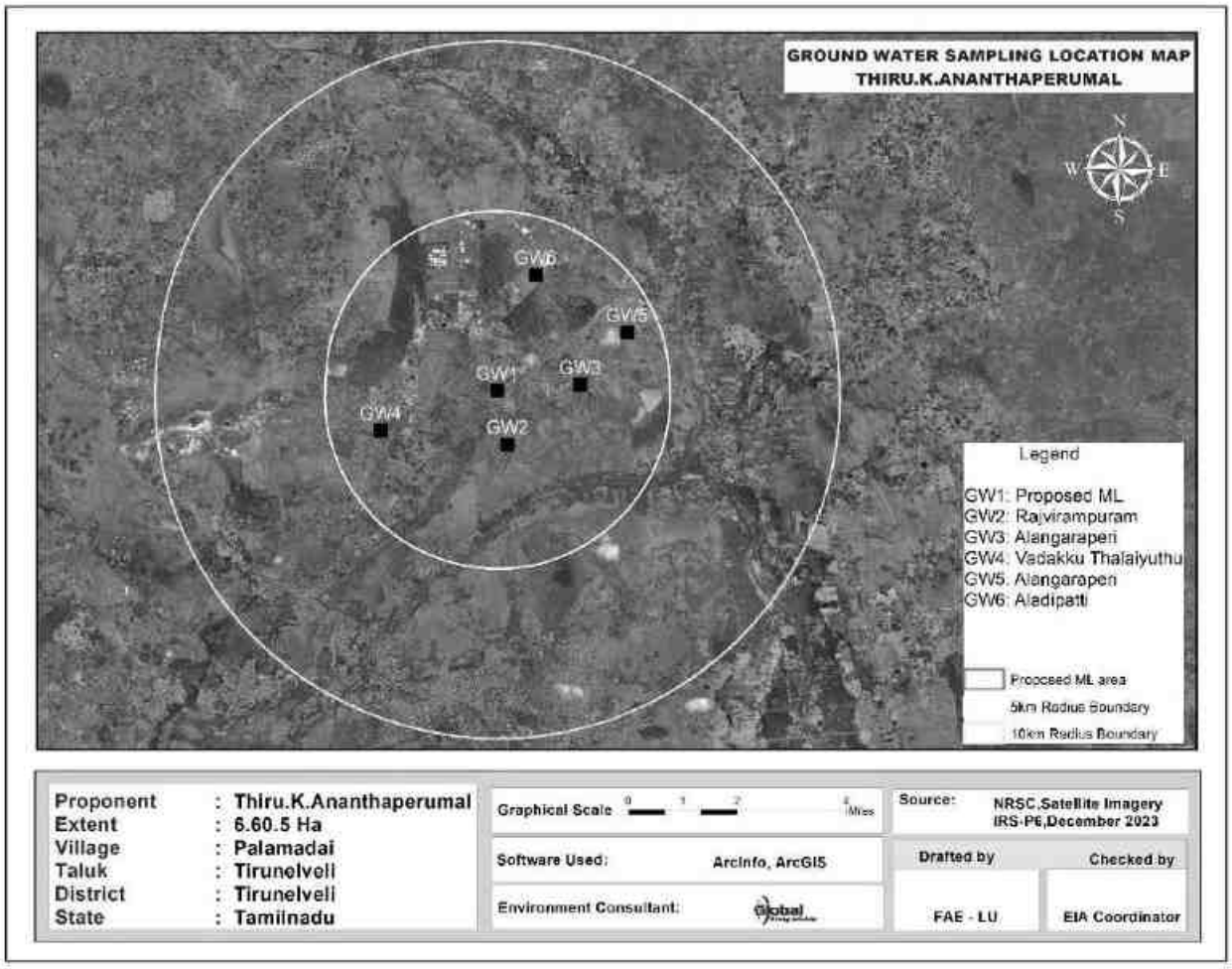
- Location of the major water bodies
- Location of project site,
- Likely areas that can represent baseline conditions

Water bodies nearby

Table 3.5 Water Sampling Locations

S.NO	Location Code	Monitoring Locations	Latitude and longitude
Surface Water			
1	SW1	Naranammalpuram village (Up- stream)	08°45'44.11"N 77°44'39.01"E
2	SW2	Paalaamadai village (Downstream)	08°46'53.2"N 77°46'10.34"E
Ground Water			
1	GW1	Project site	08°48'10.57"N 77°45'06.01"E
2	GW2	Rajvirampuram	08°47'26.42"N 77°45'17.36"E
3	GW3	Alangaraperi	08°48'28.3"N 77°4'28.1"E
4	GW4	Vadakku Thalaiyuthu	08°47'41.46"N 77°43'16.12"
5	GW5	Pathinalamperi	08°49'13.62"N 77°47'13.33"E
6	GW6	Aladipatti	08°50'9.62"N 77°45'46.25"E

FIG 3.11 GROUND & SURFACE WATER SAMPLING LOCATIONS



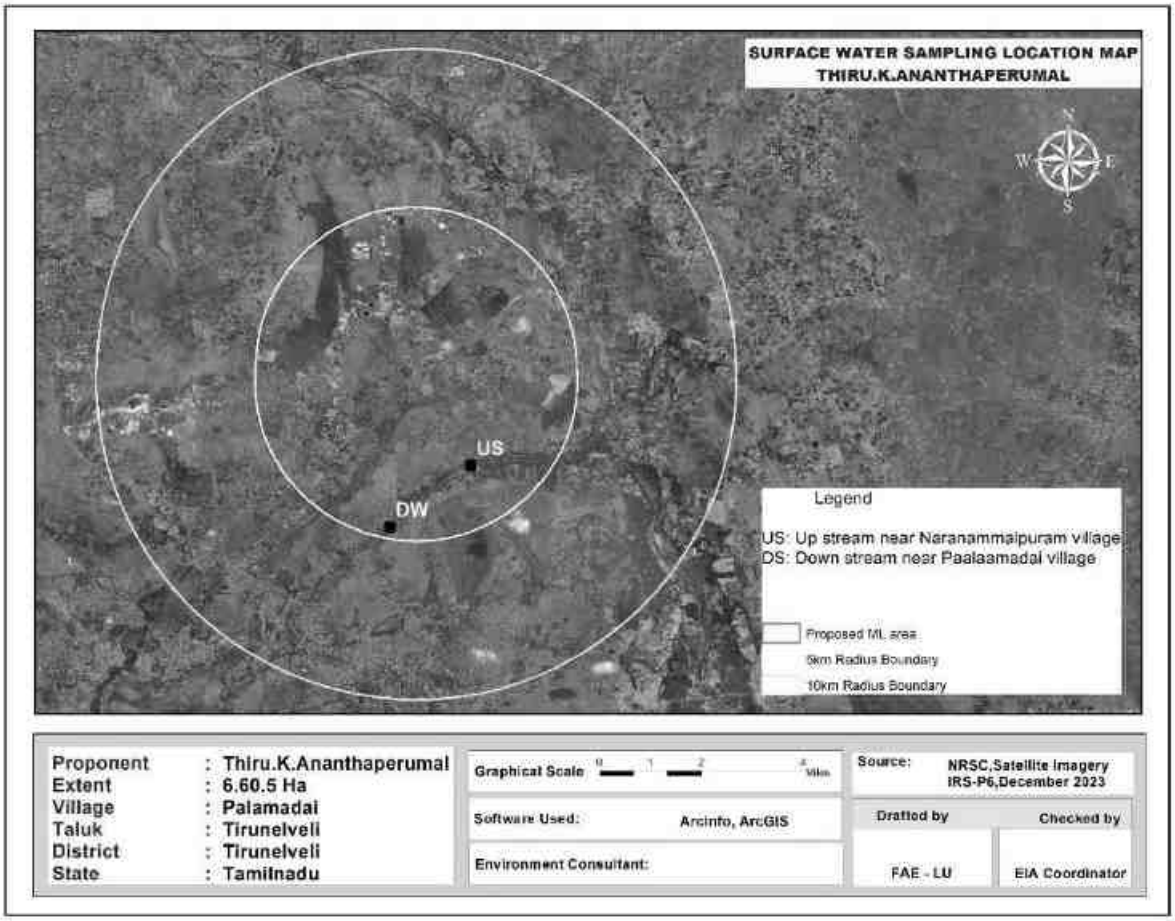

SURFACE WATER SAMPLING LOCATION MAP
THIRU.K.ANANTHAPERUMAL
N
W
E
S
US
DW
Legend
US: Up stream near Naranammalpuram village
DS: Down stream near Paalaamadai village
Proposed ML area
5km Radius Boundary
10km Radius Boundary
Proponent : Thiru.K.Ananthaperumal
Extent : 6.60.5 Ha
Village : Palamadai
Taluk : Tirunelveli
District : Tirunelveli
State : Tamilnadu
Graphical Scale
Source: NRSC,Satellite Imagery IRS-P6,December 2023
Software Used: Arcinfo, ArcGIS
Drafted by
Checked by
Environment Consultant:
FAE - LU
EIA Coordinator

Table 3.6 Surface Water Analysis Results

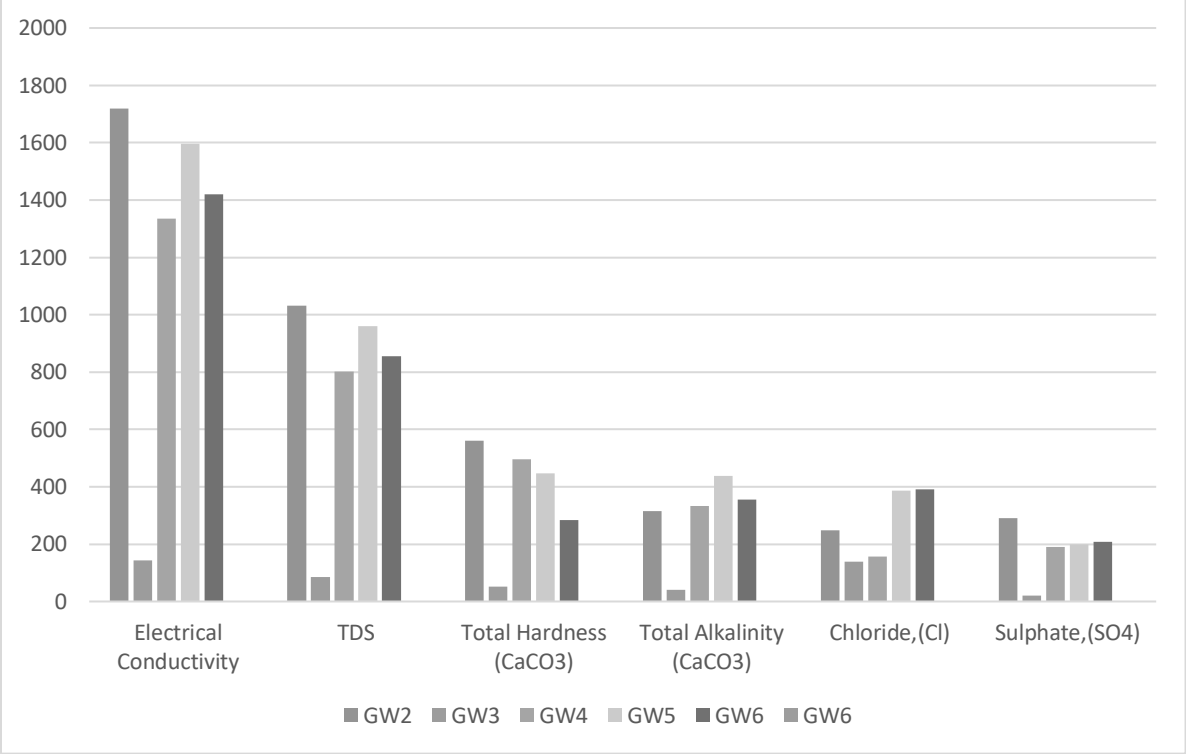
Sr.No	Parameter	Unit	SW1	SW2	Surface water standard s (IS 2296 Class-A)
1	Odour	-	Agreeable	Agreeable	-
2	Turbidity	NTU	<1.0	<1.0	1
3	pH at 25 ˚C	-	7.66	7.51	6.5-8.5
4	Electrical Conductivity	µs/cm	249.9	260.4	-
5	Total Dissolved Solids	mg/l	150	156	500
6	Total hardness as CaCO3	mg/l	79.2	81.2	-
7	Calcium as Ca	mg/l	18.2	19.0	300
8	Magnesium as Mg	mg/l	8.1	8.08	-
9	Calcium as CaCO3	mg/l	45.5	47.5	-
10	Magnesium as CaCO3	mg/l	33.7	33.7	-
11	Total alkalinity as CaCO3	mg/l	76.8	76.8	-
12	Chloride as Cl-	mg/l	26.4	25.4	-
13	Free Residual chlorine as Cl-	mg/l	BDL (D.L - 0.2)	BDL (D.L - 0.2)	250
14	Sulphates as SO42-	mg/l	27.4	34.7	400
15	Iron as Fe	mg/l	0.07	0.06	1.0
16	Nitrate as NO3	mg/l	1.26	2.11	20
17	Fluoride as F	mg/l	0.18	0.32	1.5
18	Manganese as Mn	mg/l	BDL (D.L - 0.05)	BDL (D.L - 0.05)	0.5
19	COD	mg/l	BDL (D.L - 2.0)	BDL (D.L - 2.0)	
20	BOD	mg/l	BDL (D.L - 4.0)	BDL (D.L - 4.0)	
21	TSS	mg/l	BDL (D.L - 2.0)	BDL (D.L - 2.0)	
22	DO	mg/l	6.2	6.4	

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

	Table 3.7 Results of Ground Water sampling Analysis in 6 locations								Specification/Limit (As per IS:10500: 2012)	
Sr. No	Parameter	Test Parameter	Unit	GW1	GW2	GW3	GW4	GW5	Desirable	Permissible
1	Odour	-	AGREEABLE	AGREEABLE	Agreeable	AGREEABLE	AGREEABLE	AGREEABLE	Agreeable	Agreeable
2	Taste	NTU	<1	<1	<1.0	<1	<1	<1	Agreeable	Agreeable
3	pH	-	7.15	6.75	7.24	7.22	7.54	7.68	6.5 - 8.5	No Relaxation
4	Turbidity	µs/cm	1624	1720	144.1	1335	1597	1421	1	5
5	TDS	mg/l	975	1032	86.0	802	960	855	500	2000
6	Fluoride,(F)	mg/l	453	560	51.5	497	446	283	1	1.5
7	Total Alkalinity, (CaCO3)	mg/l	102	114	14.3	87.1	97.6	78.4	200	600
8	Total Hardness, (CaCO3)	mg/l	47.8	65.8	3.80	67.0	48.5	20.9	200	600
9	Calcium,(Ca)	mg/l	254	286	35.6	218	244	196	75	200
10	Calcium as CaCO3	mg/l	199	274	15.8	279	202	87.1		
11	Free Residual chlorine as Cl-	mg/l	452	316	40.4	333	439	356		
12	Chloride,(Cl)	mg/l	249	269	17.6	232	242	244	250	1000
13	Magnesium,(Mg)	mg/l	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)	30	100
14	Nitrate, (NO3)	mg/l	201	290	20.1	190	198	209	45	No Relaxation
15	Sulphate, (SO4)	mg/l	0.09	0.05	BDL (D.L - 0.01)	0.08	0.06	0.04	200	400
16	Iron,(Fe)	mg/l	3.25	4.56	BDL (D.L - 1.0)	3.56	3.72	3.59	1	No Relaxation
17	Manganese, (Mn)	mg/l	0.32	0.51	BDL (D.L - 0.1)	0.49	0.41	0.57	0.1	0.3
18	Conductivity	mg/l	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)	Not Specified	Not Specified

Some of the common parameters including EC, TDS, Total Hardness, Total Alkalinity, Chlorides and Sulphates in the 5 locations were plotted and the graph is provided below.

FIG 3.12 VALUES OF FEW COMMON PARAMETERS IN WATER ANALYSIS



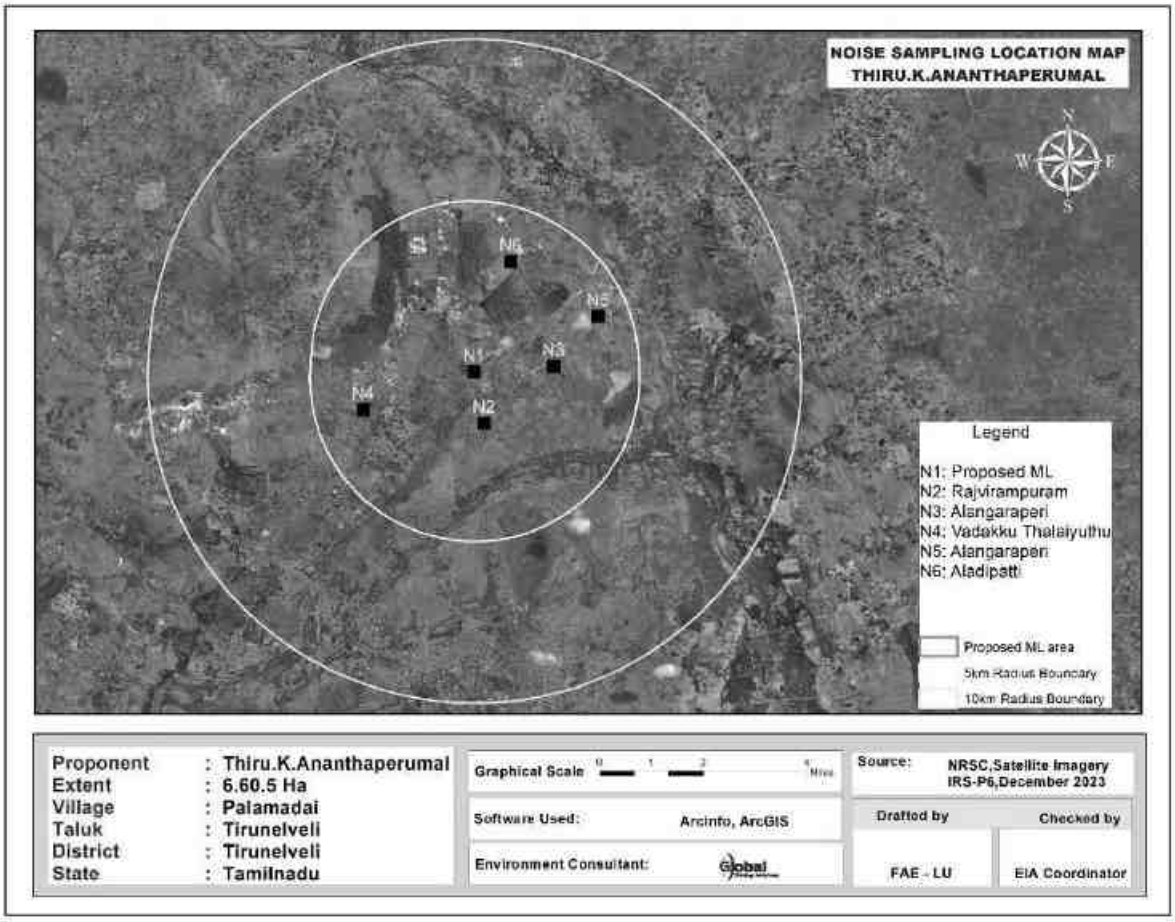
All the values were found to be within the permissible limits.

3.7 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 3.12

FIG 3.13 NOISE MONITORING LOCATIONS



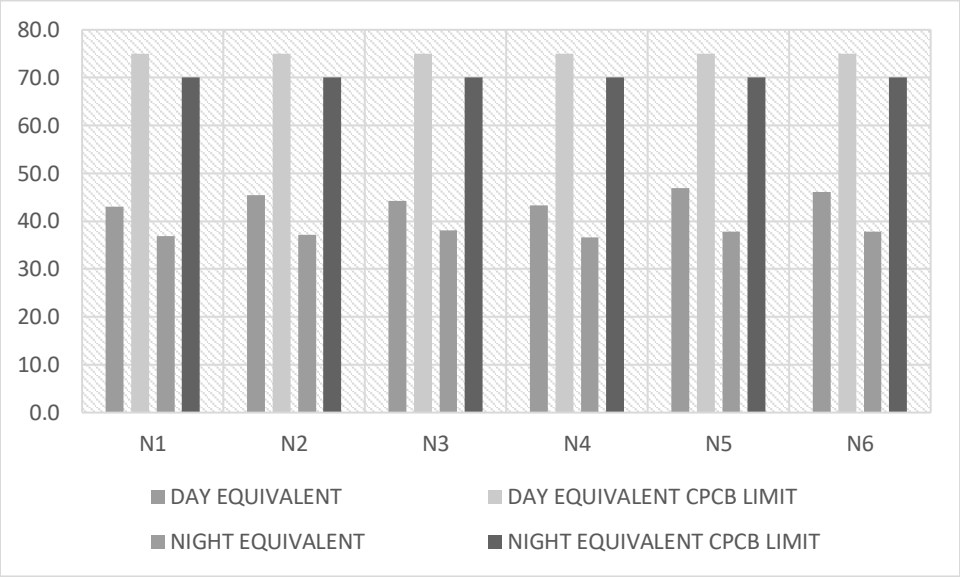
The results are given in Table below.

Table 3.8 Noise monitoring results

S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	Project site	43.1	36.8	75	70
2	Rajvirampuram	45.5	37.2		
3	Alangaraperi	44.3	38.1		
4	Vadakku Thalaiyuthu	44.4	36.6		
5	Pathinalamperi	46.9	37.8		
6	Aladipatti	46.1	37.8		

The results are plotted as below.

FIG 3.14 DAY AND NIGHT EQUIVALENT VALUES IN 6 LOCATIONS

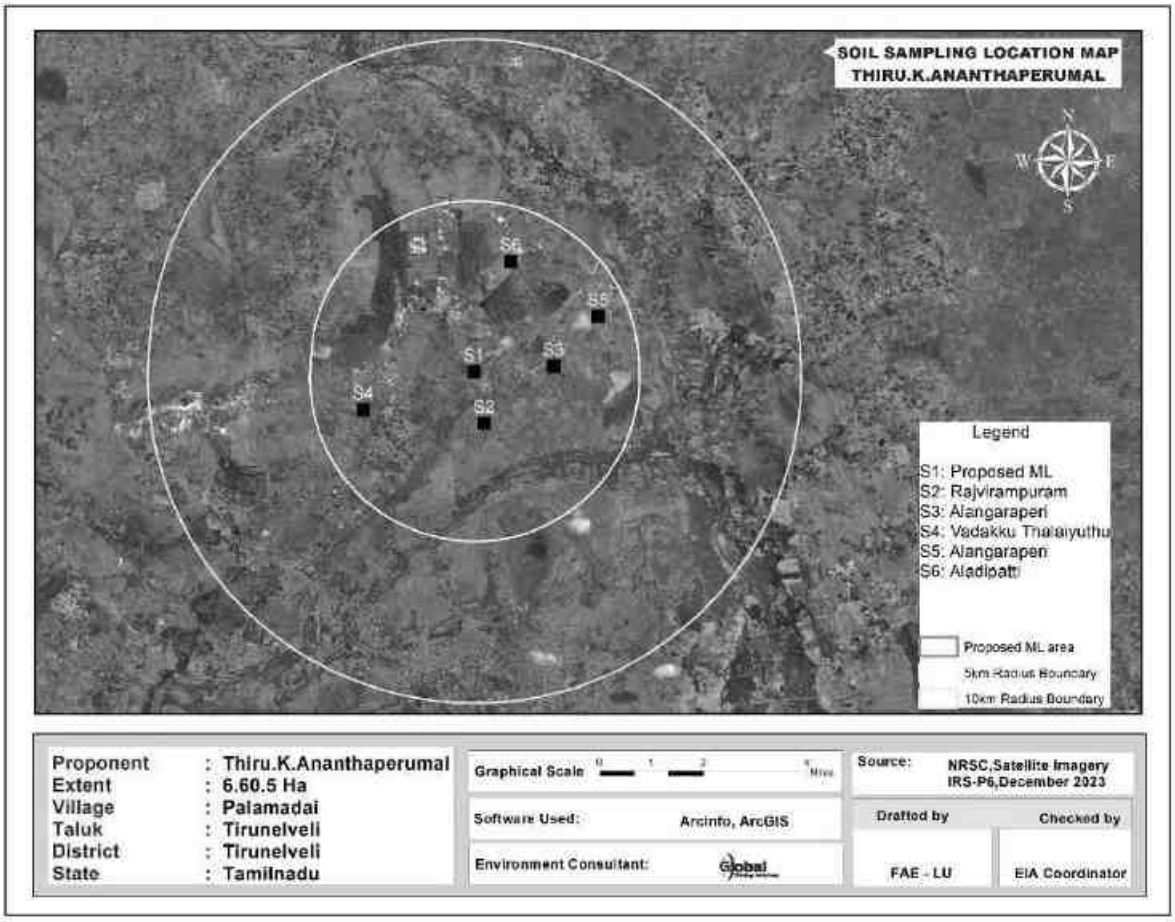


All the values are found to be within CPCB norms.

3.8 SOIL SAMPLING ANALYSIS

Soil samples have been collected from the mine lease area and 6 other locations from Rajvirampuram, Alangaraperi, Vadakku Thalaiyuthu, Pathinalamperi and Alandipatti Villages. The locations are shown in figure below.

FIG 3.14 SOIL SAMPLING LOCATIONS



The results are summarized in the table below.

Table 3.9 Results of Soil Sample Analysis

S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25 °C	-	6.67	7.55	7.24	7.43	7.96	7.24
2	Electrical Conductivity	µmhos /cm	312.8	52.47	76.54	110.4	110.6	50.13
3	Dry matter content	%	98.94	94.32	97.93	95.41	98.44	92.81
4	Water Content	%	1.06	5.68	2.07	4.59	1.56	7.19
5	Organic Matter	%	0.94	1.72	1.62	2.14	1.21	0.76
6	Soil texture	-	LOAM	LOAM	CLAY LOAM	SILT LOAM	Sandy Clay loam	Clay loam
7	Grain Size Distribution	%	45.95	42.06	28.41	27.22	44.38	29.46

	i. Sand							
8	ii. Silt	%	45.09	38.37	33.08	53.54	27.65	40.68
9	ii i. Clay	%	8.97	19.57	38.51	19.24	27.97	29.86
10	Phosphorous as P	mg/kg	1.58	2.66	2.13	3.21	0.97	1.56
11	Sodium as Na	mg/kg	905	434	373	264	388	512
12	Potassium as K	mg/kg	775	642	507	527	632	723
13	Nitrogen and Nitregenous Compounds	mg/kg	275	475	453	635	292	163
14	Total Soluble Sulphate	%	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	%	23.6	25.4	27.1	22.2	20.9	22.7
16	Water Holding Cabacity	Inches /foot	3.5	3.6	3.1	3.7	3.5	3.2

3.9 BIOLOGICAL ENVIRONMENT

The biological study of the area has been conducted in order to understand the ecological status of the existing flora and fauna to generate baseline information and evaluate the probable impacts on the biological environment. The details are given below.

3.8.1 Flora in the study area

Field survey is done. For measuring the extent of flora present in the study area, the area is divided in to 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Also, data from the State forest department is used. The quadrants used for each type are given below:

Core Zone

During the field visit, it is observed that there are no national parks / Sanctuaries / forests in the 10km buffer area. The study area is devoid of any major plantations.

Table 3.10 Flora in Core Zone			
S.No.	**Scientific name**	**Vernacular/English name**	**Type of flora**
1	Calotropis gigantea	Erukku	Shrubs
2	Cassia auriculata	Aavarai	
3	Achyranthes aspera	Nayuruvi	

Buffer zone

Only common trees, shrubs, bushes, etc. are found. The list is given below.

Table 3.11 Flora in Buffer zone			
S.No.	**Scientific name**	**Vernacular/English name**	**Type of flora**
1	Azadirachta indica	Neem	Trees
2	Carica papaya	Papaya	
3	Mangifera indica	Mango	
4	Acacia leucophloea	Velamaram	
5	Acacia nilotica	Karu- velamaram	
6	Moringa oleifera	Murungai	
7	Tamarindus indica	Puli	
8	Tectona grandis	Theku	
9	Manilkara zapota	Sappota	
10	Musa paradisiaca	Valzhlai	
11	Borassus flabelliformis	Panna-maram	
12	Ficus benghalensis	Alamaram	
13	Ficus religiosa	Arasamaram	
14	Phyllanthus emblica	Nelli	
15	Calotropis gigantea	Yerukku	Shrubs
16	Cassia auriculata	Aavarai	
17	Ricinus communis	Aamanakku	
18	Tecoma stans	Arali	
19	Aloe vera	Kathalai	
20	Catharanthus roseus	Nithyakalyani	Herbs
21	Acalypha indica	Kuppaimeni	
22	Coccinia grandis	Kovai	Climbers
23	Cissus quadrangularis	Pirandai	
24	Jasminum angustifolium	malli	
25	Ziziphus oenoplia	Ilandai	
26	Cymbopogon	Kanam	Grasses
27	Cyperus rotundus	Kora grass	
28	Cynodon dactylon	Arugu	

3.8.2 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 3.12 Fauna in buffer zone

S.No.	Scientific name	Common name	Type of fauna	Schedule to which the species belong
1	Canis familiaris	Common dog	Mammals	IV
2	Felis catus domesticus	Domestic cat		IV
3	Golunda ellioti	Indian bush rat		IV
4	Funambuus palmarum	Squirrel		IV
5	Lepus nigricollis	Indian hare		IV
6	Bos indicus	Domestic cow		IV
7	Common Crow	Corvus splendens	Birds	V
8	House Sparrow	Passer domesticus		IV
9	Common Myna	Acridotheres tristis		IV
10	Streptopelia chinensis	Pigeon		IV
11	Calotes versicolar	Lizard	Amphibia	IV
12	Ptyas mucosa	Snake		IV
13	Rana hexadactyla	Frog		IV

3.10 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 is Latitude 08°48'15.51"N to 08°48'21.48"N and Longitude 77°44'57.62"E to 77°45'03.02"E

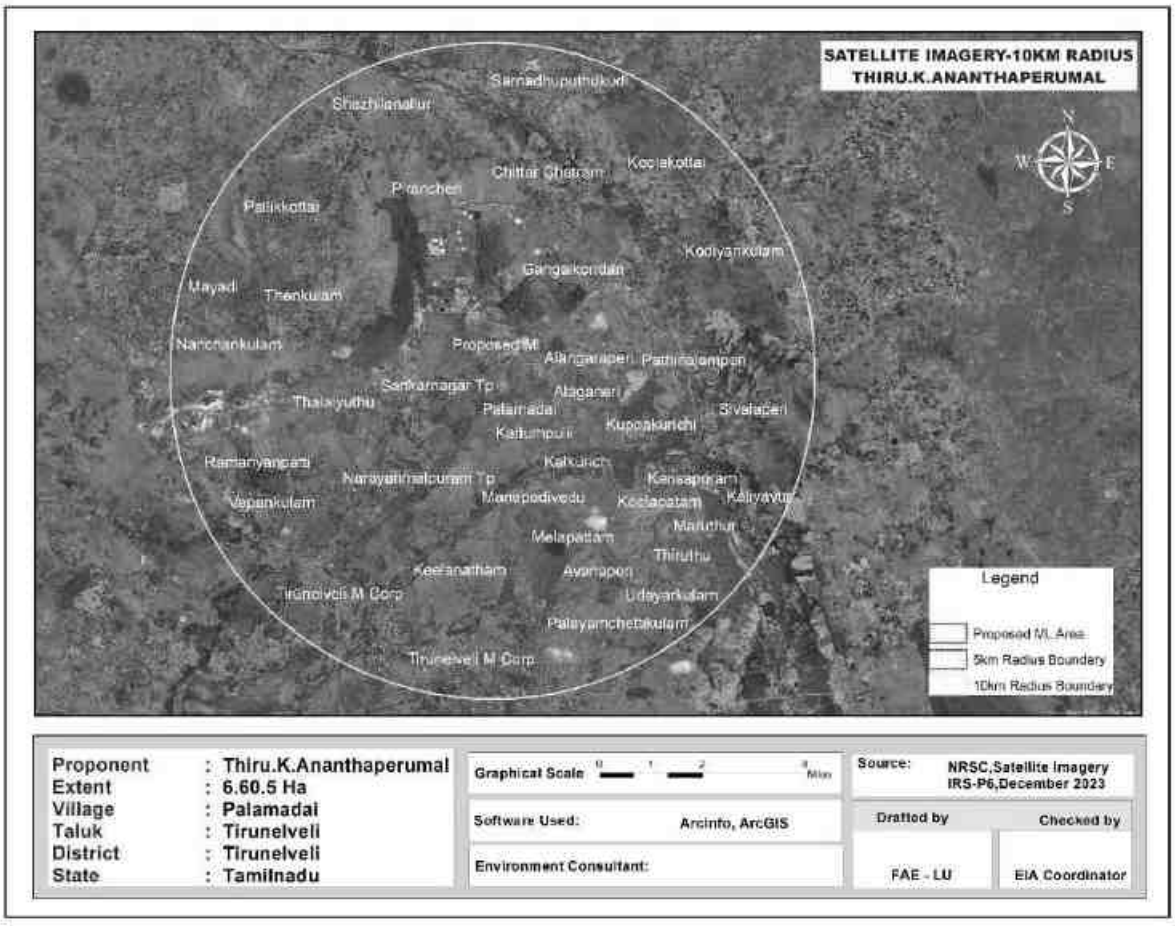


Figure No. 3.16: Remote Sensing Satellite Image

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. 1** 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.3.13: Major Landuse Units of the Study Area

Sr. No.	1ST LEVEL CLASSIFICATION	2nd 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

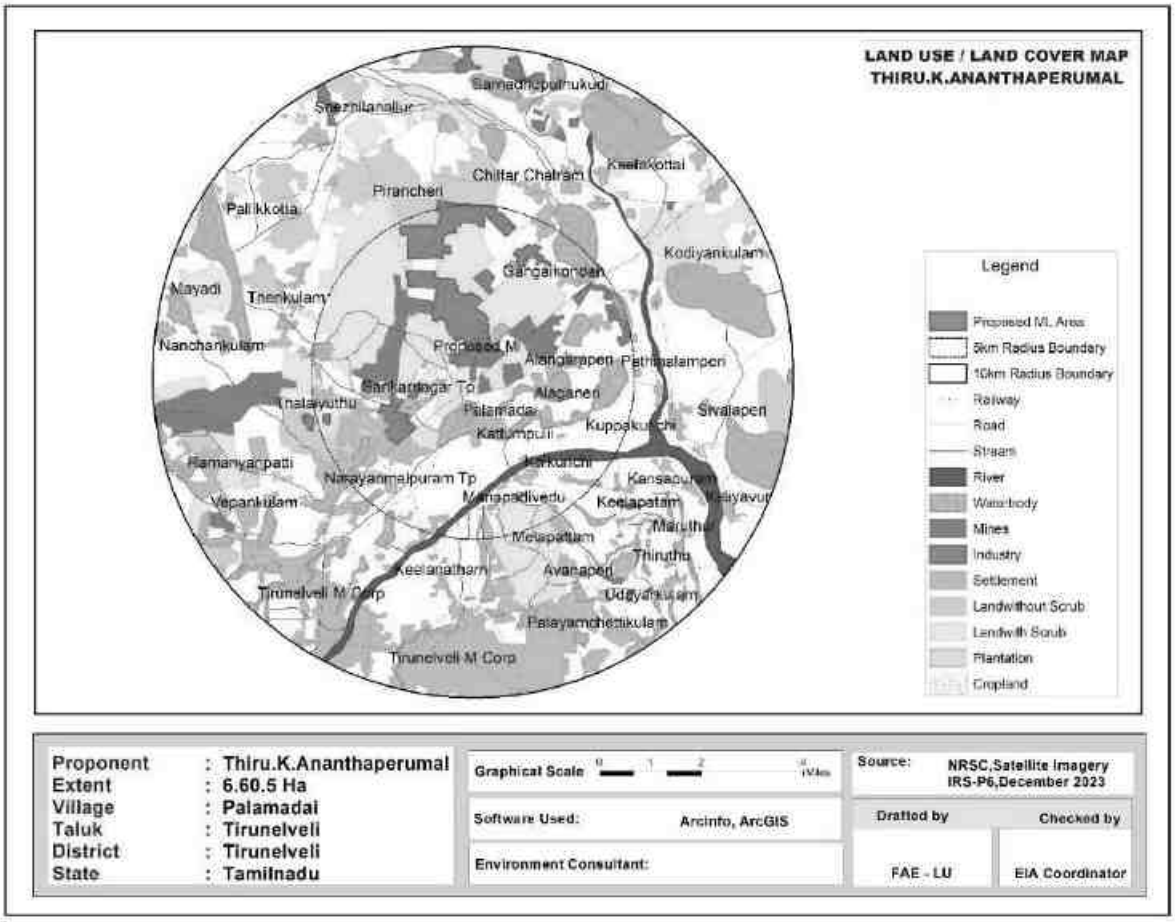
The existing land use pattern and land cover distribution of the whole acquired block, have been studied from the satellite imagery and subsequent ground checking during the field surveys.

It mainly comprises of agricultural land with bi-annual crops of Kharif (Kharif: Jowar, Bajra, Cotton, etc. Season: July to October) and Rabi (Rabi: Wheat, Rai etc. Season: December to March). The presence of the agricultural land is followed by few dense settlements Namakkal M village natural or man-made pond etc. The shortage of rainfall, availability of ground water at deeper level and other climatic condition do

not support good agricultural productivity inspite of having enough land. There is no demarcated forest land within the study area, however, some scattered forest is found throughout the 10 km radius, especially along the periphery of the villages.

The general landuse pattern of the core and buffer may be broadly classified into four major types – Buildup or habitation, Agriculture, Water Bodies, Waste land and Other categories. Under buildup or habitation category covered villages, town and infrastructure. Under agriculture category considered crop land/fallow land and plantation. Under the water body categories Reservoir/ lake, pond, River and stream. Under wasteland category considered landwith scrub and land without scrub is interpreted. Lastly other category's covered Mines area and forest are interpreted under this category. These categories are delineated from the selected satellite image using image elements such as color, tone, texture, size, shape and associated elements. The delineated landuse units are transformed into a spatial database in GIS environment. The map thus generated in GIS as shown in **Figure No. 2** is estimated for area and representation of each category in the study area. The total area of LULC in the study area is calculated as **326** sq. km and spatial distribution of various LULC categories within buffer area are discussed below. The 5km and 10km radius landuse map is shown above. The details are given below.

FIG 3.17 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.

Built-up / Settlements

Settlements in the study area are generally small to medium size in stature and area scattered. Namakkal M is the relatively larger settlements observed at the north part of the study area.

Interpretation of settlement from the satellite image is based upon the image elements such as color, tone, texture and association. It is delineated by their typical

red color. Association with linear features such as roads reaffirmed the presence of delineation of settlements. The spatial extent of settlement is estimated as 48.38 sq. km representing 14.84 % of the study area and Industrial + Commercial area covers 9.47 sq. km with 2.9%.

Agricultural Land

Under the broad category of agriculture crop land, fallow land and plantation is delineated. Cultivation is mostly dependent upon river water for irrigational activities are good. River, Ponds and tanks in each village act as rainwater storage units and do support domestic requirement and even cultivation to some extent. Because of these conditions, minimal water requiring crops such as corn, sunflower, oil seeds, grams, millets and coriander are cultivated. Cultivation is the most predominant crop cultivated and even if it failed their stalks are used as fodder for cattle.

Crop and Fallow land are interpreted using their image elements such as light to green, smooth to medium tone, they are the second most predominant landuse category delineated in the buffer area. As explained earlier, cultivation mostly depends upon river, canal and rainfall and majority of the land parcels are tilled and ready for cultivation with even a scanty Canal. Hence, cropland is the predominant category estimated at 144.5 Sq.km representing 44.33 % of the buffer area, plantation area covers 0.71 sq km with 0.22 %.

Wasteland

The last category of the landuse units in the study area is "Wasteland" which denotes land parcels that could not be utilized for cultivation even after conservation measures – such as land with scrub, land without scrub area.

Next to agricultural area, natural vegetation such as land with scrub forms the predominant LULC category of the buffer area. Land with scrub is sparse and delineated as patches scattered in all the parts of the buffer area. The spatial pattern of scrub suggests it is closely associated with water courses. This category occupies

land with scrub an area of 46.71 sq.km representing 14.33 % of the total core and buffer area.

Land without scrub, on the other hand is interpreted using brown to white color, medium tone and medium texture and is generally restricted around land covered with scrub and fallow land. They occur as small patches and very minimal area covering 18.44 sq.km representing 5.66 % of the buffer area.

Water bodies

Many Streams small and big water bodies are seen in the study area distributed all over the study area. They support the domestic water requirements and for cattle. At some places, they may also use for irrigation purpose and are very limited. Few dry stream courses are also seen in the study area. In the satellite image, water bodies are interpreted by their light blue to greyish blue color, smooth tone and smooth texture.

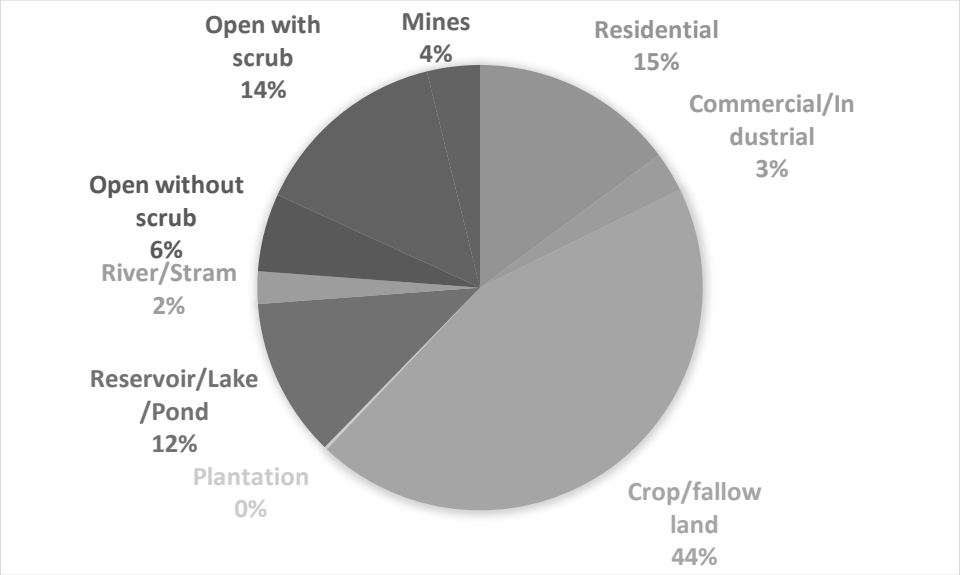
Most of the water bodies retain water for a shorter period after precipitation due to the soil constraint and hence go dry soon. Spatial extent of rivers, stream and water bodies is estimated at 45.28 sq.km and 13.89 %.

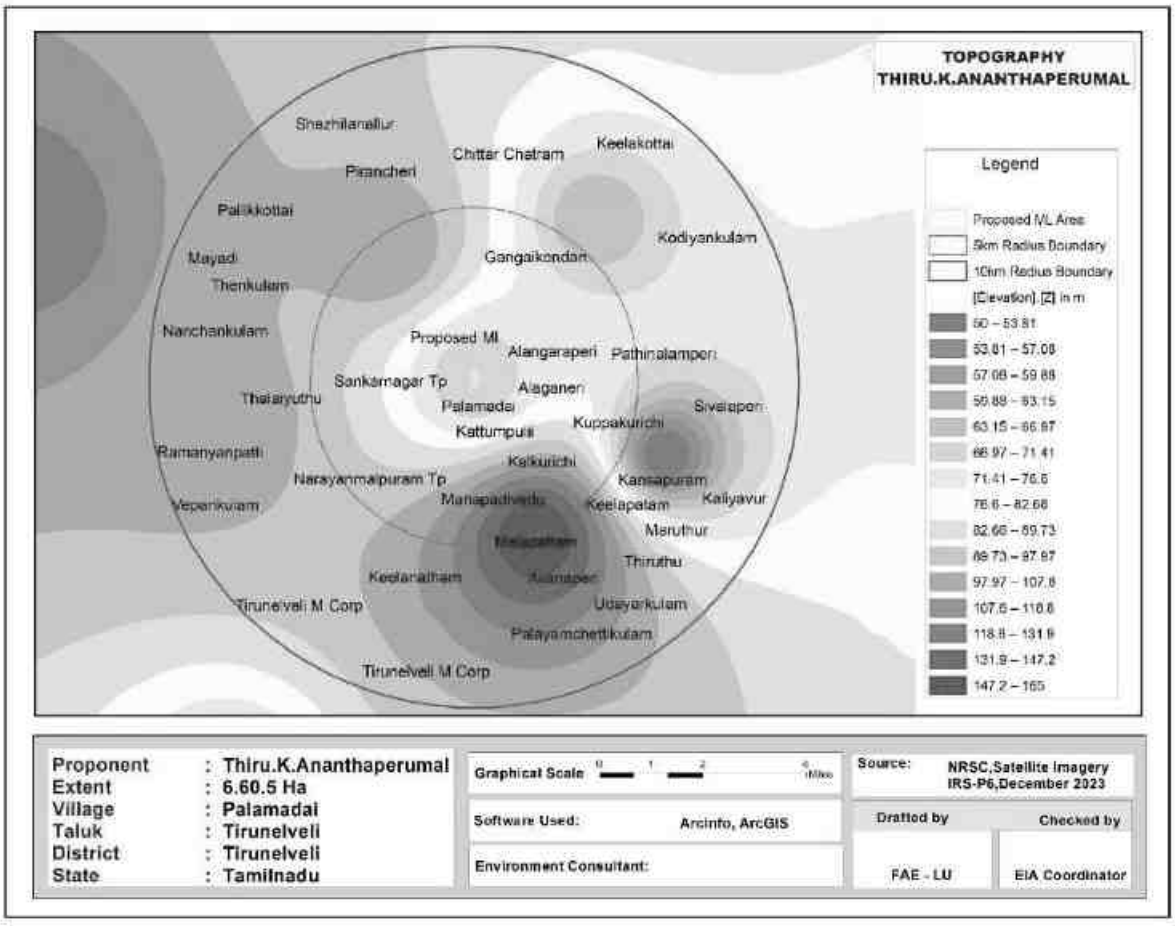
Mining area

Mining is seen in the study area distributed all over the study area. Major domestic income from mining business. Spatial extent of mining is estimated at 12.51 sq.km and 3.84 %.

Table No. 3.14: Major Land Use Units of the Study Area in Percentage

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	57.85	17.75	Residential	48.38	14.84
				Commercial/Industrial	9.47	2.90
2	Agriculture	145.21	44.54	Crop/fallow land	144.5	44.33
				Plantation	0.71	0.22
3	Water bodies	45.28	13.89	Reservoir/Lake /Pond	37.60	11.53
				River/Stram	7.68	2.36
4	Waste Land	65.15	19.98	Open without scrub	18.44	5.66
				Open with scrub	46.71	14.33
5	Others	12.51	3.84	Mines	12.51	3.84
Total		**326**	**100**		**326**	**100**





3.11 SOCIOECONOMIC ENVIRONMENT

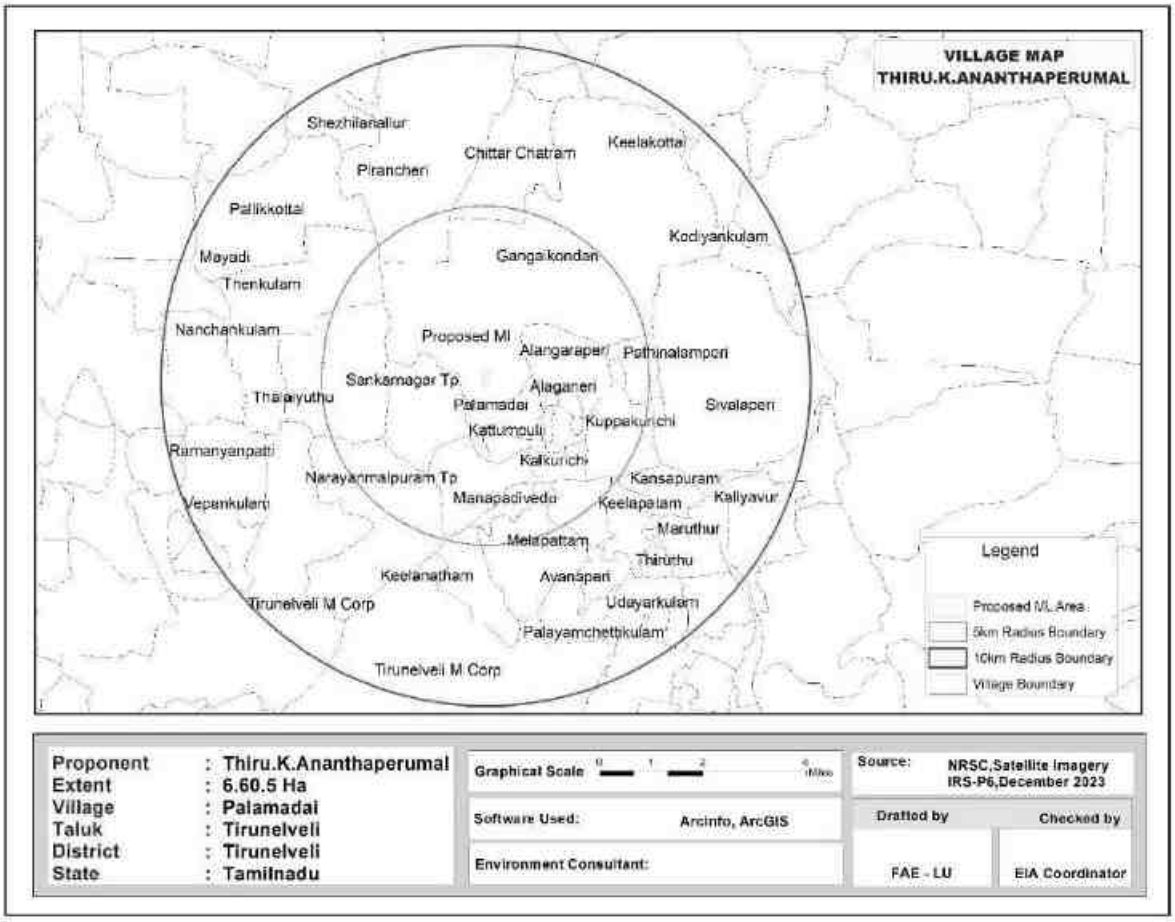
The socio-economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used. The following data area collected from secondary data:

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

3.11.1 DETAILS OF VILLAGES

The profile of the villages located in the study area is given in Fig 3.16 below.

FIG 3.18 VILLAGE MAP OF THE STUDY AREA



DETAILS OF VILLAGES

The project is located in Tirunelveli Taluk, Tirunelveli District. The total population is 567825 which comprise of 280347 males and 287478 females. There are 29 rural villages and one urban area in the study area. List of villages are given below.

Table 3.15 Village details in study area				
S.No.	**Village/Town Name**	**Radius**	**Taluk Name**	**District Name**
1	Gangaikondan	1-5km	Tirunelveli	Tirunelveli
2	Alaganeri			
3	Palamadai			
4	Kalk3urichi			
5	Kuppakurichi			
6	Pirancheri		Manur	
7	Thenkulam			
8	Chittar Chatram			
9	Thirumalaikolunthupuram		Palayamkottai	
10	Alangaraperi			
11	Tirunelveli M Corp			
12	Udayaneri	6-10km	Tirunelveli	
13	Kattalai Udayaneri			
14	Tirunelveli M Corp			
15	Naranammalpuram Tp			
16	Rajavallipuram			
17	Pallikkottai		Manur	
18	Mavadi			
19	Thalaiyuthu			
20	Nanchankulam			
21	Kansapuram		Palayamkottai	
22	Keelapattam			
23	Melapattam			
24	Maruthur			
25	Keelanatham			
26	Thiruthu			
27	Naduvakurichi			
28	Palayamchettikulam			
29	Udayarkulam			

Table 3.16 Population profile of the study area		
Particulars	**No of Population**	**Percentage (%)**
A. Population break-up by Gender		
Male Population	280347	49.37
Female Population	287478	50.63
Total	567825	100
B. Population break-up by Caste		

Scheduled Caste	88401	15.57
Scheduled Tribes	1509	0.27
Others	477915	84.17
Total	567825	100
C. Literacy Level		
Male Literate Population	234992	41
Female Literate Population	218866	39
Male Illiterate	45355	8
Female Illiterate	68612	12
Total	567825	100
D. Occupational structure		
Main workers	202425	
Marginal workers	21032	
Total Workers	**223457**	**39**
Total Non-workers	**344368**	61
Total	567825	100

The above table shows that the male and female population ratios are almost equal. Among the total population 0.27 % belong to Scheduled Tribes, 15.57 % are Scheduled Caste and the balance 84.17 % people belong to other castes. Among the total population, 80 % of the people are literate. Among the total population, 8% are literate males and 12% are literate females. This shows that the male literates are higher than the female literates. The results are plotted in figures below.

FIG 3.19 GENDER-WISE POPULATION DISTRIBUTION

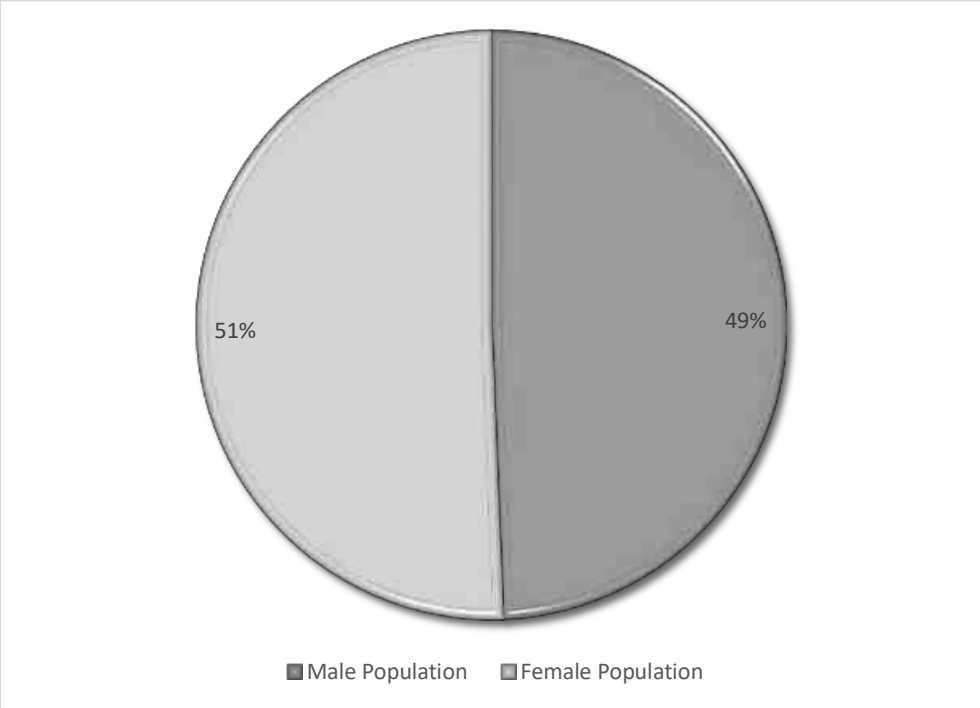


FIG 3.20 GENDER WISE LITERACY DISTRIBUTION

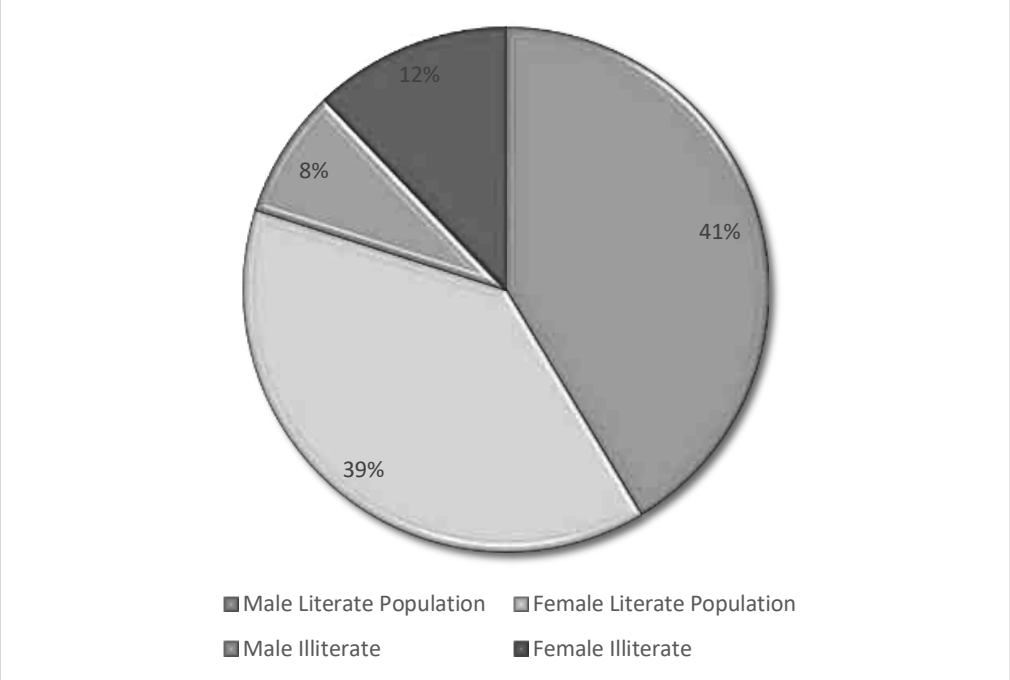
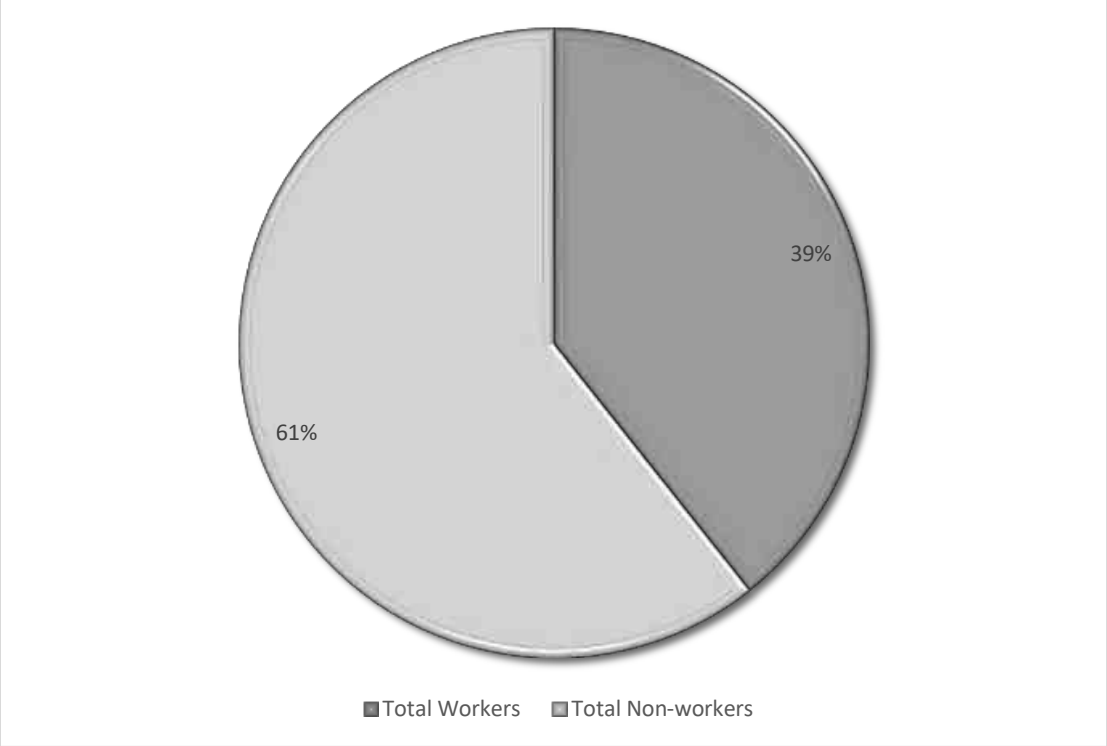


FIG 3.21 OCCUPATIONAL STRUCTURE WITHIN BUFFER ZONE



Infrastructure facilities in the study area

Education

Table 3.17 Educational infrastructure		
S. No.	**Particulars**	**Available in village(Nos)**
1	Govt. Primary School	Tirunelveli -20
2	Govt. Middle School	20
3	Govt. Secondary School	15
4	Govt. Senior Secondary School	8
5	Govt. Arts and Science Degree College	39
6	Govt. Engineering College	0
7	Govt. Medicine College	0
8	Govt. Management Institute	0
9	Govt. Polytechnic	0
10	Govt. Vocational Training School/ITI	0

In the study area, there are totally 38 Primary Schools functioning in these 20 rural villages. Among them 15 villages have 1 primary school, 5 villages have 2 primary schools & 2 villages have more than 2 primary school.

Healthcare

In the study area, the following facilities are available.

Table 3.18 Medical Infrastructure		
S.No.	**Particulars**	**Available in village (Nos)**
1	Community Health Centre	3
2	Primary Health Centre	2
3	Primary Health Sub Centre	12
4	Maternity And Child Welfare Centre	10
5	TB Clinic	4
6	Hospital Allopathic	0

Other Infrastructure

The other infrastructure facilities available are given below.

Table 3.19 Other Infrastructure		
S.No.	**Particulars**	**Available in village**
1	Tap Water-Treated	25
2	Covered Well	8
3	Hand Pump	5
4	Tube Wells/Borehole	11
5	Post office	4
6	Public bus services	18
7	Commercial Bank	2
8	Cooperative bank	7

Sample Survey

The expert visited 3 villages in the study area namely Gangaikondan, Thathanuthu nd Avanapperi, villages. Discussions were held with the people from nearby locality to study the social and economic conditions prevailing in the area. The expert also

visited nearby hospitals, primary health centres and Thathanuthu. The following observations were made.

Primary schools are available in many villages. For hospital facilities, people in the locality have to go to hospital in Thathanuthu which is about 3.28 km from the lease area. Major schools with higher secondary and senior secondary schools are located in Thathanuthu. The major Thathanuthu Union located in the area is Tirunelveli. Facilities like petrol pump stations, ATM facility are available in Thathanuthu

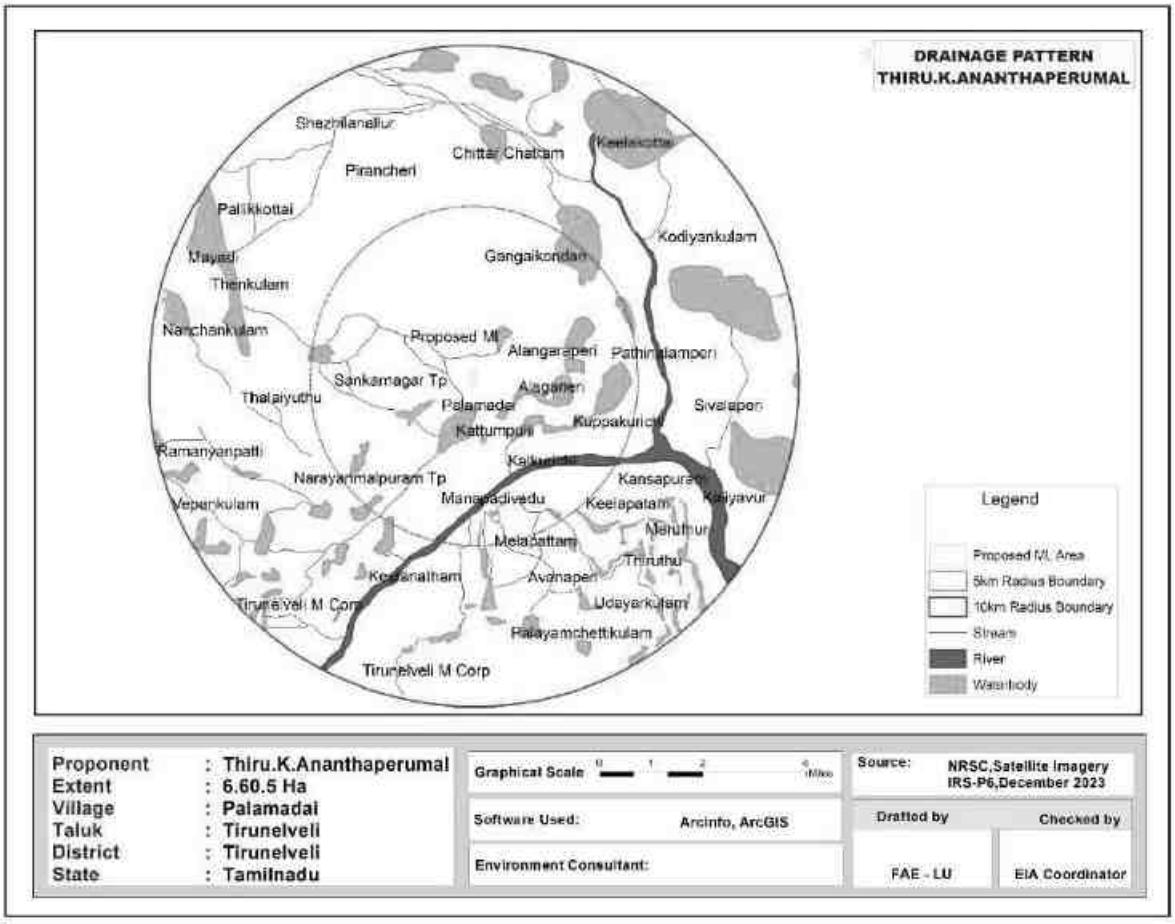
3.12 HYDROGEOLOGY OF THE STUDY AREA

Since there is Thamirabarani river is located at a distance of 3.42 km in south side of the proposed site, the hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

3.12.1 HYDROGEOLOGICAL STUDY

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

FIGURE 3. 22 10 KILOMETER RADIUS OF THE DRAINAGE MAP



3.12.2 PHYSIOGRAPHY AND DRAINAGE

Physiography: The area applied for quarry lease is exhibits hilly terrain topography covered by rough stone formation. The massive Charnockite formation is clearly visible right from the surface and gentle towards Southwestern side of the area, the altitude of the area is above 125m (maximum) from MSL.

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 3.20. There is Thamirabarani river is located at a distance of 3.42 km in south side of the proposed site.

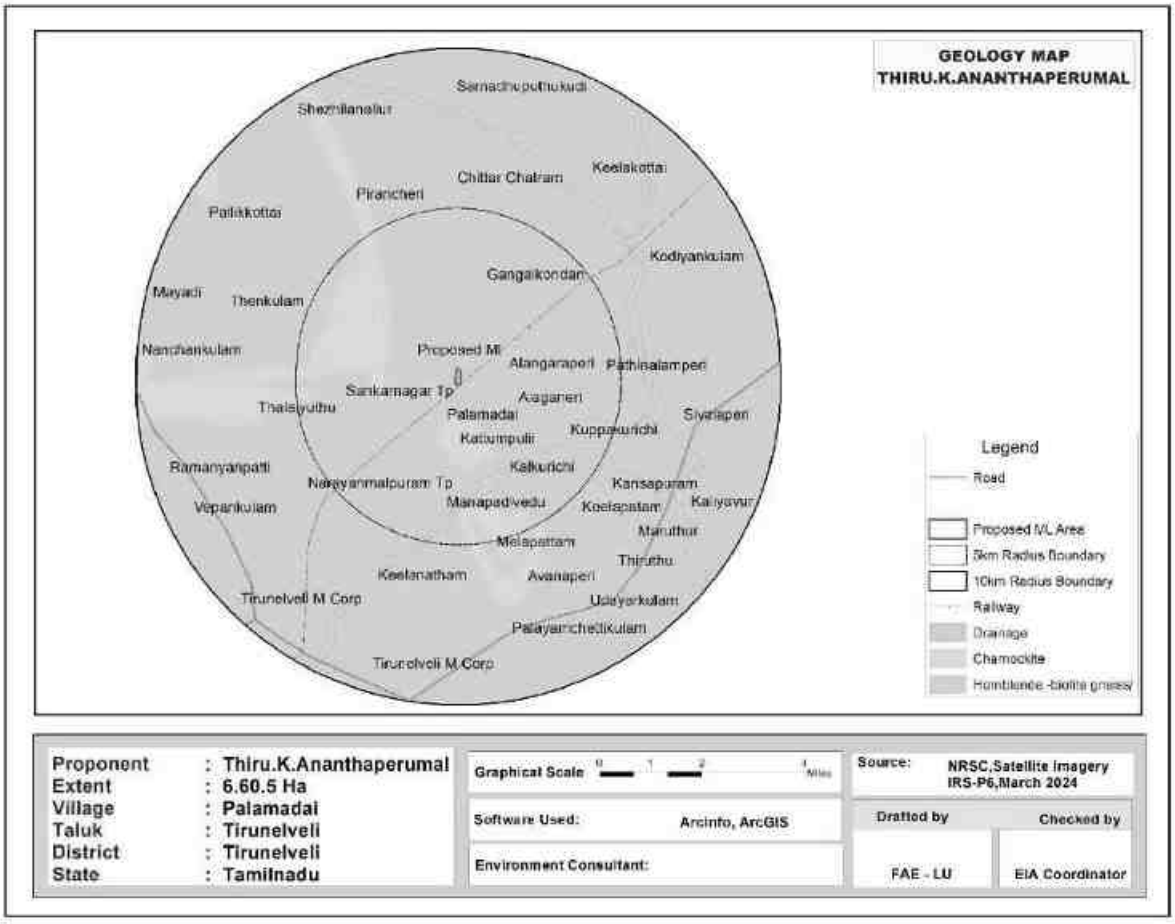
3.12.3 GEOLOGY, GEOMORPHOLOGY AND SOIL

Geology:

The Core and 10 Km buffered zone geological features (Figure 3.21) shows that the Namakkal District is mostly underlain by the Achaean crystalline and metamorphic complex. The geology of the district is complicated due to recurring tectonic and magmatic activities occurred during Pre-Cambrian period. The famous Sittampundi Anorthosite Complex which is known for its complex geology and occurrences of Platinum Group of Elements is situated in this district. Hornblende Biotite Gneisses are the oldest rocks in four taluks 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 limestone 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 dimensions 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. Thin veneer of alluvium is found along the course of the Cauvery and Thirumanimuthar. However, alluvium of few metres thickness is found near the junction of river Thirumanimuthar and river Cauvery. 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

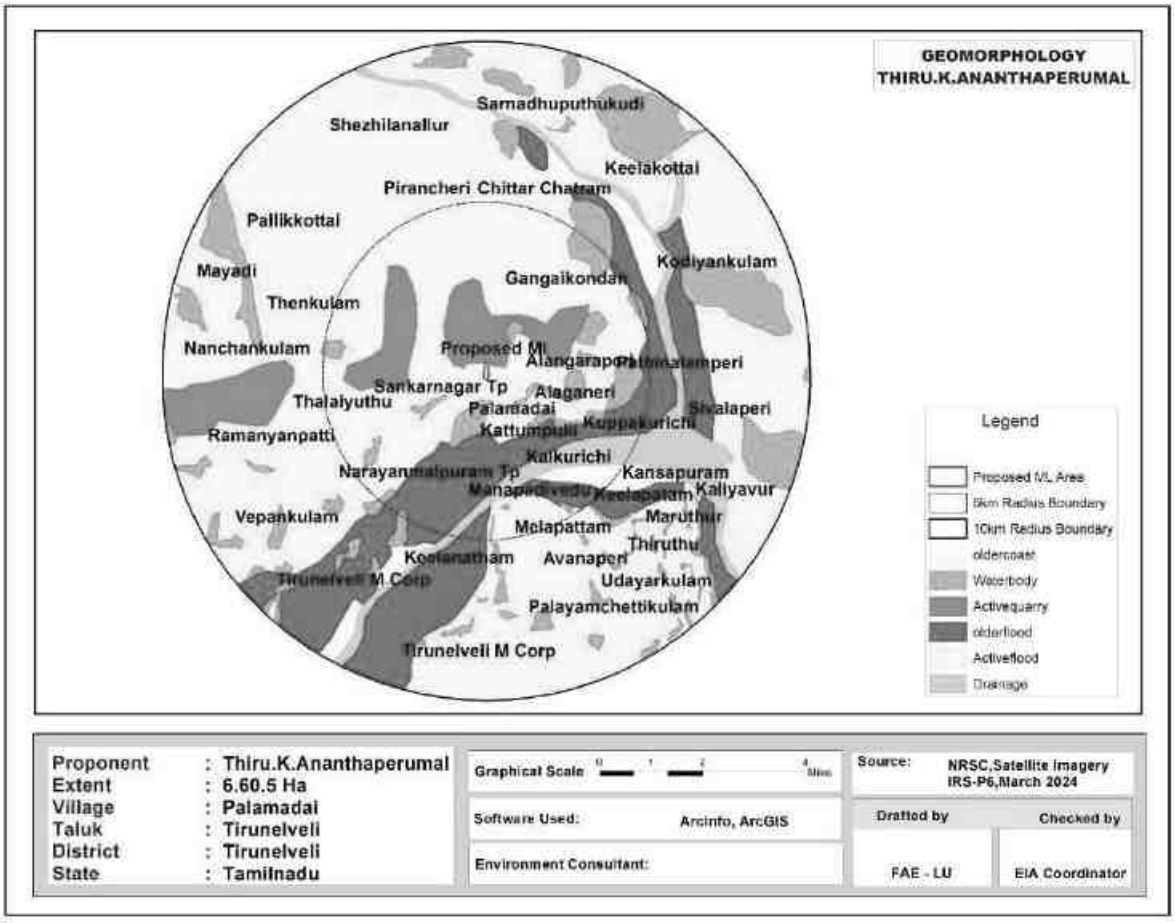
FIGURE 3. 23 10 KILOMETER RADIUS OF THE GEOLOGY MAP



Geomorphology: The Core and 10 Km buffered zone geomorphological features (Figure 3.22)shows that the Namakkal district forms part of the upland plateau region of Tamil Nadu with many hill ranges, hillocks and undulating terrain with a gentle slope towards east. The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hills, 2) Bazada zone, 3) Valleyfill, 4) Pediments, 5) Shallow Pediments and (6) Deep Pediments. A number of hill ranges are located in the eastern and north-eastern parts of the district, whereas the southern, western and northern parts of the district are plain to undulating, dotted with a few isolated hillocks. The important hill ranges in the district are Kollimalai Agasthyamala(1509 m), Aduppukkai Mottai (526 m) Aintalai Podigai (241

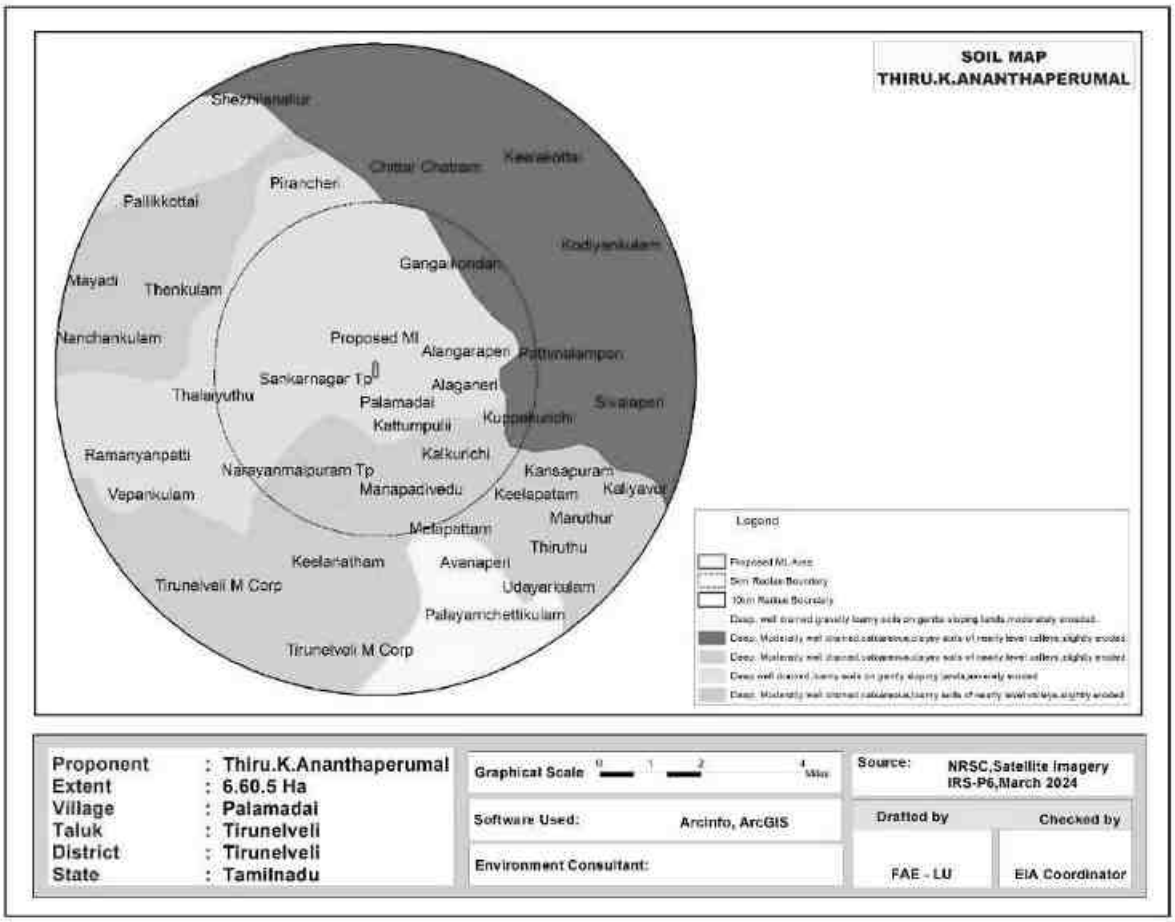
m),Karimalai Kadakal. (656 m), Nāga Podigai (219 m), Nuraltodia Bluff Rock (171 m), Mānametti Malai (316 m), Manjanam Pārai (253 m) range.

FIGURE 3. 24 10 KM RADIUS OF THE STUDY AREA GEOMORPHOLOGY MAP



Soil: The soil types in the study area are mostly Calcareous black soil, Red loamy soil, clayey soil and Calcareous clayey soil (Figure 3.23.). Calcareous black soil (177.25 sq.km) was distributed over the study area. Red loamy soil is found in north, east, west and central part of the study area (108.43 sq.km). Clayey soil is found in north-western part of the study area (34.93 sq.km).

FIGURE 3.25 10 KM RADIUS OF THE STUDY AREA SOIL TYPE MAP



3.12.4 BELOW GROUND LEVEL (BGL)

Figure 3.26 & 3.27 shows the Non-Monsoon and Monsoon water level map of the study area.

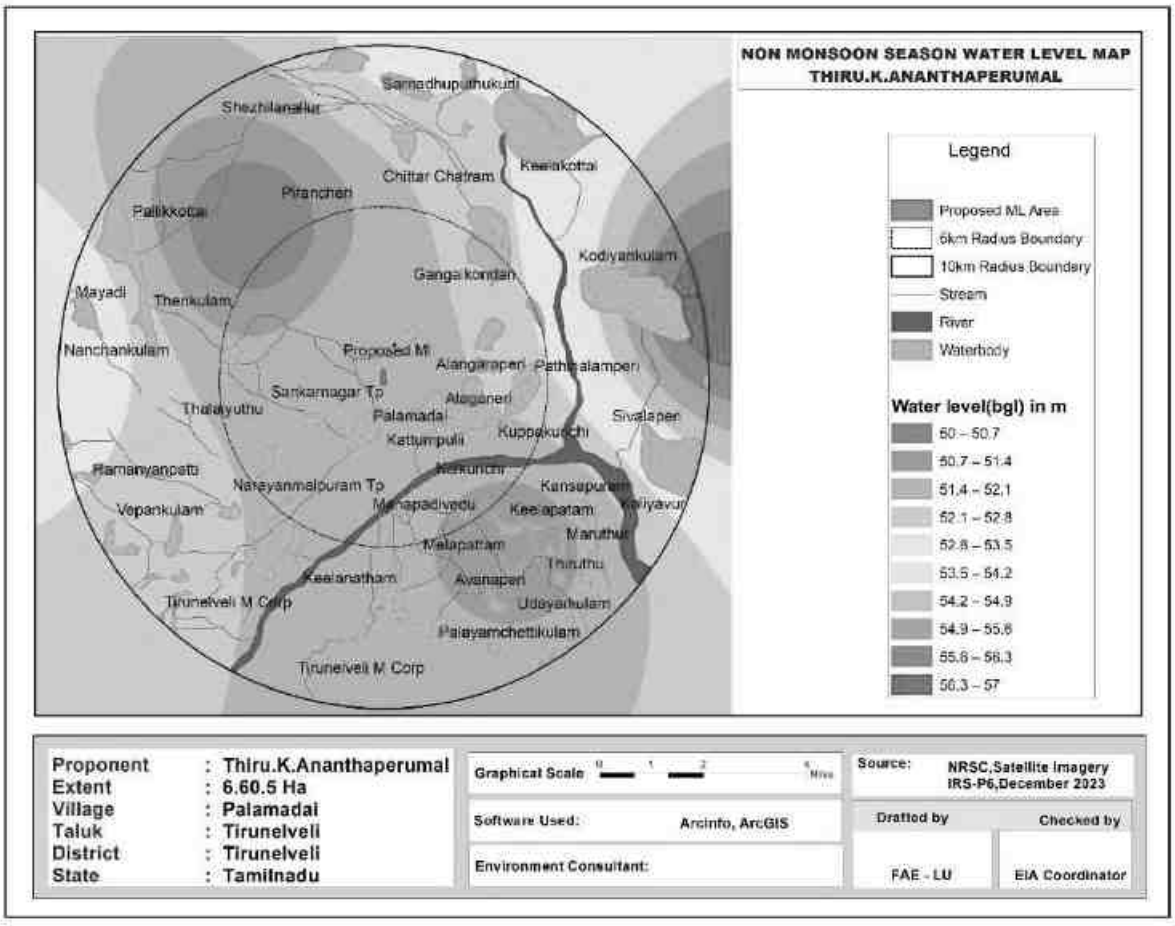


FIGURE 3.26 NON-MONSOON WATER LEVEL MAP OF THE STUDY AREA

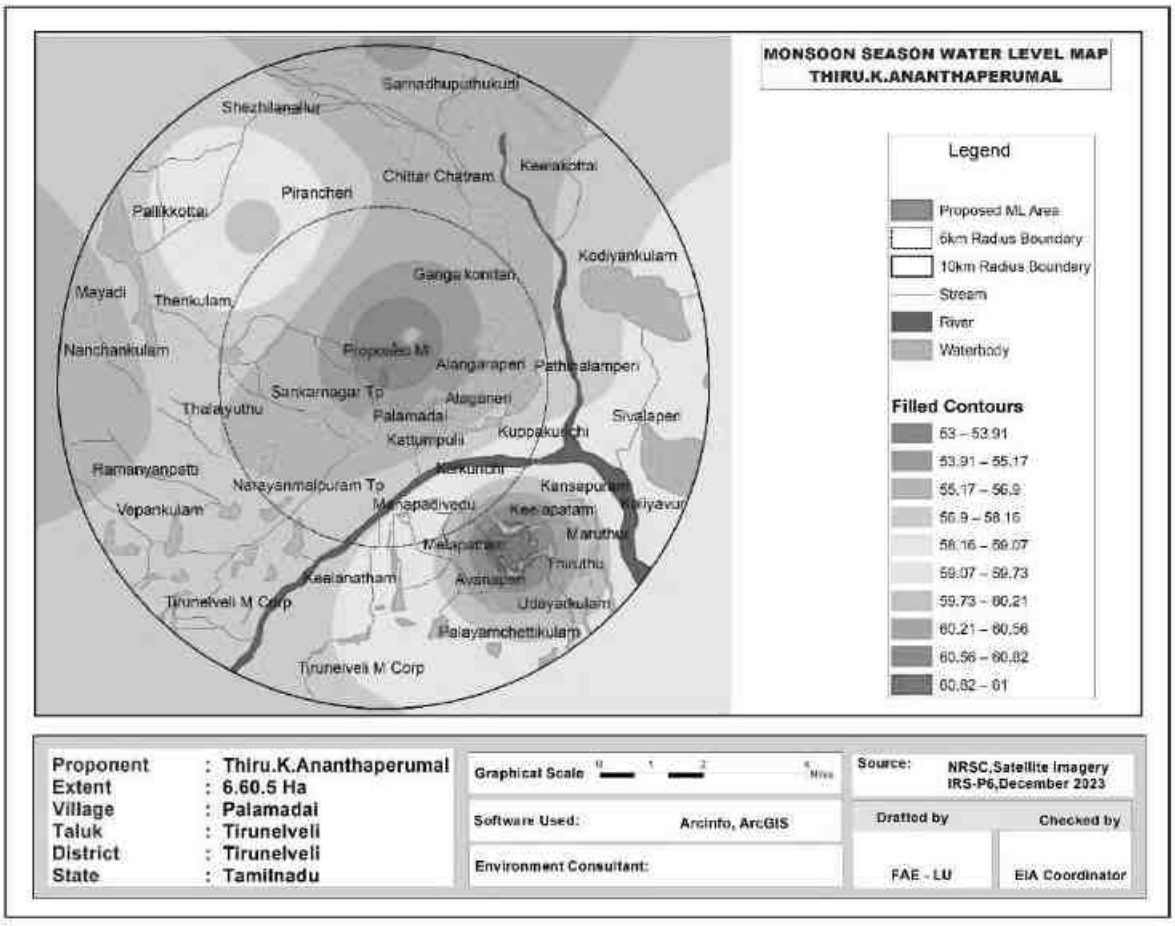


FIGURE 3.27 MONSOON WATER LEVEL MAP OF THE STUDY AREA

3.12.5 FIELD INVESTIGATION

The temporary seasonal streams water flow from center to outer most area. There is Thamirabarani River is located at a distance of 3.42 km in South Eastern side direction away from the 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 is 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

4.1. 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 Semi 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

4.2. LAND ENVIRONMENT

This is a proposed Rough Stone Quarry & Gravel Quarry of N.Mohammed Saleem Badhusha at S.F. No. 812 (part)over an extent of 1.95.0 in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State. The method of mining is Opencast Semi mechanized with a bench width and height of 5m. It is proposed to excavate to 2,31,420 m^3 of Rough Stone and 30,772 m3 Gravel formation upto a depth of 37 m (BGL) 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 Patta land. The project area of 1.95.0 Ha boundary barrier except in eastern direction. It is proposed to be altered by effective quarrying operation such as excavation (1.54.0 Ha), Infrastructure (0.01), Road (0.01.0 Ha) and green belt will be developed in the safety zone of 0.39.0 Ha. The ultimate depth of quarrying is proposed with maximum depth of 37m BGL and will not intersect the ground water table.

4.3 ANTICIPATED IMPACTS AND MITIGATION MEASURES

<table>
<tr><th>Aspect</th><th>Impact</th><th>Mitigation measures</th></tr>
<tr><td>Topography</td><td>The area is exhibits hilly terrain covered by rough stone formation. 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 SO_2, NO_x, PM_{10}, $PM_{2.5}$, 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>Nil</td><td>1.54.0</td></tr>
<tr><td>Infrastructure</td><td>Nil</td><td>0.01.0</td></tr>
<tr><td>Roads</td><td>Nil</td><td>0.01.0</td></tr>
<tr><td>Green Belt</td><td>Nil</td><td>0.39.0</td></tr>
<tr><td>Unutilized</td><td>1.95.0</td><td>Nil</td></tr>
<tr><td>Total</td><td>1.95.0</td><td>1.95.0</td></tr>
</table></td><td>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 37m Below ground level. 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>1.54.0</td></tr>
<tr><td>Green Belt</td><td>0.39.0</td></tr>
<tr><td>Remaining area</td><td>0.02.0</td></tr>
<tr><td>Total</td><td>1.95.0</td></tr>
</table>
At the mine closure stage, 1.54.0 Ha of lease area will be left as rain water harvesting pond. 1.54.0Ha 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="3">Azadirachta indiaca</td><td>500</td><td rowspan="3">3m x 3m</td><td rowspan="3">80%</td></tr>
<tr><td>II</td><td>-</td></tr>
<tr><td>III</td><td>-</td></tr>
</table></td></tr>
</table>

<table>
<tr>
<td></td>
<td>The ultimate pit dimension of the mine lease area is given below.

<table>
<tr><th colspan="4">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>Depth (max) (m)</th></tr>
<tr><td>I</td><td>157</td><td>98</td><td>37 m Below ground level</td></tr>
</table>

If mining is not done systematically it will leads to the dumping failure in the mining area.</td>
<td>
<table>
<tr><td>IV</td><td></td><td>-</td><td></td><td></td></tr>
<tr><td>V</td><td></td><td>-</td><td></td><td></td></tr>
<tr><td colspan="2">Total</td><td>500</td><td></td><td></td></tr>
</table>
Due to the thick vegetation around the mine lease area and sprinkling of water around the haul roads the dust emissions arises 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 is proposed to quarry 5m bench height and 5m width with 80^0 slope and with conventional opencast semi-Mechanized method. As per the approved mining plan a safety distance of 7.5m 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.</td>
</tr>
<tr>
<td>Drainage</td>
<td>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.</td>
<td>As per the approved mining plan the ultimate pit limit is 37m (BGL). The ground water table is reported as 62m. In the proposed mining plan only 37m 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.</td>
</tr>
<tr>
<td>Soil Quality and Agriculture</td>
<td>In monsoon seasons due to the excavation of minerals soil erosion and sediment deposition will occur in the nearby water bodies.</td>
<td>It is proposed to quarry upto a depth of 37m below ground level and the nearby water table is 62 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.</td>
</tr>
</table>

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 37m in summer and 59m in rainy seasons. In the post mining stage the quarried out pit will be used for rainwater harvesting.

4.4 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

4.5 WATER ENVIRONMENT

4.5.1 Impact on Surface Water Resources

There is no seasonal or perennial 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.

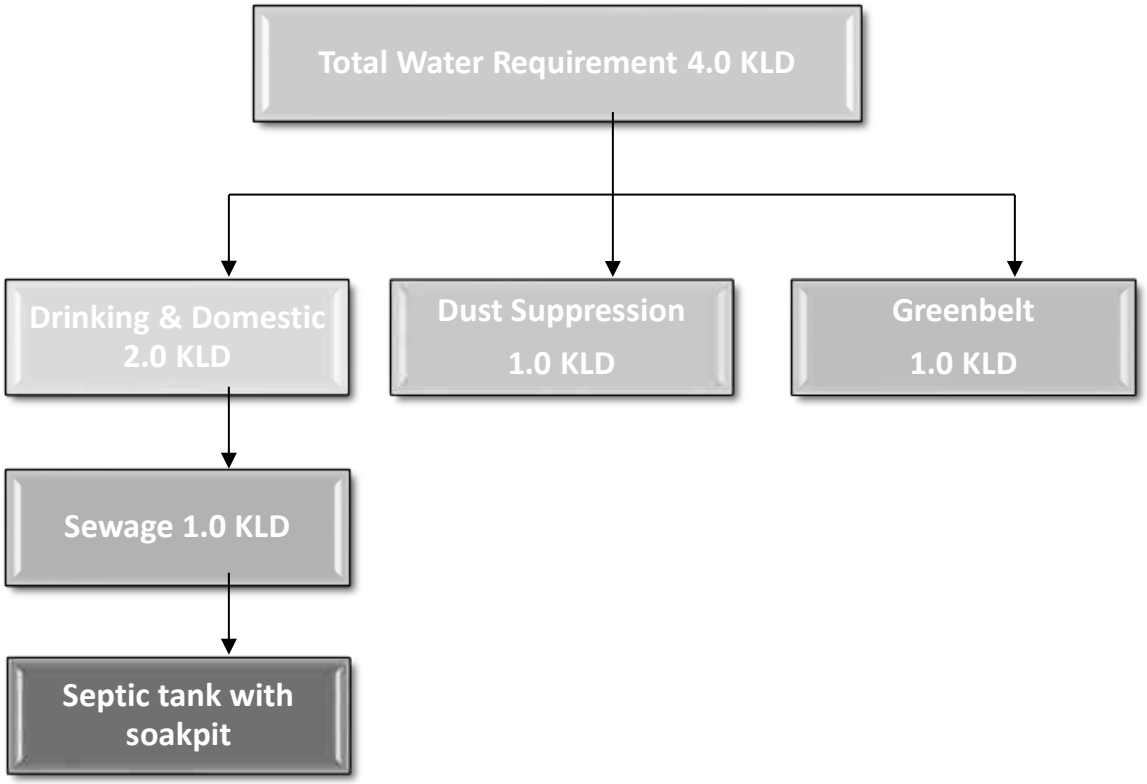
The pond is situated at a distance of 48^0 m in north direction. Thamirabarani River is located at a distance of 3.42 km in south direction of the proposed ML area. Water table is found at a depth of 62m.

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.

4.5.2 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 4.0 KLD which will be sourced from outside agencies. Negligible sewage of 1.0 KLD 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



4.5.3 Impact on Ground Water

The mining activity is not likely to intersect ground water as the ground water table occurs at a depth of 62m. The mining will go up to the maximum depth of 37 m BGL. 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.

4.5.4 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)

4.5.5 Ground water environment in buffer zone

The scenario of ground water in Tirunelveli District, Tirunelveli Taluk is given below.

TABLE 4.1 Ground Water Level Status in Tirunelveli 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	Tirunelveli	1,496.90	0.00	2,768.26	2,768.26	185	Over Exploited

Source:nwm.gov.in

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

4.6 VEGETATION

4.6.1 VEGETATION 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 0.39.0 Ha. Trees like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca will be

planted around the mine lease area. A total of 500 trees are planned to be planted. Spacing will be 3m x 3m.

4.6.2 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.

4.7 AIR ENVIRONMENT

4.7.1 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.

4.7.2 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.

4.7.3 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.

4.7.4 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 2,31,420 m3 of Rough Stone and 30,772 m3 of Gravel for a period of five years by the open-cast semi-mechanised mining method.

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

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

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

The AERMOD is actually a 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 in homogeneity of the planetary boundary layer special treatment of surface releases, irregularly shaped area sources, a plume model for the convective boundary layer, limitation of vertical mixing in the stable boundary layer, and fixing the reflecting surface at the stack base.

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

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

Salient features of the AERMOD model are given hereunder:

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

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

4.7.5 Sources of Dust Emission

The proposed mining is carried out by semi mechanized opencast method. The air borne particulate matter generated by ore handling operations, transportation and screening of ore is the main air pollutant. The emissions of sulphur dioxide (SO_2), Oxides of Nitrogen (NOx) contributed by diesel operated excavation/loading

equipment and vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions. Based on the various operations involved in the production of minerals, the various emission sources 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.

4.7.6 Emission Details

All the emissions discussed above are quantified for proposed maximum production of is 2,31,420 m3 of Rough Stone and 30,772 m3 of Gravel for a period of five years by the open-cast semi-mechanised mining method. The existing air quality levels are covered in the baseline scenario. Excavation, loading and transportation through tippers are the major sources, which are of significance. Therefore, the emissions considered for modeling are from drilling blasting, excavation & transportation rough stone.

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

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

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

4.7.7 Meteorological Data

The meteorological data recorded continuously during the month of February 2024 – April 2024 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.

4.7.8 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 0.23 µg/m^3 of PM 2.5 & 1.60 µg/m^3 of PM_{10} within the mine area, where mining operations are being carried out. The impact of mining operations would be negligible beyond 0.5 km.

Figure – 4.1 represents the spatial distribution of the predicted ground level concentrations of PM_{10} due to emissions from mine.

4.7.9 Emission sources & Quantification

Various point and non-point sources of emissions from Proposed Rough Stone Quarry of Thiru. N.Mohammed Saleem Badhusha is quantified and presented below:

Area Emissions – Total Material handling (Rough Stone)

Quantity, TPA	Rough Stone: 2,31,420 m3 Gravel: 30,772 m^3
Operational Hours Per Year	2400
Activity Rate, t/hr.	400.5416667
Emission of dust, g/t.	0.15
Emission of dust, g /hr.	55.07583333
Area of influence, m^2	625
Uncontrolled emission rate g/s/m^2	0.000016856
Controlled emission rate, PM10 g/s/m^2	0.000001685
Controlled emission rate, PM2.5 g/s/m^2	0.0000011237

(I) Line Source – Transport of Rough Stone from Pit to Boundary

Quantity, TPA	Rough Stone: 2,31,420 m3 Gravel: 30,772 m^3
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	44745
Lead length/trip, Km	0.12
Total VKT/Year	62751
Emission Kg/VKT	0.25
Total emission Kg/Year	18314.02
Uncontrolled emission rate g/s/m	2.809419
Controlled emission rate, PM10 g/s/m	0.2809419
Controlled emission rate, PM2.5 g/s/m	0.28094

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 %

FIG 4.2 Isopleth of GLC Prediction for $PM_{2.5}$

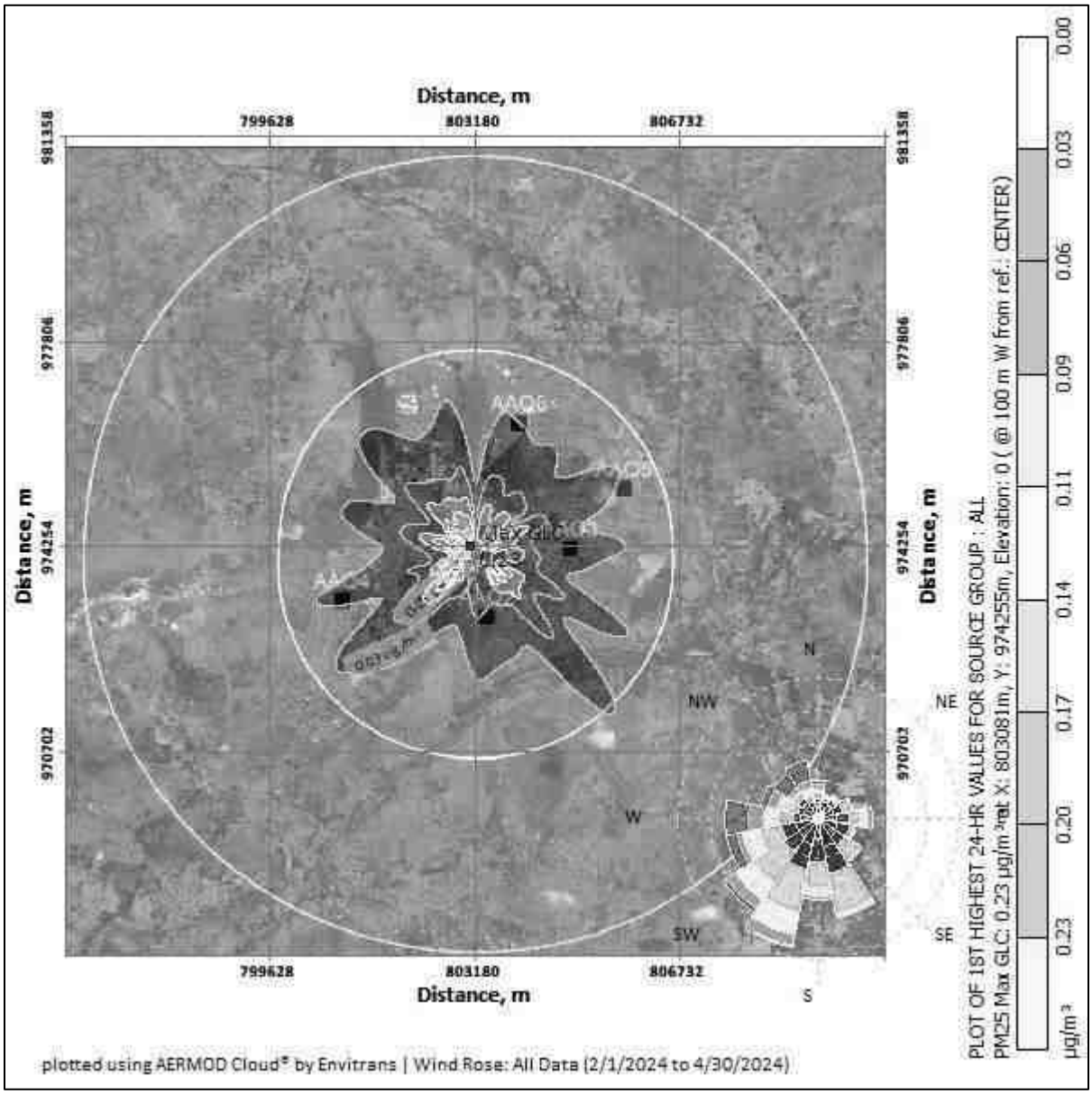


FIG 4.3 Isopleth of GLC Prediction for PM_{10}

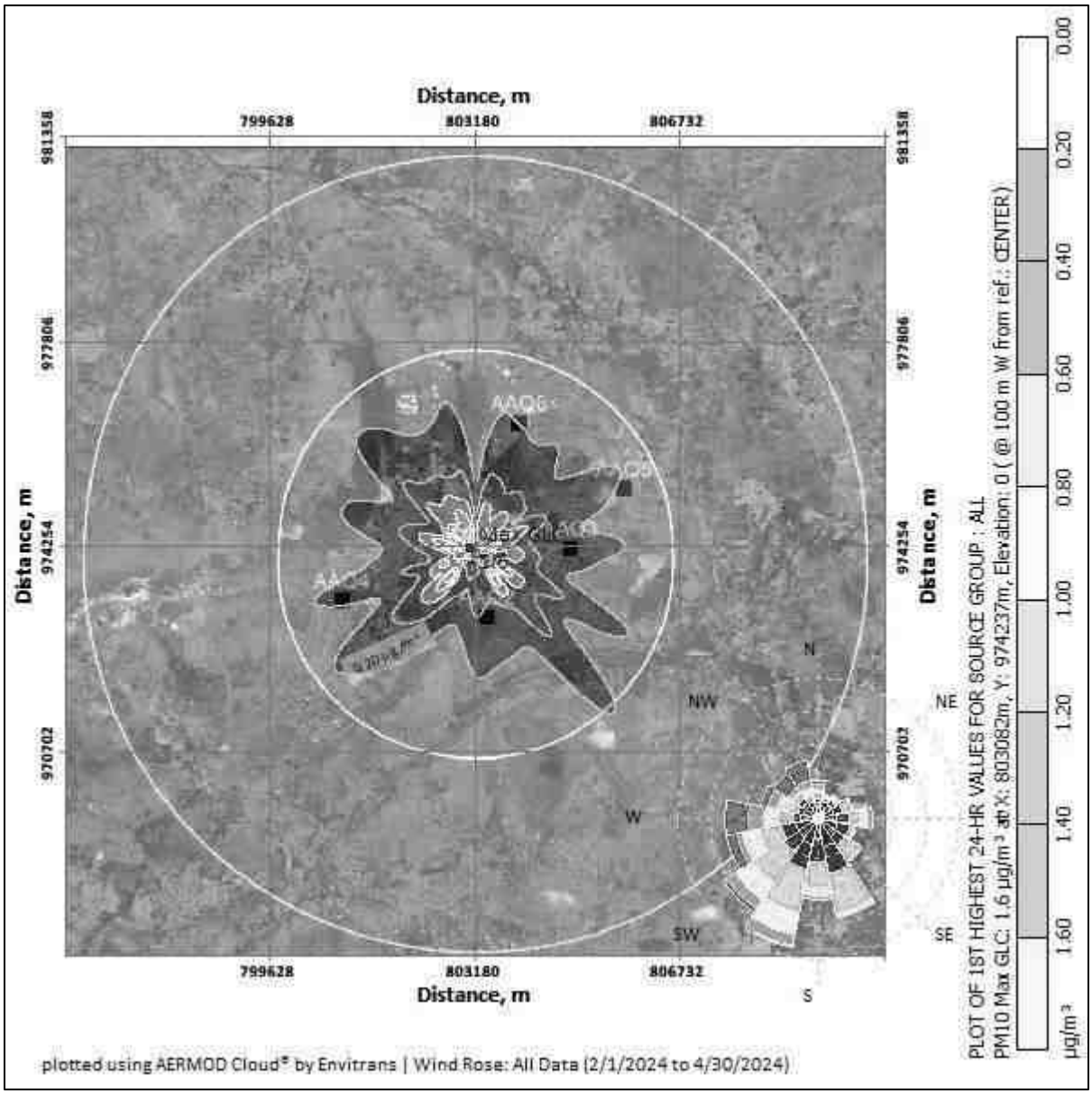


FIG 4.4 Isopleth of GLC Prediction –Cumulative for $PM_{2.5}$

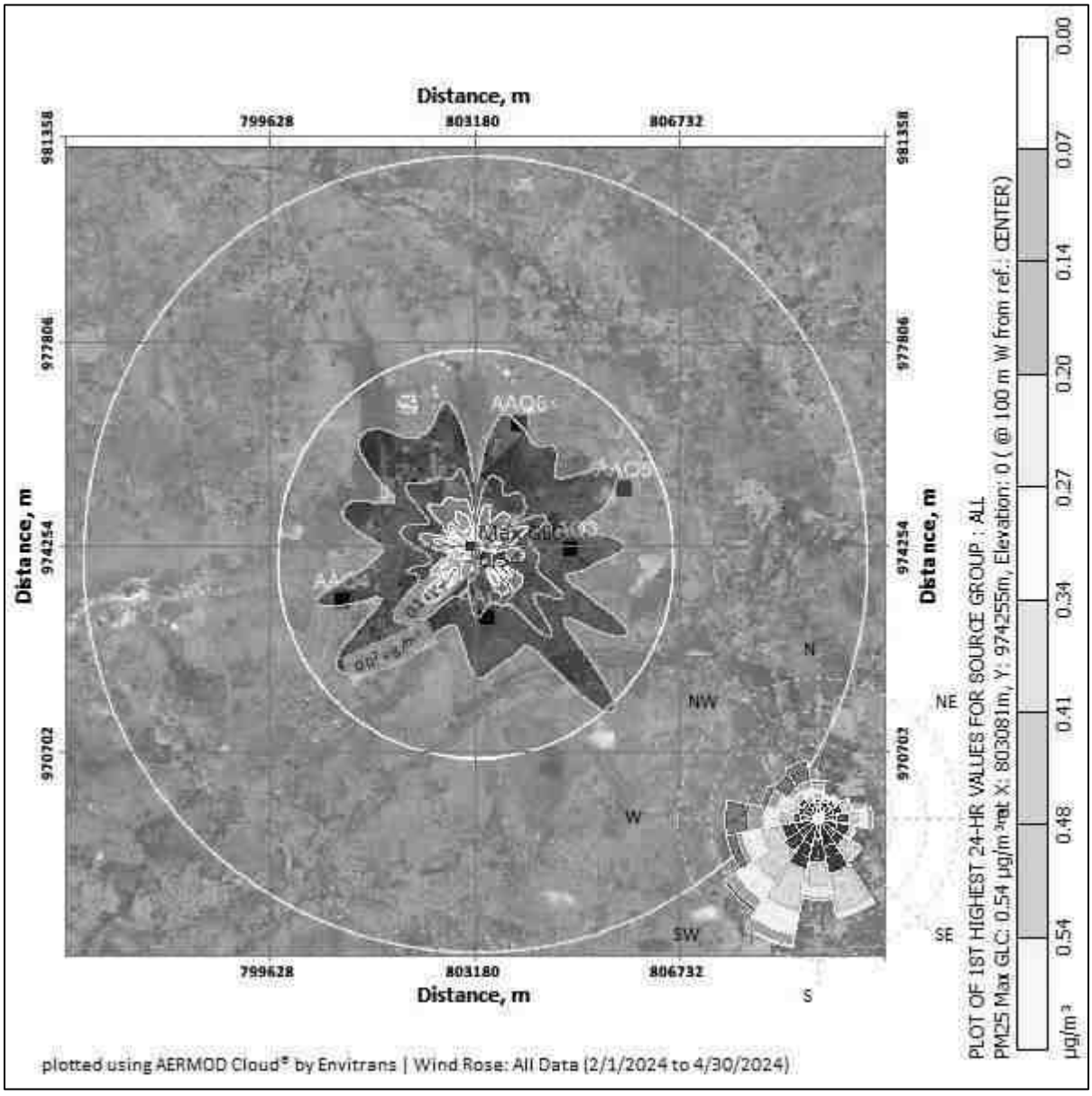
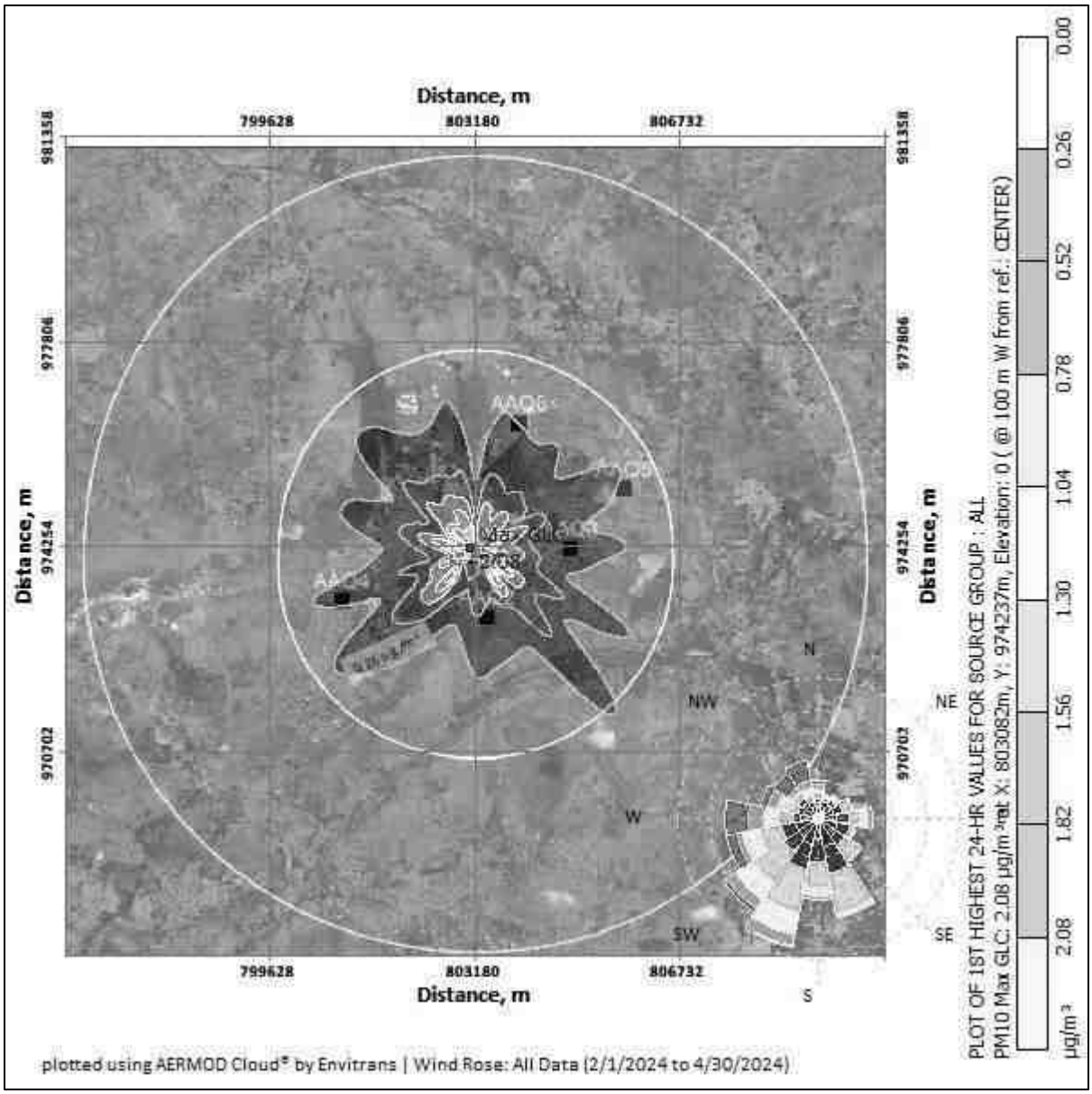


FIG 4.5 Isopleth of GLC Prediction –Cumulative for PM_{10}



PREDICTED AMBIENT AIR QUALITY:

The post project Concentrations of PM10, PM2.5, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.7 to 4.8.

Table 4.3 Concentrations of PM2.5 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu g/m^3$
1	Project site	26.80	0.23	27.03	60
2	Rajvirampuram	19.85	0.20	20.05	
3	Alangaraperi	21.95	0.17	22.12	
4	Vadakku Thalaiyuthu	27.30	0.14	27.44	
5	Pathinalamperi	23.55	0.09	23.64	
6	Aladipatti	22.35	0.06	22.41	

Table 4.3 Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in $\mu g/m^3$
1	Project site	62.25	1.60	63.85	100
2	Rajvirampuram	43.00	1.40	44.40	
3	Alangaraperi	51.50	1.20	52.70	
4	Vadakku Thalaiyuthu	58.50	1.00	59.55	
5	Pathinalamperi	48.90	0.60	49.50	
6	Aladipatti	49.10	0.20	49.30	

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 PM10 are in the range of 49.30 µg/m3 to 63.85 µg/m3 and for PM2.5 are in the range of 22.41 µg/m3 to 27.03 µg/m3 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.

4.8 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.

4.8.1 Likely Noise Levels in Lease Area due to mining activity

S.No.	Source Name	Noise Level in dB (A)
1	Diesel generator	92
2	Excavator Operation	90
3	Trucks movement	89
4	Drilling	100
5	Blasting	110

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 Rajvirampuram Village, Vadakku Thalaiyuthu Village, Pathinalamperi Village and Aladipatti 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	43.1	36.8
2	Rajvirampuram	1.61 Km, S	45.5	37.2
3	Alangaraperi	2.45 Km, E	44.3	38.1
4	Vadakku Thalaiyuthu	3.6 Km, W	44.4	36.6
5	Pathinalamperi	4.2 Km, NE	46.9	37.8
6	Aladipatti	3.6 Km, N	46.1	37.8

The noise levels are within the MoEF & CC limits of 55 dB(A) in the working area and in the buffer areas, the values are below the limit of 55 dB(A). Since, the residential area norm has been considered for all five 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)

4.8.2 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.

4.8.3 Mitigation measures for 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.

4.9 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 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

- 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.

4.10 SOCIO ECONOMIC IMPACT

The lease area is Patt land and the proponent has obtained tender from the government. The proponent has planned to spend INR 5, 00,000 for CER activities.

4.11 OCCUPATIONAL HEALTH

4.11.1 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, Rhematic 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

4.11.2 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.

4.12 WASTE MANAGEMENT

4.12.1 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.

4.12.2 Liquid Waste

There is no process effluent generation from this mine. Hence no liquid waste is generated. Domestic wastewater i.e 1.0 KLD will be discharged in soak pit via septic tank.

4.12.3 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 horses. The said hazardous waste are very negligible quantity , it will be properly collected in the source level, stored in impervious storage yards and disposed off as per the Hazardous waste (Trans-boundary Movement) Management Rules, 2016.

4.12.4 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.

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CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 ALTERNATE TECHNOLOGY

The mining technology is semi 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.

5.2 ALTERNATE SITE

The proposed project is a mining project and will be operated within the lease grant area. So, no alternate sites have been assessed. Since the resource (Rough Stone) is site-specific, the chosen location is the only site to carry out Rough Stone quarry.

CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 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.

6.2 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.

6.3 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	L_{eq}, L_{max}, L_{min}, L_{eq} Day & L_{eq} Night dB(A)	8 hour average samples Once in a 3 month
4	Soil	Physical and Chemical characteristics	Once per season

6.4 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 – 3.4, 3.10, 3.12 & 3.14.

6.5 MEASUREMENT METHODOLOGY

(a) Ambient Air Quality

Ambient air quality will be monitored for SO_2, NO_x, PM_{10} and $PM_{2.5}$. The instruments like high volume air samplers and Respirable dust samplers would be used for this purpose. These parameters will be monitored as mentioned in the monitoring schedule previously.

(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.

6.6 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.

6.7 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.

6.8 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

6.9 DETAILED BUDGET AND PROCUREMENT SCHEDULES

The budget planned for environmental monitoring is given below.

Table 6.3 - Environmental Management Plan Budget

Sl .No	Budget planned for	Capital Cost Amount (INR)	Recurring Cost/Annum Amount (INR)
1	Air Environment	9,85,000	6,470,00
2	Noise Environment	50,000	5,900,00
3	Water Environment	2,20,000	2,40,000
4	Implementation of EC, Mining Plan & DGMS Condition	11,91,000	**12,44,00**
5	GREEN BELT	2,50,000	30,000
	Additional Key EMP Expenses	9,50,000	10,000
Total		36,46,000	**27,66,000**

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 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 potential 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.

7.4 CUMULATIVE ENVIRONMENTAL IMPACT ASSESSMENT STUDY

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

	Table.7.2 Details of quarries within 500m radius (as per 500m certificate)					
Sl. No	Name and address	G.O. No. and Date	Village and Taluk	S.F.No.	Extent (in Ha)	Period of lease
Existing Quarries						
1	Thiru.P.K.S.Ahamad Meeran, S/o.Mohamed Sultan, 18, Puthu Amman Kovil Street, Sindhupundhurai, Tirunelveli Taluk and District.	Rc. No.M2/ 214/2023, dated. 20.09.2023	Gangaikondan Part-2 Village, Tirunelveli Taluk	1665/1B	2.10.5	06.10.2020 to 05.10.2025
2	Thiru.C.Rasheed Ali, S/o.Chinna Sheik Rowther, 9/100, Mela Pallivasal Street, Mela Thalaiyuthu, Sankar Nagar, Tirunelveli – 627357	Rc. No.M2/ 214/2023, dated. 20.09.2023	Gangaikondan Part-2 Village, Tirunelveli Taluk	1662/1A(P) (0.38.0) & 1663/1A (1.21.5)	1.59.5	21.01.2022 to 20.01.2032
	Extent: 3.70.0 Ha					
Abandoned Quarries:						

1	C.Shanmugavel	Rc. No. M2/32387/1999 Dated 14.07.1999	Naranammalpuram Village	817/2	2.18.0 Ha	Abandoned quarry
2	A.P Maharaja	Rc. No. M3/17064/2004 Dated 05.08.2004	Naranammalpuram Village	824/3A	0.80.97	Abandoned quarry
3	R.P.S Krishnan	Rc. No. M3/113038/2005 Dated 28.02.2006	Naranammalpuram Village	824/1 & 825	1.74.0	Abandoned quarry
4	P.Katchimydeen	Rc. No. M3/99246/2004 Dated 20.11.2004	Naranammalpuram Village	817/1B1C	1.62.0	

Proposed Quarries

S.No.	Name and address	Village & Taluk	S.F.No.	Extent (in Ha)	Remarks
1	Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District – 627357.	Naranammalpuram Part-1 Village, Tirunelveli Taluk	812(P)	1.95.0	Proposed quarry
2	Thiru.K.Ananthaperumal, S/o.Kanniah, 160D/8, Polepettai West, Thoothukudi District.	Palamadai Village, Tirunelveli Taluk	414/1, 415A/1A & 415A/2A	6.60.5	Instant proposal
3	Thiru.N.Mohideen Sheik Shahith, S/o.Navaskhan, 1/19, Muthu Nagar, Sankar Nagar, Tirunelveli – 627 357.	Naranammalpuram Part-1 Village, Tirunelveli Taluk	807	1.94.50	Proposed quarry

4	Thiru.A.Kothar Mydeen, S/o.Ahamed Meeran, Thenkulam, Tirunelveli.	Gangaikondan Village, Tirunelveli Taluk	1660/4	1.62.0	Proposed quarry
Total Extent: 15.82.0 Ha					

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

7.5 AIR QUALITY IMPACT PREDICTION FOR THE CLUSTER

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

Emission sources & Quantification of the cluster area.

Various point and non-point sources of emissions from Proposed Rough Stone Quarry of Thiru. N.Mohammed Saleem Badhusha is quantified and presented below:

Area Emissions – Total Material handling (Rough Stone)

Quantity, TPA	Rough Stone: 2,31,420 m3 Gravel: 30,772 m^3
Operational Hours Per Year	2400
Activity Rate, t/hr.	400.5416667
Emission of dust, g/t.	0.15
Emission of dust, g /hr.	55.07583333
Area of influence, m^2	625
Uncontrolled emission rate g/s/m^2	0.000016856
Controlled emission rate, PM10 g/s/m^2	0.000001685
Controlled emission rate, PM2.5 g/s/m^2	0.0000011237

(II) Line Source – Transport of Rough Stone from Pit to Boundary

Quantity, TPA	Rough Stone: 2,31,420 m3 Gravel: 30,772 m^3
Operational Hours Per Year	2400
Capacity of each Dumper (T)	10
Total No. of Tippers/ year	44745
Lead length/trip, Km	0.12
Total VKT/Year	62751
Emission Kg/VKT	0.25
Total emission Kg/Year	18314.02
Uncontrolled emission rate g/s/m	2.809419
Controlled emission rate, PM10 g/s/m	0.2809419
Controlled emission rate, PM2.5 g/s/m	0.28094

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 %

FIG 7.2 Isopleth of GLC Prediction for $PM_{2.5}$

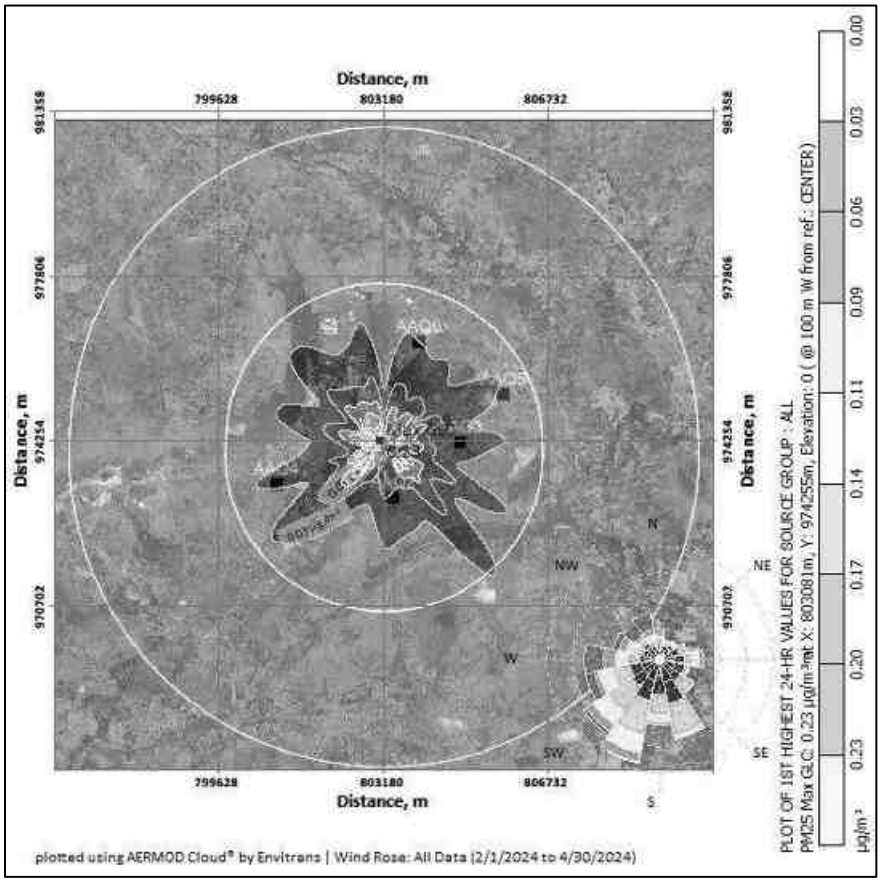


FIG 7.3 Isopleth of GLC Prediction for PM_{10}

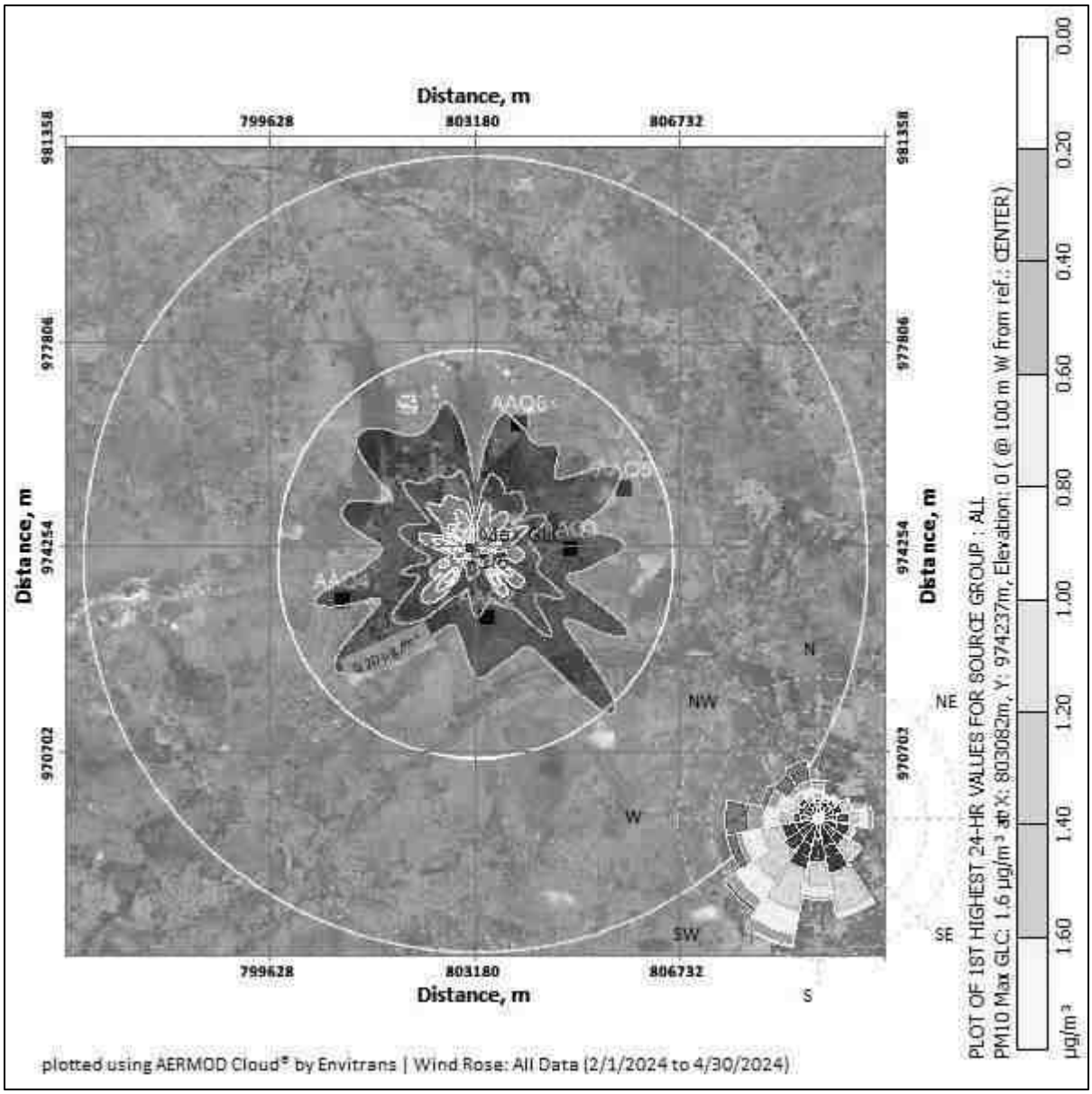


FIG 7.4 Isopleth of GLC Prediction –Cumulative for $PM_{2.5}$

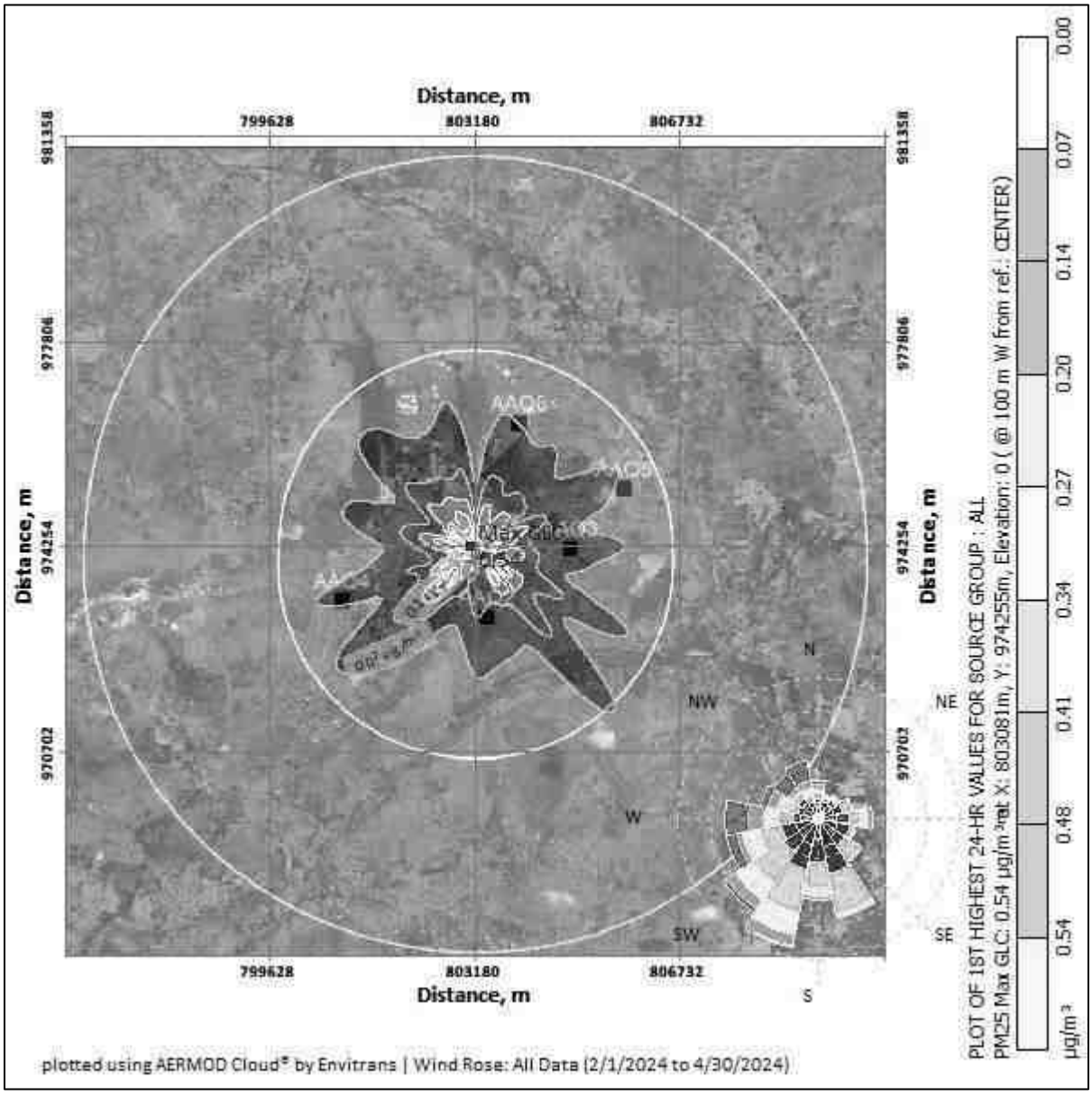
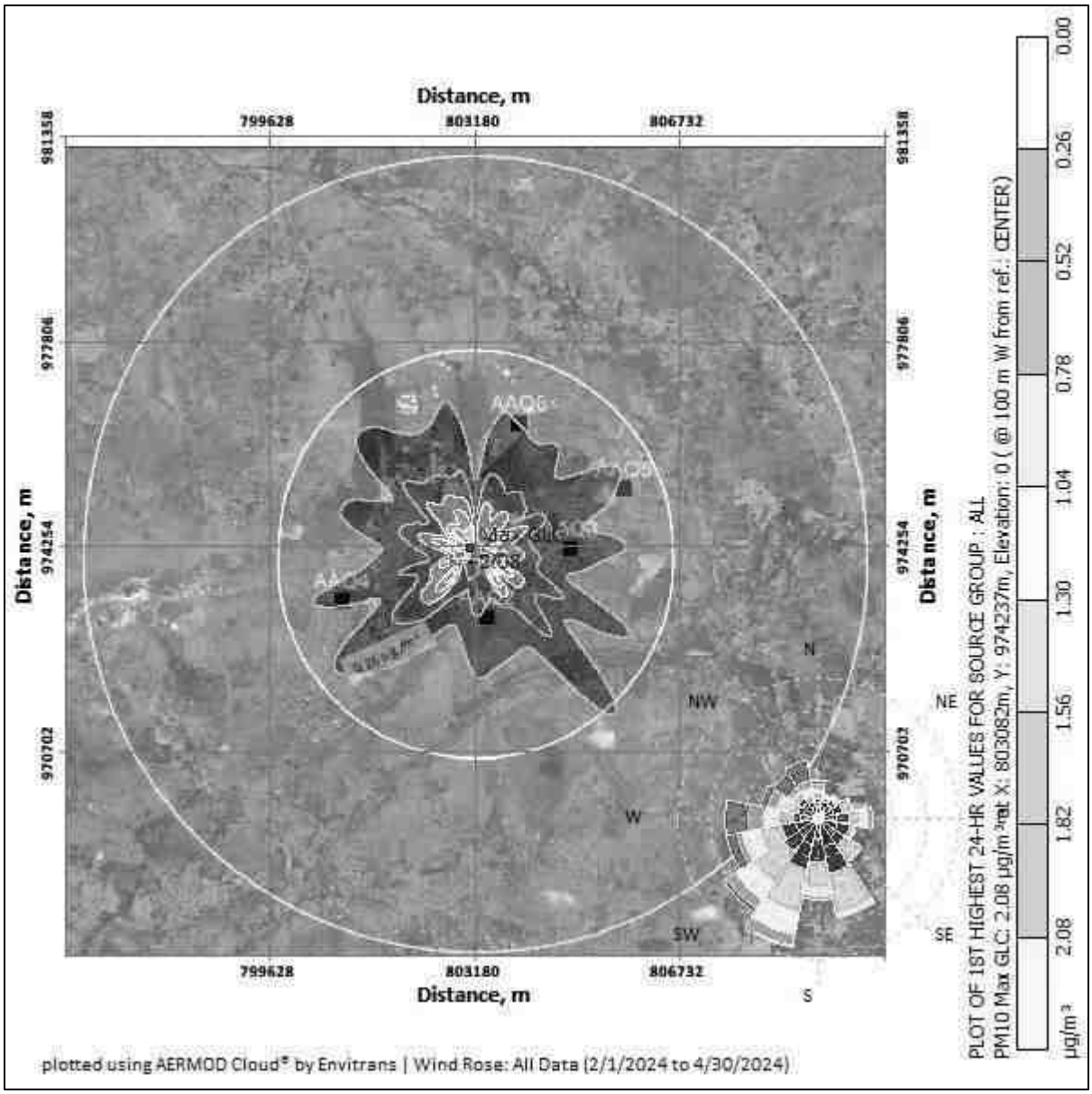


FIG 7.5 Isopleth of GLC Prediction –Cumulative for PM_{10}



PREDICTED AMBIENT AIR QUALITY:

The post project Concentrations of PM10, PM2.5, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.7 to 4.8.

Table 7.3 Concentrations of PM2.5 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	Project site	26.80	0.23	27.03	60
2	Rajvirampuram	19.85	0.20	20.05	
3	Alangaraperi	21.95	0.17	22.12	
4	Vadakku Thalaiyuthu	27.30	0.14	27.44	
5	Pathinalamperi	23.55	0.09	23.64	
6	Aladipatti	22.35	0.06	22.41	

Table 7.4 Concentrations of PM10 after Project Implementation

SL. No	Location	Background Concentration	Predicted incremental Concentration	Post Project Concentration	Statutory Limits in µg/m³
1	Project site	62.25	1.60	63.85	100
2	Rajvirampuram	43.00	1.40	44.40	
3	Alangaraperi	51.50	1.20	52.70	
4	Vadakku Thalaiyuthu	58.50	1.00	59.55	
5	Pathinalamperi	48.90	0.60	49.50	
6	Aladipatti	49.10	0.20	49.30	

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 49.30 µg/m³ to 63.85 µg/m³ and for $PM_{2.5}$ are in the range of 22.41 µg/m³ to 27.03 µg/m³ 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.

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 three leases are provided below:

Table 7. 6 – Impact on Traffic

Quarry	Description	Rough Stone Production Per day in tons	No. of Lorry Load per day
P1		620	24
P2		72	35
Total			**59**

The proposed projects will bring 59 trips per day. The existing road can absorb this additional traffic due to this project. Various measures like proper maintenance of road, covering of the loaded truck with tarpaulin, water sprinkling will be carried out to ensure no adverse impact on the logistical front.

7.6 HYDROGEOLOGICAL STUDY

The pond is situated at a distance of 480 m in north direction. Thamirabarani River is located at a distance of 3.42 km in southern direction of the proposed ML area. Due to the presence of these water bodies nearby, a detailed hydrogeological study has been done. As suggested in the Precise Area Communication letter, safety distances of 7.5m to adjacent Patta land.

7.7 SLOPE STABILITY STUDY

The proposed quarry is a very small quarry and the production is also less. Opencast Semi-mechanized mining with a bench height of 5m and bench width of 5m and 80° Slope is proposed. The depth of mining is proposed as 27m (BGL), which is the ultimate pit limit. Also, there is no overburden since the entire mined out material will be utilized.

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

- Strict adherence to DGMS norms
- Frequent inspection by Mines-in-charge/Mines Manager
- Bench height, width, slope will be as per DGMS norms

7.8 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 mines office.

7.9 MINE CLOSURE PLAN

The quarrying operation is proposed up to a depth of 37m (BGL) only, which will be achieved in 5 years. The ultimate pit dimension will be 157 x 98 x (37 BGL). 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

The project area is located on Patta 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.

The mining activity at proposed Rough Stone of N.Mohammed Saleem Badhusha cluster will create direct employment opportunity for 27 local people. As per MOEF & CC Notification CER cost is arrived for an amount of 2.64 Lakhs @ 2% of the project cost. However, the project proponent has revised CER cost as 8.0 Lakhs for project surrounding schools development.

CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

Environmental Cost Benefit Analysis is recommended during the scoping stage, if needed. In the ToR granted by SEIAA, Tamil Nadu it is not recommended. Hence not applicable.

CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 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.

10.2 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	The pond is situated at a distance of 2.12 m in SE direction. Thamirabarani River is located at a distance of 3.42 km in Eastern direction of the proposed ML area. Adequate safety distance is left. No dumping of material or discharge will be done in or near the river or water body.

	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 done 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 37 m above ground level, Water table is found at a depth of 62m, hence the project will not intersect the Ground water table during entire quarry period.
Water Consumption and Wastewater generation	Water required for this project will be sourced from vendors.
	Domestic wastewater generation of 1.0 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 (7.5 m and 10m) 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 are carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring.
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 no overburden anticipated during the quarrying operation.
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.

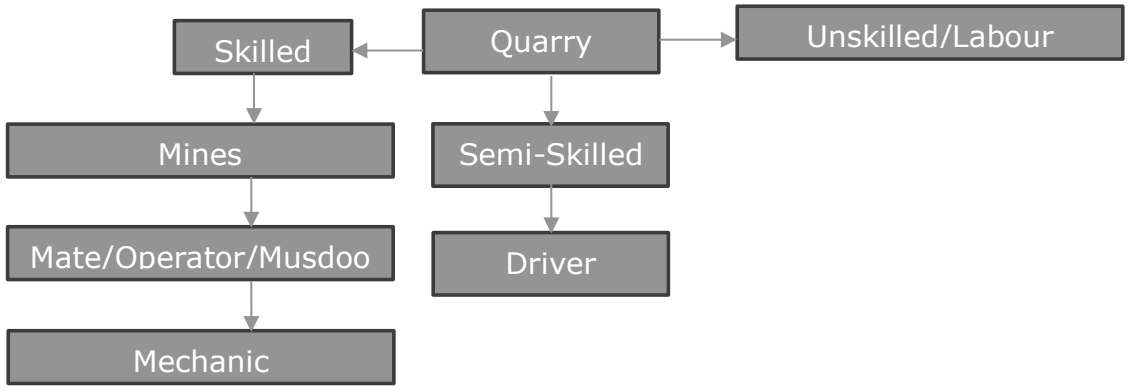
10.3 ADMINISTRATION AND TECHNICAL SETUP

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.

Fig. 10.1 Organization Chart



1	Skilled	Mines Manager	2 No
		Foreman/Mate	1 Nos
		Operator	2Nos
		Mechanic	1 No
2	Semi-Skilled	Diver	10Nos
3	Un-skilled	Labours	10 Nos
		Total	27 Nos

10.4 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 N.Mohammed Saleem Badhusha 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.

10.5 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.

10.6 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

Sl .No	Budget planned for	Capital Cost Amount (INR)	Recurring Cost/Annum Amount (INR)
1	Air Environment	9,85,000	6,470,00
2	Noise Environment	50,000	5,900,00
3	Water Environment	2,20,000	2,40,000
4	Implementation of EC, Mining Plan & DGMS Condition	11,91,000	12,44,00
5	GREEN BELT	2,50,000	30,000
	Additional Key EMP Expenses	9,50,000	10,000
Total		**36,46,000**	**27,66,000**

10.5 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 189.3 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 INTRODUCTION

Thiru. N.Mohammed Saleem Badhusha has obtained Precise Area Communication Letter from Joint Director/Assistant Director (i/c), Department of Geology and Mining, Tirunelveli to quarry out 2,31,420 m^3 of Rough Stone and 30,772 m^3 of Gravel from an extent of 1.95.0 Ha located in S.F. No. 812 (P) at Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough Stone and Gravel Quarry of N.Mohammed Saleem Badhusha 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. TO24B0108TN5151802N, dated 14.05.2024. This report has been prepared in line with the approved TOR for production of maximum excavation of 2,31,420 m^3 of Rough Stone and 30,772 m^3 of Gravel.

S.No.	Description	Status/Remarks
1.	Sector	1(a), non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone and Gravel
4.	Type of Lease	Fresh Lease
5.	Extent of the lease	1.95.0 Ha
6.	Proposed depth of Mining	37m (BGL)
7.	Method of mining	Opencast Semi-mechanized
8.	Proposed lease period	5 Years
9.	Proposed Environmental Clearance	10 Years
10.	Proposed production quantity for five years	Rough Stone - 2,31,420 m^3 Gravel-30,772 m^3

The Lessee .Mohammed Saleem Badhusha is an individual with sound experience in the identification, quarrying and marketing of Rough Stone. The proposed land is a Patta land and the proponent has obtained tender from the government and attached as **Annexure 2.**

11.2 LOCATION

This project site is located in Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State with Latitude 08°48'15.51"N to 08°48'21.48"N and Longitude: 77°44'57.62"E to 77°45'03.02"E. with Survey of India Topo Sheet No. 58-H/13. 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. Febuary 2024 to April 2024)

11.3 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 $N45^0E$ – $S45^0W$ with vertical dipping.

11.4 PROJECT DESCRIPTION

This is a proposed Rough Stone quarry by Opencast Semi-mechanized mining method with drilling and blasting. The quarrying is restricted up to a depth of 40m above ground level. The geological reserves is estimated to be 6,80,260 m3 of Rough Stone and 38,872 m3 Gravel. The mineable reserve calculated by deducting 10m safety distance and bench loss. The mineable reserves is 2,31,420 m3 of Rough Stone and 30,772 m3 Gravel which will be recovered at the rate of 100% recovery upto a depth of 37m Below ground level for the period of five years.

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 80° slope using conventional Open cast Semi-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.

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	Fresh project
3	Category	B1
4	Nature of mineral	Rough Stone and Gravel
5	Production	2,31,420 m^3 of Rough Stone 30,772 m^3 of Gravel
6	Life	5 years
7	Waste generation and management	There is no overburden anticipated during the quarrying operation. Hence, no waste generation.
8	Bench height and width	Height and Width – 5m
9	Ultimate pit depth	37m (BGL)
10	End use	Rough Stone will be loaded into tippers to needy buyers for producing aggregates, M-sand.

11.5 PROJECT REQUIREMENTS

The requirements of the project is given below.

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 4KLD which will be procured from the outside agencies. Out of 4.0 KLD, drinking water requirement is 1.0 KLD, Green belt development and dust suppression is 1 KLD.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid.
3	Manpower requirement	Permanent employees – 17, temporary employees – 10

4	Financial requirement	The total project cost as per AMP will be INR 71,10,000 including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 8.0 Lakhs is allocated. In addition, any demand raised by people during public hearing will also be met.

11.6 DESCRIPTION OF LEASE AREA

The features in the study area is given below.

<table>
<tr><th>S.No.</th><th>Areas</th><th colspan="3">Distance from project site</th></tr>
<tr><td>1</td><td>Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value</td><td colspan="3">Nil within 15km radius</td></tr>
<tr><td>2</td><td colspan="4">Areas which are important or sensitive for ecological reasons</td></tr>
<tr><td rowspan="8">A</td><td rowspan="8">Wetlands, water courses or other water bodies,</td><td>Water bodies</td><td>Distance</td><td>Direction</td></tr>
<tr><td>Seasonal Odai</td><td>54m</td><td>E</td></tr>
<tr><td>Seasonal Odai</td><td>56m</td><td>W</td></tr>
<tr><td>Odai</td><td>515m</td><td>N</td></tr>
<tr><td>Tirunelveli Canal</td><td>750</td><td>S</td></tr>
<tr><td>Thamirabarani River</td><td>3.2km</td><td>Se</td></tr>
<tr><td>Chittar River</td><td>5.9km</td><td>E</td></tr>
<tr><td>Rajavallipuram kulam</td><td>780km</td><td>S</td></tr>
<tr><td>Kalkurichi Kulam</td><td>4.2km</td><td>E</td></tr>
<tr><td>B</td><td>Coastal zone, biospheres,</td><td colspan="3">Nil within 10km radius</td></tr>
</table>

C	Mountains, forests	Gangaikondan R F – 1.75km (NE), Thalaiyuthu R F – 2.1km (W), Mel Pattam R F – 3.9km (SE), Sivalaperi R F – 9.4km (E)
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	Palamadai – 1.2 km in SE
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Palamadai – 1.2 km in 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 February to April 2024.

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

11.7 AIR ENVIRONMENT

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

TABLE 3.3: DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS

S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ 1	Project site	Core Zone	08°48'10.57"N 77°45'06.01"E
2	AAQ 2	Rajvirampuram	1.61 Km, S	08°47'26.42"N 77°45'17.36"E
3	AAQ 3	Alangaraperi	2.45 Km, E	08°48'28.3"N 77°4'28.1"E
4	AAQ 4	Vadakku Thalaiyuthu	3.6 Km, W	08°47'41.46"N 77°43'16.12"E
5	AAQ 5	Pathinalamperi	4.2 Km, NE	08°49'13.62"N 77°47'13.33"E
6	AAQ6	Aladipatti	3.6 Km, N	08°50'9.62"N 77°45'46.25"E

Station ID	Min	Max	Avg.
Particulate matter PM-$_{2.5}$ (µg/m^3)			
AAQ-1	23.8	29.8	26.8
AAQ-2	16.6	23.1	19.85
AAQ-3	20.7	26.5	21.95
AAQ-4	23.1	31.5	27.3
AAQ-5	21.3	25.8	23.55
AAQ-6	19.4	25.3	22.35
CPCB NAAQS 2009 for PM $_{2.5}$ - 60 µg/m^3			
Particulate matter PM-$_{10}$ (µg/m^3)			
AAQ-1	57.3	67.2	62.25
AAQ-2	36.1	49.9	43
AAQ-3	46.3	56.7	51.5
AAQ-4	49.2	67.1	58.5
AAQ-5	44.5	53.3	48.9
AAQ-6	42.5	55.7	49.1
CPCB NAAQS 2009 for PM $_{10}$ - 100 µg/m^3			
Sulphur Di-oxide as SO_2 (µg/m^3)			
AAQ-1	3.5	4.9	4.2
AAQ-2	3.1	5.6	4.35
AAQ-3	3.2	4.9	4.05
AAQ-4	5.5	10.4	7.95
AAQ-5	3.1	5.4	4.25
AAQ-6	3.1	4.4	3.75

Station ID	Min	Max	Avg.
CPCB NAAQS 2009 for SO_2 – 80 µg/m^3			
Oxide of Nitrogen as NO_2 (µg/m^3)			
AAQ-1	7.2	9.5	8.35
AAQ-2	6.2	8.5	7.35
AAQ-3	6.7	8.9	7.8
AAQ-4	8.1	12.7	10.4
AAQ-5	6.9	9.2	8.05
AAQ-6	7.1	8.7	7.9
CPCB NAAQS 2009 for NO_2 – 80 µg/m^3			

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

11.8 WATER ENVIRONMENT

Table 3.7 Results of Ground Water sampling Analysis in 6 locations								**Specification/Limit (As per IS:10500: 2012)**	
Parameter	**Test Parameter**	**Unit**	**GW1**	**GW2**	**GW3**	**GW4**	**GW5**	**Desirable**	**Permissible**
Odour	-	AGREEABLE	AGREEABLE	Agreeable	AGREEABLE	AGREEABLE	AGREEABLE	Agreeable	Agreeable
Taste	NTU	<1	<1	<1.0	<1	<1	<1	Agreeable	Agreeable
pH	-	7.15	6.75	7.24	7.22	7.54	7.68	6.5 - 8.5	No Relaxation
Turbidity	µs/cm	1624	1720	144.1	1335	1597	1421	1	5
TDS	mg/l	975	1032	86.0	802	960	855	500	2000
Fluoride,(F)	mg/l	453	560	51.5	497	446	283	1	1.5
Total Alkalinity, (CaCO3)	mg/l	102	114	14.3	87.1	97.6	78.4	200	600
Total Hardness, (CaCO3)	mg/l	47.8	65.8	3.80	67.0	48.5	20.9	200	600
Calcium,(Ca)	mg/l	254	286	35.6	218	244	196	75	200
Calcium as CaCO3	mg/l	199	274	15.8	279	202	87.1		
Free Residual chlorine as Cl-	mg/l	452	316	40.4	333	439	356		
Chloride,(Cl)	mg/l	249	269	17.6	232	242	244	250	1000
Magnesium,(Mg)	mg/l	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)	30	100
Nitrate, (NO3)	mg/l	201	290	20.1	190	198	209	45	No Relaxation
Sulphate, (SO4)	mg/l	0.09	0.05	BDL (D.L - 0.01)	0.08	0.06	0.04	200	400
Iron,(Fe)	mg/l	3.25	4.56	BDL (D.L - 1.0)	3.56	3.72	3.59	1	No Relaxation

Manganese, (Mn)	mg/l	0.32	0.51	BDL (D.L - 0.1)	0.49	0.41	0.57	0.1	0.3
Conductivity	mg/l	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)	Not Specified	Not Specified

All the values were found to be within permissible limits

11.9 NOISE ENVIRONMENT

Noise levels were measured in 5 locations and the results are given below.

Table 3.5 Noise sampling locations in the study area

S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	N1	Project site	Core Zone	08°48'10.57"N 77°45'06.01"E
2	N2	Rajvirampuram	1.61 Km, S	08°47'26.42"N 77°45'17.36"E
3	N3	Alangaraperi	2.45 Km, E	08°48'28.3"N 77°4'28.1"E
4	N4	Vadakku Thalaiyuthu	3.6 Km, W	08°47'41.46"N 77°43'16.12"E
5	N5	Pathinalamperi	4.2 Km, NE	08°49'13.62"N 77°47'13.33"E
6	N6	Aladipatti	3.6 Km, N	08°50'9.62"N 77°45'46.25"E

Table 3.8 Noise monitoring results

S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	Project site	43.1	36.8	55	45
2	Rajvirampuram	45.5	37.2		
3	Alangaraperi	44.3	38.1		
4	Vadakku Thalaiyuthu	44.4	36.6		
5	Pathinalamperi	46.9	37.8		
	Aladipatti	46.1	37.8		

11.10 SOIL ENVIRONMENT

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

Table 3.9 Results of Soil Sample Analysis

S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25 °C	-	6.67	7.55	7.24	7.43	7.96	7.24
2	Electrical Conductivity	µmhos/ cm	312.8	52.47	76.54	110.4	110.6	50.13
3	Dry matter content	%	98.94	94.32	97.93	95.41	98.44	92.81
4	Water Content	%	1.06	5.68	2.07	4.59	1.56	7.19
5	Organic Matter	%	0.94	1.72	1.62	2.14	1.21	0.76
6	Soil texture	-	LOAM	LOAM	CLAY LOAM	SILT LOAM	Sandy Clay loam	Clay loam
7	Grain Size Distribution	%	45.95	42.06	28.41	27.22	44.38	29.46
	i. Sand							
8	ii. Silt	%	45.09	38.37	33.08	53.54	27.65	40.68
9	iii. Clay	%	8.97	19.57	38.51	19.24	27.97	29.86
10	Phosphorous as P	mg/kg	1.58	2.66	2.13	3.21	0.97	1.56
11	Sodium as Na	mg/kg	905	434	373	264	388	512
12	Potassium as K	mg/kg	775	642	507	527	632	723
13	Nitrogen and Nitregenous Compounds	mg/kg	275	475	453	635	292	163
14	Total Soluble Sulphate	%	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	%	23.6	25.4	27.1	22.2	20.9	22.7
16	Water Holding Cabacity	Inches/ foot	3.5	3.6	3.1	3.7	3.5	3.2

11.11 BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided in to 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

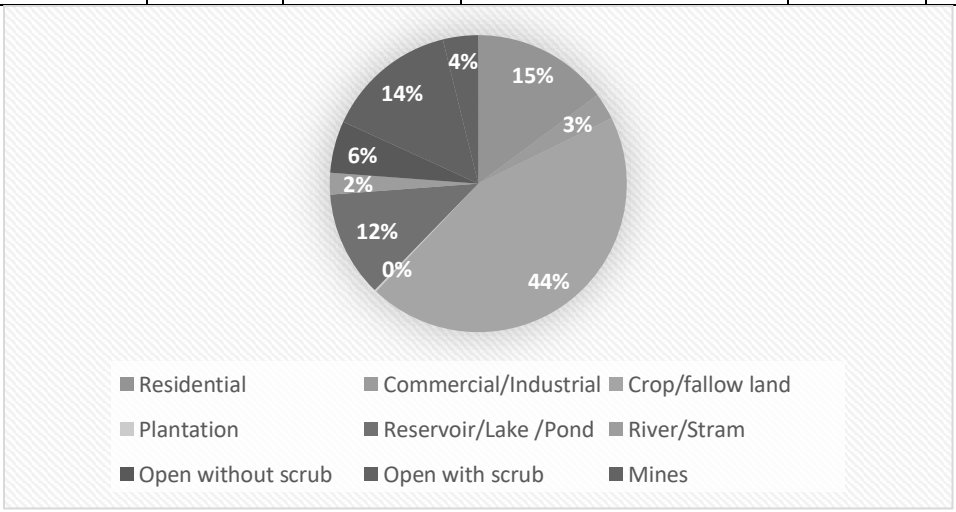
In the study area, commonly found animals like dogs, cats, bush rat, cows, birds like crow, Myna, Sparrow, etc were found.

11.12 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:

Table No. 3.17: Major Land Use Units of the Study Area in Percentage

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	57.85	17.75	Residential	48.38	14.84
				Commercial/Industrial	9.47	2.90
2	Agriculture	145.21	44.54	Crop/fallow land	144.5	44.33
				Plantation	0.71	0.22
3	Water bodies	45.28	13.89	Reservoir/Lake /Pond	37.60	11.53
				River/Stram	7.68	2.36
4	Waste Land	65.15	19.98	Open without scrub	18.44	5.66
				Open with scrub	46.71	14.33
5	Others	12.51	3.84	Mines	12.51	3.84
Total		326	100		326	100



11.13 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.

The Landuse expert visited more than 3 villages in the study area namely Gangaikondan , Thathanuthu and Avanapperi, villages. Discussions were held with the people from nearby locality to study the social and economic conditions prevailing in the area. The expert also visited nearby hospitals, primary health centres and Senthamangalam.

The following observations were made.

- Primary schools are available in many villages. For hospital facilities, people in the locality have to go to hospital in Palamadai which is about 1.2 SE km from the lease area.
- Major schools with higher secondary and senior secondary schools are located in Palamadai.
- The major Sendamangalam Union located in the area is Palamadai
- Facilities like petrol pump stations, ATM facility are available in Palamadai

11.14 HYDROGEOLOGY OF THE LEASE AREA

Since there is a pond is situated at a distance of 480 m in north direction. Thamirabarani River is located at a distance of 3.42 km in south direction of the proposed ML area. the hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

Thamirabarani River is the major river in the lease area. But there is no running water currently in the river. Only during monsoons, water gets stagnated at a few places.

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.

11.15 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 37m BGL. 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

11.16 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 37m BGL. 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, 1.54.0 Ha of lease area will be left as rain water harvesting pond. 1.54.0 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca are selected. A total of 400 trees are planned to be planted. Spacing will be 3m x 3m.

11.17 WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 4.0KLD 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 37m (BGL), 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.

- Palamadai Pond – 2.12 km (SE)
- Thalaiyuthu Kulam - 4.52km (W)
- Gangaikondan Kulam-5.02km (NE)

- Alagankulam Pond - 5.42km (SW)
- Molni Pond- 7.38km (SE)
- Indira Kulam (South Pond)- 8.57km (NE)
- Seeniyappa Kulam - 8.61km (SW)
- Pallamadai Kulam -8.76km (NW
- Kandiyapperi Pond-9.17km (SW)
- Elanthakulam - 10.00km (S)
- Thamirabarani River- 3.42km (S)
- Chittar River - 5.75km (E)

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

11.18 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.

11.19 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM_{10}, $PM_{2.5}$. Other than these pollutants, gaseous emissions of sulfur dioxide (SO_2) 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 of 10m and 7.5m barriers in the lease area.

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

11.20 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 90 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.

11.21 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 with in 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

11.22 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 8,00,000 for CER activities. This amount will be subjected to change after public hearing.

11.23 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, Rhematic 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.

11.24 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 152.84 Lakhs is allocated.

11.25 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 37 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.
- For CSR, INR 8,00,000 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 and 152.84 lakhs for the five 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/2326/IA 0110. 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 of 1.95.0 Ha, while total cluster area of 15.82.0 Ha at Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State.

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

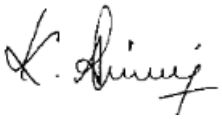
EIA Coordinator Name: M. Manikandan

Signature & Date

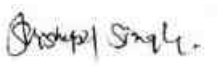
Period of involvement: February 2024 to April 2024.

Contact information:

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

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

6	*HG*	*Ravinthiran N*	*Hydrogeological feature of the area. Ground water depth and impact of project on ground water of the area.* *Period: Feb 2024 to April 2024.*	
7	*AQ*	*Srilatha Thiruveedhula*	*Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.* *Period: Feb 2024 to April 2024.*	
8	*NV*	*Dhanalakshmi Ramanathan*	*Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.* *Period: Feb 2024 to April 2024.*	
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.* *Period: Feb 2024 to April 2024.*	

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

TM-FAE:

S.No	Name of TM (FAE)	Functional Area	Approved FAE (to work under)	Period of involvement	Type of work	Signature
1	S. Kamaraj	GEO	Mr.Valliappan	*Period: Feb 2024 to April 2024.*	Associated with FAE in preparing Geological map, stability of quarry and dump, management plan for mine stability, after use of mining quarry and geological feature of the area	
2	M.Prabu	LU	T.Srilatha	*Period: Feb 2024 to April 2024. .*	Associated with FAE in preparing Land use map based on satellite imagery, Land use classification and analysis, Impact prediction on surrounding land environment	
		HG	Ashok Kumar		Associated with FAE in studying hydrogeological pattern of study area, Studying ground water and the impact of the project on ground water	
3	M. Manikandan	EB	S.Saravanan	*Period: Feb 2024 to April 2024.*	Associated with the expert in baseline data collection related to	

					ecology of the study area	
		SC	Shishupal Singh		Associated with the expert in Soil monitoring, secondary data collection on soil type, soil management practices, utilization of top soil	
4	Suresh	WP	*Abirami Kaliaperumal*	*Period: Feb 2024 to April 2024.*	*Air quality modeling utilizing the area source model. Predication of the ground level concentration of the dust. Suggesting suitable mitigation measures.* *Period: Oct 2023 to Dec 2023.*	
		AP	*Dhanalakshmi Ramanathan*		*Ambient noise study of the area. Incremental noise generation due to quarry operation and impact of the noise due to the project.* *Period: Oct 2023 to Dec 2023.*	

5	S.Kamaraj	SC	Shishupal Singh	*Period: Feb 2024 to April 2024.*	Associated with the expert in Soil monitoring, secondary data collection on soil type, soil management practices, utilization of top soil	
		RH	S.V.Prashant		Associated with the expert in Identification of the Risk related to the mining activities. Preparation of emergency disaster management plan. Plan for supply of safety equipment for the workers	

ANNEXURE-1

File No: 10714
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **14/05/2024**

To,

MOHAMMED SALEEM BADHUSHA
MOHAMMED SALEEM BADHUSHA
Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, No.1/19, Muthnagar, Sankarnagar, Tirunelveli-627357, Tirunelveli, TIRUNELVELI, TAMIL NADU, Tirunelveli, 627357
mohammedsaleem6070@gmail.com

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

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Rough Stone and Gravel Quarry at S.F.No. 812 (Part) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District of Thiru.N.Mohammed Saleem Badhusha submitted to SEIAA-TN vide proposal number SIA/TN/MIN/461092/2024 dated 02/04/2024.

Ref:

1. Online Proposal No. SIA/TN/MIN/461092/2024, dated: 15.02.2024
2. Your application submitted for Terms of Reference dated: 23.02.2024

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24B0108TN5151802N
(ii) File No.	10714
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Rough Stone and Gravel Quarry of Thiru.N.Mohammed Saleem Badhusha
(viii) Name of Company/Organization	MOHAMMED SALEEM BADHUSHA
(ix) Location of Project (District, State)	TIRUNELVELI, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact AssessmentAuthority (SEIAA) under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by State Environment Impact AssessmentAuthority(SEIAA) Appraisal Committee of SEIAA in the meeting held on 03/05/2024. 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.

5. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference 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).

6. 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 grant Terms of Reference for instant proposal of Thiru.MOHAMMED SALEEM BADHUSHA under the provisions of EIA Notification, 2006 and as amended thereof.

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

8. The Terms of Reference 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.

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

10. 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, Climate Change and 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 - 110 032.
3. The Chairperson, Tamil Nadu Pollution Control Board,
76, Mount Salai, Guindy, Chennai - 600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC,
Paryavaran Bhavan, CGO Complex, New Delhi - 110 003.
6. The District Collector, Tirunelveli District.
7. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Standard Conditions

S. No	Terms of Reference
1.1	**Cluster Management Committee**

S. No	Terms of Reference
	1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 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. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall furnish the Emergency Management plan within the cluster. 9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public. 10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety. 11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents. **Impact study of mining** 12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & soil biological, physical land chemical features . b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams. **Agriculture & Agro-Biodiversity** 13. Impact on surrounding agricultural fields around the proposed mining Area. 14. Impact on soil flora & vegetation around the project site. 15. 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. 16. 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. 17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife. 20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic,

S. No	Terms of Reference
	vulnerable and endangered indigenous flora and fauna. 21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 23. 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. 24. Erosion Control measures. 25. 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. 26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities. 28. 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. 29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. **Energy** 31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 32. 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. 33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock. **Mine Closure Plan** 34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued. 36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **Disaster Management Plan** 38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others**

S. No	Terms of Reference
	39. 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. 40. 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. 41. 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.
1.2	**SEIAA SPECIFIC CONDITIONS:** After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) for the quantity of 2,31,420 m^3 of Rough Stone and 30,772 m^3 of Gravel up to the ultimate depth of 37m below ground level and the annual peak production should not exceed 46,855 m^3 of Rough Stone and 19,992 m^3 of Gravel, along with Public Hearing** under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC.

2. Seac Conditions - Site Specific

S. No	Terms of Reference
2.1	1. The PP shall provide sufficient no. of waterholes within the Gangaikondan Spotted Deer Sanctuary by using an additional CER amount of Rs. **4 Lakhs** in consultation with concerned DFO. 2. As accepted by the Project proponent, Rs. **4 Lakhs** shall be included in the EMP and the amount shall be spent towards conservation measures for Gangaikondan Spotted Deer Sanctuary in consultation with the DFO, Tirunelveli.

3. Seac Standard Conditions

S. No	Terms of Reference
3.1	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

S. No	Terms of Reference
	details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. ● Highest production achieved in any one year ● Detail of approved depth of mining. ● Actual depth of the mining achieved earlier. ● Name of the person already mined in that leases area. ● If EC and CTO already obtained, the copy of the same shall be submitted. ● Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.

S. No	Terms of Reference
	18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with

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

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	An EIA-EMP Report shall be prepared for peak capacity (…..MTPA)operation in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
1.2	An EIA-EMP Report would be prepared for peak capacity operation to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling

S. No	Terms of Reference
	for..... MTPA of mineral production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
1.3	Propoer KML file with pin drop and coordinate of mine at 500-1000 m interval be provided
1.4	A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries, mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given. The above details to be furnished in tabular form also
1.5	Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
1.6	A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
1.7	Catchment area with its drainage map of 25 km area within and outside the mine shall be provided with names, details of rivers/ riverlet system and its respective order. The map should clearly indicate drainage pattern of the catchment area with basin of major rivers. Diversion of drains/ river need eloboration in form of lengthe, quantity and quality of water to be diverted
1.8	(Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
1.9	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
1.10	Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
1.11	A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.

S. No	Terms of Reference
1.12	Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified. Area under Surface Rights S.N ML/Project Land use Area under Surface Rights(ha) Area Under Mining Rights(ha) Area under Both (ha) 1 Agricultural land 2 Forest Land 3 Grazing Land 4 Settlements 5 Others (specify) S.N. Details Area (ha) 1 Buildings 2 Infrastructure 3 Roads 4 Others (specify) Total
1.13	Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
1.14	One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided. The detail of NABL/ MoEF&CC certification of the respective laborartory and NABET accreditation of the consultant to be provided.
1.15	Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
1.16	For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and

S. No	Terms of Reference
	accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area. In case of expansion, the displayed data of CAAQMS and its comparison with the monitoring data to be provided
1.17	A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.
1.18	The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data should be provided in EIA/ EMP report also occupational status & economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.
1.19	The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that area and what will be the compensatory measure to be adopted by PP to minimize the impact of forest diversion.
1.20	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
1.21	Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted
1.22	Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
1.23	Study on land subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
1.24	Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
1.25	PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs
1.26	PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of mineral. The measures adopted to conserve energy or use of renewable sources shall be explored

S. No	Terms of Reference
1.27	PP to evaluate the green house emission gases from the mine operation and corresponding carbon absorption plan.
1.28	Site specific Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan should be provided.
1.29	Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
1.30	Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
1.31	Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
1.32	The number and efficiency of mobile/static water jet, Fog cannon sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
1.33	Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
1.34	Adequate greenbelt nearby areas, mineral stock yard and transportation area of mineral shall be provided with details of species selected and survival rate Greenbelt development should be undertaken particularly around the transport route.
1.35	Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
1.36	Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.
1.37	CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
1.38	Corporate Environment Responsibility:
1.39	a) The Company must have a well laid down Environment Policy approved by the Board of

S. No	Terms of Reference
	Directors.
1.40	b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
1.41	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
1.42	d) To have proper checks and balances, the company should have a well laid down 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.
1.43	e) Environment Managament Cell and its responsibilities to be clearly spleel out in EIA/ EMP report
1.44	f) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
1.45	Status of any litigations/ court cases filed/pending on the project should be provided.
1.46	PP shall submit clarification from DFO that mine does not falls under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.
1.47	Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.
1.48	Details on the Forest Clearance should be given as per the format given: Total ML Project Area (ha) / Total Forest land (ha) If more than one provide details of each FC / Date of FC / Extent of Forest Land / Balance area for which FC is yet to be obtained / Status of appl For diversion of forest land
1.49	In case of expansion of the proposal, the status of the work done as per mining plan and approved mine closure plan shall be detailed in EIA/ EMP report
1.50	Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the time bound action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
1.51	PP shall carry out survey through drone highlighting the ground reality for atleast 10 minutes
1.52	Detailed Chronology of the project starting from the first lease deed alloted/Block allotment/ Land acquired to its No. of renewals, CTO /CTE with details of no. renewals, previous EC(s) granted details and its compliance details, NOC details from various Govt bodies like Forest NOC(s),

S. No	Terms of Reference
	CGWA permissions, Power permissions, etc as per the requisites respectively to be furnished in tabular form.
1.53	The first page of the EIA/ EMP report must mention the peak capacity production, area, detail of PP, Consultant (NABET acrreditation) and Laboratory (NABL / MoEF & CC certification)
1.54	The compliances of ToR must be properly cited with respective chapter section and page no in tabular form and also mention sequence of the respective ToR complied within the EIA-EMP report in all the chapter,s section.

ANNEXURE-1

ANNEXURE 1

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

From

Thiru.L.Suresh.,
Joint Director/
Assistant Director (i/c),
Geology and Mining,
Tirunelveli.

To

Thiru.N.Mohammed Saleem Badhusha,
S/o.Navaskhan,
1/19, Muthunagar,
Sankarnagar,
Tirunelveli - 627 357.

Rc.No.M2/197/2023 Dated. 06.10.2023

Sir,

Sub: **Mines and Quarries** - Minor Minerals - Tirunelveli District - Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for quarrying roughstone and gravel over an extent of 1.95.0 hectares of patta lands in SF. No. 812(P) of Naranammalpuram Part-I Village - Tirunelveli Taluk - Precise area communicated - Approved Mining Plan - Called for - Reg.

Ref:
1. Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, Sankarnagar, Tirunelveli, dated. 02.03.2023.

2. The Revenue Divisional Officer, Tirunelveli Letter No.K.Dis.A5/692/2023, dated. 30.06.2023.

3. Inspection report of the Assistant Geologist of Geology and Mining, Tirunelveli, dated. 13.07.2023.

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Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District - 627357 has applied for grant of quarry lease for quarrying Roughstone and Gravel over an extent of 1.95.0 hectares of patta land in SF. No. 812(P) of Naranammalpuram Part - I Village, Tirunelveli Taluk, Tirunelveli District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

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MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Assistant
Tirunelveli Dist

2. The Revenue Divisional Officer, Tirunelveli and the Assistant Geologist of Geology and Mining, Tirunelveli has furnished their reports in the reference 2nd and 3rd cited respectively and recommended for grant of quarry lease in the applied area subject to certain conditions.

3. Based on the recommendations of the Revenue Divisional Officer, Tirunelveli and the Assistant Geologist of Geology and Mining, Tirunelveli the application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for grant of quarry lease for quarrying roughstone and gravel in the subject area is considered for grant for a period of 5 years and precise area is hereby communicated over an extent of 1.95.0 hectares of patta land in SF. No. 812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District under Rule 19 of the Tamil Nadu Mineral Concession Rule 1959 and communicated to the applicant company as per the power conferred under amended Rule 41(4) Tamil Nadu Minor Mineral Concession Rules, 1959 subject to following condition.

i. A safety distance of 7.5 meters should be provided for the adjacent patta lands.

ii. A safety distance of 50 meters should be provided to the odai, located on eastern and western side of the applied area.

iii. A safety distance of 10 meters to be provided to the foot path located on the south-western side of the applied area.

iv. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority, Chennai.

4. In view of the above, you are hereby directed to submit mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval of the Joint Director/Assistant Director (i/c) of Geology and Mining, Tirunelveli within

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MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

a period of 90 days from the date of receipt of this letter as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

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

Joint Director/
Assistant Director(i/c),
Geology and Mining,
Tirunelveli.

6/01/23

Copy to:

The Chairman
State Level Environmental
Impact Assessment Authority,
Chennai.

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ANNEXURE-2

From

Thiru.L.Suresh., M.Sc.,
Joint Director/
Assistant Director(i/c),
Geology and Mining,
Tirunelveli.

To

Thiru.N.Mohammed Saleem Badhusha,
S/o.Navaskhan,
1/19, Muthunagar,
Sankarnagar,
Tirunelveli - 627 357.

Rc.No.M2/197/2023 dated.14.11.2023

Sir,

Sub: **Mines and Minerals** - Minor Minerals - Tirunelveli District - Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for quarrying roughstone and gravel over an extent of 1.95.0 hectares of patta lands in SF. No.812(P) of Naranammalpuram Part-I Village - Tirunelveli Taluk - precise area communicated - Mining plan submitted - Approval accorded - Reg.

Ref :

1. Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, Sankarnagar, Tirunelveli, dated. 02.03.2023.

2. Precise Area Communication letter in Rc. No.M2/197/2023, dated. 06.10.2023.

3. Letter received from the applicant Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, dated. 17.10.2023.

*****

Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District - 627357 has applied for grant of quarry lease for quarrying Roughstone and Gravel over an extent of 1.95.0 hectares of patta land in SF. No. 812(P) of Naranammalpuram Part - I Village, Tirunelveli Taluk, Tirunelveli District for

a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. Based on the recommendations of the Revenue Divisional Officer, Tirunelveli and the Assistant Geologist of Geology and Mining, Tirunelveli the application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for grant of quarry lease for quarrying roughstone and gravel in the subject area was considered for grant for a period of 5 years and precise area was communicated over an extent of 1.95.0 hectares of patta land in SF. No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District vide reference 2nd cited.

3. In response to the precise area communicated, the applicant company has submitted three copies of draft Mining Plan duly prepared by a Qualified Person and requested for approval of the same vide reference 3rd cited.

4. The draft Mining Plan submitted in respect of the precise area communicated have been verified with reference to field conditions. All the conditions stipulated in the precise area communicated have been incorporated in the Mining Plan. The required safety distance of 7.5 meters to the adjacent patta lands and 50 meters safety distance to the odai located on eastern and western side of the applied area

and 10 meters safety distance to the foot path located on the south-western side of the applied area have been clearly demarcated.

5. In exercise of the powers vested under sub rule (2) and (5) of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the mining plan for a period of five years subject to the following conditions:-

i. The mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.

ii. 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.

iii. The approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.

iv. Quarrying operations should be carried out in accordance with the Approved Mining Plan.

v. The applicant is entitled for production of 2,31,420 cbm of Roughstone and 30,772 cbm of Gravel upto a depth of 37 meters for a period of 5 years as per the Approved Mining Plan.

vi. A safety distance of 7.5 meters shall be provided for the adjacent patta lands.

vii. A safety distance of 50 meters should be provided to the odai, located on eastern and western side of the applied area.

viii. A safety distance of 10 meters to be provided to the foot path located on the south-western side of the applied area.

ix. Environmental Clearance shall be obtained from the State Level Environment Impact Assessment Authority, Chennai.

6. As directed by the Joint Director/Assistant Director(i/c) of Geology and Mining, Tirunelveli in the reference 2nd cited, you are hereby requested to produce Environmental Clearance obtained from the State Level Environment Impact Assessment Authority (SEIAA), Chennai as applicable under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease, in respect of the precise area communicated.

Encl: Approved Mining plan.

Joint Director/
Assistant Director(i/c),
Geology and Mining,
Tirunelveli.

APPROVAL MINING PLAN

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

MINING PLAN FOR NARANAMMALPURAM PART-I ROUGH STONE & GRAVEL QUARRY

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

LOCATION OF THE QUARRY LEASE APPLIED AREA

STATE	:	TAMIL NADU
DISTRICT	:	TIRUNELVELI
TALUK	:	TIRUNELVELI
VILLAGE	:	NARANAMMALPURAM PART-I
S.F.NO	:	812(P)
EXTENT	:	1.95.0Ha

ECO-FRIENDLY

SUSTAINABILITY

SAFETY

FOR
APPLICANT

THIRU. N.MOHAMMED SALEEM BADHUSHA,
S/o.Navaskhan,
No.1/19, Muthnagar,
Sankarnagar, Tirunelveli-627357.

PREPARED BY

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person
1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.

(PPE)

S.R.N

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

N.Mohammed Saleem Badhusha,
S/o.Navaskhan,
No.1/19, Muthnagar,
Sankarnagar, Tirunelveli-627357.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 1.95.0hectares of Patta lands in S.F.No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State has been prepared by

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person

I request the Joint Director / Assistant Director (i/c), Department of Geology and Mining, Tirunelveli District to make further correspondence regarding modifications of the Mining Plan with the said Qualified Person on this following address.

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person
1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.

I hereby undertake that all modifications so made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and building on me in all respects.

Signature of the Applicant

S.P.N

N.Mohammed Saleem Badhusha

Place: Tirunelveli
Date: 09.10.2023

S P N

N.Mohammed Saleem Badhusha,
S/o.Navaskhan,
No.1/19, Muthnagar,
Sankarnagar, Tirunelveli-627357.

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

DECLARATION

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 1.95.0hectares of Patta lands in S.F.No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Signature of the Applicant

S.N

N.Mohammed Saleem Badhusha

Place: Tirunelveli
Date: 09.10.2023

S.N

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person
1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

CERTIFICATE

This is to certify that, the provisions of under rules 41 & 42 as Amended in under Tamil Nadu Minor Mineral Concession Rules, 1959, have been observed in the Mining Plan for the grant of **Rough Stone and Gravel** quarry lease over an extent of 1.95.0hectares of Patta lands in S.F.No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State applied by Thiru.N.Mohammed Saleem Badhusha, 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.

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person

Place: Tirunelveli
Date: 10.10.2023

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person
1699 / 1 – Madurai Road,
Opp. Abcoy Garden,
Sankar Nagar & (Po) – 627357.
Tirunelveli District.
Cell : 98421 26699 & 97502 23535.

CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone and Gravel** quarry over an extent of 1.95.0hectares of Patta lands in S.F.No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State for Thiru.N.Mohammed Saleem Badhusha, 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.

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person

Place: Tirunelveli
Date: 10.10.2023

SP.N

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

CERTIFICATE

Certified that I, N.Ravinthiran, residing at 1699 / 1 – Madurai Road, Opp. Abcoy Garden, Sankar Nagar & (Po) – 627357. Tirunelveli District. I am a Post graduate in Geology (App.Geo) from university of Madras and more than five years of experience in mining Field.

Rule 15(1)(a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016 stipulates the eligibility for preparing Mining Plans as *"(1)(a) a post graduate degree in Geology granted by a university established" and (1)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree"*. Since my qualification and experience are satisfied the Rule (1)(a) and (1)(b) of 15 of the Said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly I prepared this Mining Plan in respect of Rough Stone and Gravel quarry lease applied for an extent of 1.95.0hectares of Patta land in S.F.No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, by Thiru. N.Mohammed Saleem Badhusha, 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.

N.Ravinthiran, M.Sc.,(App.Geo)

Qualified Person

Place: Tirunelveli

Date: 10.10.2023

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MINING PLAN APPROVED By Assistant Director of Geology & Mining No. Tirunelveli Dist

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MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

MINING PLAN FOR MINOR MINERALS

ROUGH STONE AND GRAVEL

Over an extent of 1.95.0hectares of Patta land in S.F.No. 812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State.

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

1.0 Introduction and Executive Summary;

1. The present Mining Plan is prepared for Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, No.1/19, Muthnagar, Sankarnagar, Tirunelveli-627357.
2. The application was processed by the Joint Director / Assistant Director(i/c) Department of Geology and Mining, Tirunelveli, and passed an order vide Rc.No.M2/197/2023 dated 06.10.2023 directing the applicant to produce approved Mining Plan under Rule 41(5) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and Environmental Clearance Certificate under Rule 42 from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease to quarry **Rough Stone and Gravel** over an extent of 1.95.0 hectares of Patta lands in S.F.No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District of Tamil Nadu State for a period of five years.
3. Accordingly, Mining Plan is prepared under the provisions of rule 19(1), 41 and 42 as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating following the conditions imposed in the precise area communication letter.
   a) A safety distance of 7.5m should be provided to the adjoining patta lands.
   b) A safety distance of 50m should be provided to the odai located on eastern and western side of the applied area.

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c) A safety distance of 10m to be provided to the foot path located on the western side of the applied area.

d) Environment clearance should be obtained from the State Level Environmental Impact Assessment Authority, Chennai.

4. Geological Resources is estimated at 6,80,260m³ of Rough stone and 38,872m³ of gravel formation and Mineable Reserves is estimated at 2,31,420m³ of Rough Stone, 30,772m³ of gravel formation and after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.
5. Production Schedule is proposed production of 2,31,420m³ of Rough Stone, 30,772m³ of gravel formation for the period of five years.
6. The applicant ensured that, child labours under 18 years of age will not be engaged for quarrying operation.
7. The applicant ensure that will appoint should have valid certified persons (Mines Manager, Foreman, Mate) during quarrying operation.
8. Environmental parameters,
   - i) The area does not attract the Forest Conservation Act, 1980 as there is no forest around 1.6Km radius.
   - ii) There is no interstate boundary around 10Kms radius.
   - iii) There is no wild life animal sanctuary within 1.6Km 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.

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EXECUTIVE SUMMARY:

a.	Name of the Village Panchayat	:	Naranammalpuram Part-I
b.	Name of the Panchayat Union	:	Tirunelveli
c.	The proposed total Minable Reserves	:	2,31,420m³ of Rough Stone, 30,772m³ of gravel formation
d.	The proposed quantity of reserves (level of production) for five years to be mined is(Recoverable reserves)	:	2,31,420m³ of Rough Stone, 30,772m³ of gravel formation
e.	Total extent of the area	:	1.95.0Ha
f.	Proposed Period of mining	:	Five years
g.	Existing depth	:	It is fresh quarry lease applied area
h.	Proposed Depth of mining	:	37m (below ground level) for the proposed mining plan.
i.	Method of mining/level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m is proposed.
j.	Types of Machineries used in the quarry	:	Machineries like Tractor mounted compressor attached with Jack hammers, Excavators are proposed to deploy for quarrying operation.
k.	Cost of the Project A. Fixed Assets Cost B. Operational Cost C. EMP Cost		Rs. 14,70,000/- Rs. 51,50,000/- Rs. 4,90,000/- Total Project cost(A+B+C) =**Rs. 71,10,000/-**
l.	The area applied for lease is bounded by four corners and the coordinates are clearly marked in plate no II.		

Corners	Co- ordinates		Distance between the corners
	Latitude	Longitude	
1	08°48'16.00"N	77°44'57.62"E	1-2 = 148.6m
2	08°48'20.68"N	77°44'58.84"E	2-3 = 130.2m
3	08°48'21.48"N	77°45'03.02"E	3-4 = 191.6m
4	08°48'15.51"N	77°45'01.21"E	4-1 = 110.8m

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2.0 General Information:

2.1	a.	Name of the Applicant	:	Thiru.N.Mohammed Saleem Badhusha,
	b.	Address of the Applicant with phone No and e-mail id if any	:	S/o.Navaskhan, No.1/19, Muthnagar, Sankarnagar, Tirunelveli, Pin Code-627 357 Cell No.:8903929688
	c.	Status of the Applicant	:	Individual
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone and Gravel.
	b.	Precise area communication letter No.	:	Precise area communication letter received from the Joint Director / Assistant Director(i/c), Department of Geology and Mining, Tirunelveli, Rc.No.M2/197/2023 dated 06.10.2023
	c.	Period of permission / lease granted	:	Joint Director / Assistant Director(i/c), Department of Geology and Mining, Tirunelveli, has grant of lease period for **five years.**
	d.	Name and Address of the QP preparing Mining Plan	:	**N.Ravinthiran, M.Sc.,(App.Geo)** **Qualified Person** 1699 / 1 – Madurai Road, Opp. Abcoy Garden, Sankar Nagar & (Po) – 627357. Tirunelveli District. Cell : 98421 26699 & 97502 23535.

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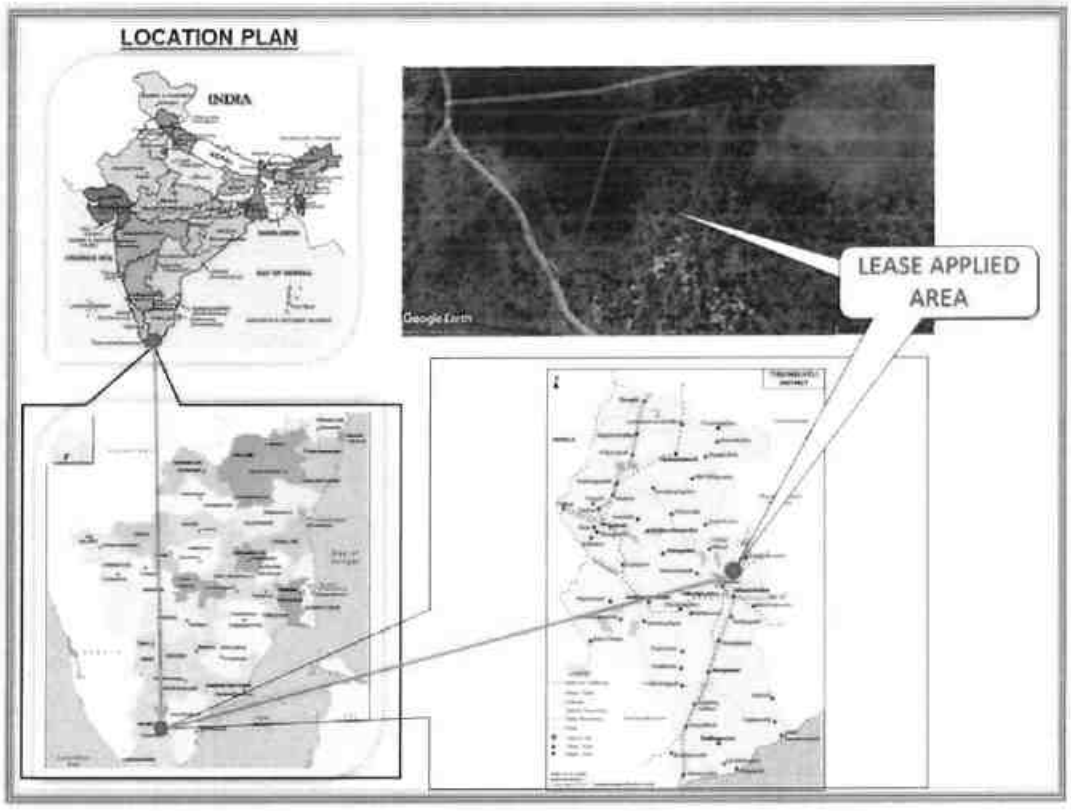
3.0 Location:

S.No		Details of the Area:
1	Corner Coordinates	Latitude :08°48'15.51"N to 08°48'21.48"N Longitude :77°44'57.62"E to 77°45'03.02"E
2	Toposheet Number	58 H/13
3	The altitude of the area	97m (MSL)
4	Extent	1.95.0Ha
5	Survey Nos	812(P)
6	Village	Naranammalpuram Part-I
7	Taluk	Tirunelveli
8	District	Tirunelveli
9	State	Tamil Nadu



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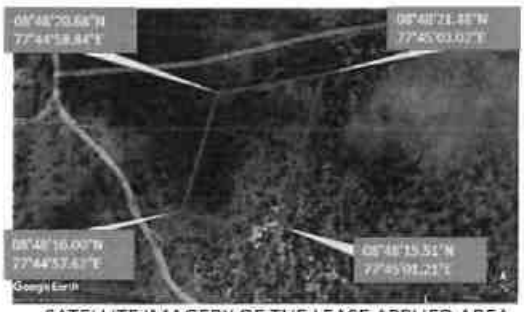
a.	Classification of the Area (Ryotwari / poramboke / others)	:	Patta land
b.	Ownership / Occupancy of the Applied area (Surface rights)	:	It is patta land jointly registered in the name of Thiru.Mohammed Saleem Badhusha, (applicant) Thiru.Mohammed Abdur Rahman Wajith, Thiru.Mohideen Sheik Shahith vide patta no.1465, the applicant has obtained consent from the other pattadar, Please refer Annexure No: IV & VII.
c.	Toposheet No. with Latitude and Longitude	: : :	Topo Sheet No: 58 H/13 Latitude :08°48'15.51"N to 08°48'21.48"N Longitude :77°44'57.62"E to 77°45'03.02"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 Palamadai road on western side of the area. The Nearest Railway line is Tirunelveli – Thoothukudi line which is about 288m on the Southeastern side of the area.



SATELLITE IMAGERY OF THE LEASE APPLIED AREA

TOPOGRAPHICAL VIEW OF LEASE APPLIED AREA

Fig. Location of the lease Applied Area

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PART - A

4.0 Geology and Mineral Reserves:

4.1	a.	Topography	:	➢ The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is noticed below 2m (Avg) Gravel formation and sloping towards Southeastern side of the area, the altitude of the area is above 97m (maximum) from MSL. ➢ No major river is found nearby the lease applied area. ➢ Water table is found at a depth of 62m in summer and 59m 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.

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				AGE — **ROCK TYPE** Recent - Gravelly soil Unconformity Archaean - Dolerite dyke Charnockite. Peninsular Gneissic complex and Calc Gneiss
4.2		Details of Exploration already carried out if any	:	No exploration was carried out, as the rough stone formations are clearly visible from outcrops surrounding the lease applied area.
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 37m below ground level only. availability of resources is given below.

Table No-1

Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel formation in m^3	Geological Resources of Rough stone in m^3
XY-AB	172	113	2	38872	38872	
	172	113	35	680260		680260
	Total				**38872**	**680260**

Gravel Formation : 38,872m^3

The Geological Resources of Rough stone : 6,80,260m^3

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b. Mineable Reserve

The mineable reserve calculated by deducting 7.5m, 10m and 50m safety distance and bench loss.

Table No-2

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel in m^3	Mineable Reserves of Rough stone in m^3
XY-AB	I	157	98	2	30772	30772	
	II	151	92	5	69460		69460
	III	138	79	5	54510		54510
	IV	125	66	5	41250		41250
	V	112	53	5	29680		29680
	VI	99	40	5	19800		19800
	VII	86	27	5	11610		11610
	VIII	73	14	5	5110		5110
	Total					**30772**	**231420**

The mineable reserve is computed as 2,31,420m^3 of Rough stone 30,772m^3 of Gravel formation upto a depth of 37m below ground level only.

5.0 Mining:

5.1	Method of Mining	:	1. Opencast method of semi mechanized mining with 5.0m height 5m width of the bench. 2. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.

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5.2	Mode of Working	:	The rough stone is proposed to quarry 5m bench height, 5m width with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers / 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.	:	The overburden in the form of Gravel, after the excavation of Gravel and Rough stone will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low lying areas.

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The Yearwise Production and Development Table

Table No –3

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m^3	Gravel In m^3	Mineable reserve of Rough stone in m^3
I	XY-AB	I	102	98	2	19992	19992	
		II	99	92	5	45540		45540
	Total						**19992**	**45540**
II	XY-AB	I	55	98	2	10780	10780	
		II	52	92	5	23920		23920
		III	56	79	5	22120		22120
	Total						**10780**	**46040**
III	XY-AB	III	82	79	5	32390		32390
		IV	43	66	5	14190		14190
	Total							**46580**
IV	XY-AB	IV	82	66	5	27060		27060
		V	73	53	5	19345		19345
	Total							**46405**
V	XY-AB	V	39	53	5	10335		10335
		VI	99	40	5	19800		19800
		VII	86	27	5	11610		11610
		VIII	73	14	5	5110		5110
	Total							**46855**
Grand Total							**30772**	**231420**

The applicant has proposed to carry out 2,31,420m^3 of Rough stone 30,772m^3 of Gravel formation upto a depth of 37m below ground level for the period of five years.

5.5		Machineries to be used		
	a.	Drilling	:	It is proposed to use following machineries for quarrying rough stone

S.No	Type	Nos	Dia Hole mm	Make	Motive power
1	Jack hammer	4	32	Atlas Copco	Compressed air
2	Compressor	1	-	Atlas Capco	Diesel Drive

	b.	Loading	:	Excavator of 0.90m^3 bucket capacity (with Rock breaker attachment) (1No).
	c.	Transportation	:	Tipper 3Nos (5/10Ts) capacity.

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<table>
<tr><td>5.6</td><td></td><td>Disposal of Overburden</td><td>:</td><td>The overburden in the form of Gravel after the excavation gravel will be directly loaded into tipper to the needy buyers for road project and construction works for filling and leveling of low lying areas.</td></tr>
<tr><td>5.7</td><td></td><td>Brief Note on Conceptual Mining Plan for the entire lease period</td><td>:</td><td>Conceptual Mining Plan is prepared with an object of five years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc.
Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc.
Ultimate Pit dimension is given as under,
<table><tr><td colspan="4">Ultimate Pit dimension (M) end of Mining plan Period</td></tr><tr><td>Pit No</td><td>Length (max) in (m)</td><td>Width (Avg) in (m)</td><td>Depth(max) in(m)</td></tr><tr><td>1</td><td>157</td><td>98</td><td>37</td></tr></table>
Afforestation has been proposed on all along the boundary barrier by planting trees.
All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.</td></tr>
</table>

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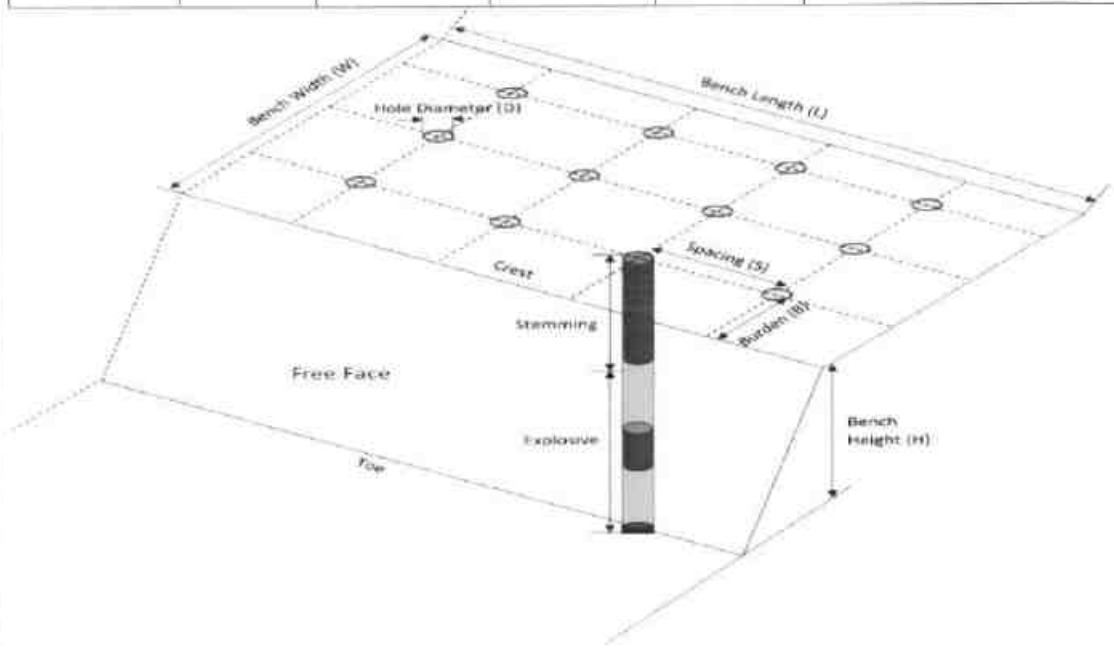
6.0 Blasting:

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

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



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

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

Number of holes	:	134
Powder factor	:	6Ts/Kg of explosives
Total explosive required	:	67Kg 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 62m below ground level. In the proposed mining plan only 37m 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

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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 odai passing on eastern and western side of the area and is 50m safety distance maintained from odai, there is another odai passing on southwestern side of the area and is 360m away from the area.
8.4	Archaeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 50m.
8.5	Road (NH, SH, Village Road etc)	:	The National Highway (NH-44) Salem-Kanniyakumari is about 0.9km on northwestern side of the area. The State Highway (SH-75) Tirunelveli – Ottapidaram is about 6.8Km on southeastern side of the area.
8.6	Places of Worship	:	There are no Places of Worship within a radius of 500m.
8.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	There is no Reserved Forest /Wild Life Sanctuary etc., within a radius of 1Km.
8.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	:	There are No inter State border within a radius of 10Kms.
8.9	Any Other Structures	:	Nil

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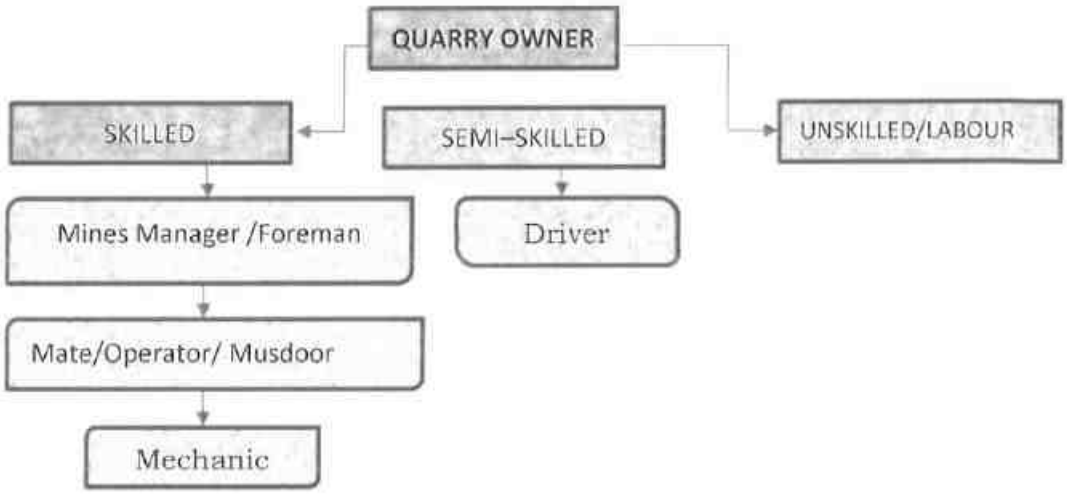
9.0 Employment Potential & Welfare Measures:

9.1 Employment Potential (Management & Supervisory personal)

The proposed organization chart



1.	Skilled	Mines Manager	1 No.
		Foreman / Mate	2 No.
		Operator	10 No.
		Mechanic	1 No.
2.	Semi-skilled	Driver	3 No.
3.	Unskilled	Labours	10Nos
		Total =	27Nos

Allowing 10% absentee, 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 Thathanuthu village which is about 600m on southwestern side of the area.

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	b.	Sanitary facilities	:	Semi-permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1960.
	c.	First Aid Facility	:	First aid kits are kept in Mines office room, in case of such eventualities 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 8.5Km (S) in Tirunelveli the competent and Statutory foreman/ permit manager will be in charge of first aid.
	d.	Labour Health	:	As per Mines Rule, Periodic medical examination related to occupational health safety will be conducted to all the workers in applicant's own cost.
	e.	Precautionary safety measures to the Labourers:		
		Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc., have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation. Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and systematic quarrying operation.		

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PART – B

10.0 Environmental Management Plan:

10.1	Existing Land Use Pattern	:	1. The area is exhibits almost plain topography covered by Gravel formation. 2. Quarrying operation is proposed up to a depth of 37m below ground level for the proposed mining plan period. 3. Fluctuation of Water table in this area is in between 62m and 59m during a year. 4. This region receives the average annual rainfall of 800mm to 900mm. The surrounding area is practiced by the seasonal cultivation. The existing land use pattern is given as under.

Table No-4

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	1.54.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	Nil	0.01.0
4.	Green Belt	Nil	0.39.0
5.	Unutilized	1.95.0	Nil
	Total =	**1.95.0**	**1.95.0**

10.2	Water Regime	:	Water table in this area is noticed at a depth of 62m and presently, in the proposed mining plan only 37m below ground level depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. hence, it will not affect the ground water depletion of this area.
10.3	Flora and Fauna	:	Except acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.
10.4	Climatic conditions	:	Generally subtropical climatic condition prevails throughout the year and there is no sharp variation in climate. This District receives rain both in south west and north east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18°C during winter and to a maximum of 42°C during the summer.

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<table>
<tr><td>10.5</td><td>Human Settlement</td><td>:</td><td>The nearest habitations with the population is given as under.
Table No-5<table><tr><th>S. No</th><th>Name of the Village</th><th>Approximate distance & Direction from lease applied area</th><th>Approximate population</th></tr><tr><td>1.</td><td>Pappankulam</td><td>1.4km - NE</td><td>400</td></tr><tr><td>2.</td><td>Palamadai</td><td>1.3Km – SE</td><td>600</td></tr><tr><td>3.</td><td>Thathanuthu</td><td>0.6Km-SW</td><td>500</td></tr></table></td></tr>
<tr><td>10.6</td><td>Plan for Air, Dust Suppression</td><td>:</td><td>Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. Wet drilling and dust extractor arrangements will be provided to drilling units so as to control raise of dust from the site of drilling. Operators, those exposed directly to such conditions will be provide such protective equipment like mask, ear plug, helmet, gloze etc., as per the Mines Act.</td></tr>
<tr><td>10.7</td><td>Plan for Noise Control</td><td>:</td><td>Quarrying of Rough Stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. Nowhere the noise level should exceed the permissible limit of 80db during the quarry working hours.</td></tr>
<tr><td>10.8</td><td>Environmental Impact Assessment Statement Describing Impact on mining on the next five years</td><td>:</td><td>The mining plan proposed is for a small production of Rough stone without involving deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned, anyhow environmental impact studies will be conducted as per EIA notification issued by MOEF.</td></tr>
<tr><td>10.9</td><td>Proposal for Waste Management</td><td>:</td><td>There is no waste anticipated in this rough stone quarry operation.</td></tr>
</table>

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10.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	:	In the proposed mining plan 37m (below ground level) depth has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit (for this lease period) of 37m 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 and 50m 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 3900Sqm area is proposed to use under afforestation by planting 468nos of Neem/Pungan trees during first year with an anticipated survival rate of 80%. The Quarry landuse, layout and afforestation plan is shown in Plate No.III.
10.12	Proposed Financial Estimate / Budget for (EMP) Environment Management		
	A.Fixed Asset Cost:		
	1. Land Cost (600000/1Ha)=	:	Rs. 11,70,000
	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.14,70,000/-**
	B. Operational Cost:		
	1. Machineries	:	Rs.50,00,000-
	2. Fencing cost	:	Rs. 1,50,000
	Total	**:**	**Rs.51,50,000/-**

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	C.EMP Cost:	:	Budget Provision for the entire quarrying period. Air Quality Sampling = Rs. 40,000/- Water Quality Sampling = Rs. 40,000/- Noise Monitoring = Rs. 20,000/- Ground vibration test = Rs. 20,000/-
	Expenditure 1. Drinking water facility 2. Sanitary Arrangements 3. Safety kids 4. Water sprinkling 5. Afforestation **Total=**	: : : : : :	Rs.1,00,000/- Rs. 50,000/- Rs. 50,000/- Rs. 1,00,000/- Rs. 70,000/- **Rs. 4,90,000/-**
	Total Project Cost (A+B+C)	:	**Rs. 71,10,000/-**
	CSR Cost(2% of Total Project Cost)	:	**Rs. 1,42,200/**

11.0 Mine Closure Plan:

11.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of the life of lease will be fenced to prevent inherent entry of public and cattles.
11.2	Measures to be under taken on mine closure as per Act & Rules	:	Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.
11.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	Mitigation measures: Drilling will be carried out by wet drilling mode to control the dust propagation into the air. Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.

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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

N.Ravinthiran, M.Sc.,(App.Geo)
Qualified Person

Place : Tirunelveli
Date : 10.10.2023

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

Lettter Roc.No. M2/197/2023

Dated 14.11.2023

Regional Joint Director /
Assistant Director (I/C)
Geology and Mining
Tirunelveli

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ANNEXURE 1

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

From

Thiru.L.Suresh.,
Joint Director/
Assistant Director (i/c),
Geology and Mining,
Tirunelveli.

To

Thiru.N.Mohammed Saleem Badhusha,
S/o.Navaskhan,
1/19, Muthunagar,
Sankarnagar,
Tirunelveli - 627 357.

Rc.No.M2/197/2023 **Dated. 06.10.2023**

Sir,

Sub: **Mines and Quarries -** Minor Minerals - Tirunelveli District - Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for quarrying roughstone and gravel over an extent of 1.95.0 hectares of patta lands in SF. No. 812(P) of Naranammalpuram Part-I Village - Tirunelveli Taluk - Precise area communicated - Approved Mining Plan - Called for - Reg.

Ref:
1. Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, Sankarnagar, Tirunelveli, dated. 02.03.2023.
2. The Revenue Divisional Officer, Tirunelveli Letter No.K.Dis.A5/692/2023, dated. 30.06.2023.
3. Inspection report of the Assistant Geologist of Geology and Mining, Tirunelveli, dated. 13.07.2023.

******

Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District - 627357 has applied for grant of quarry lease for quarrying Roughstone and Gravel over an extent of 1.95.0 hectares of patta land in SF. No. 812(P) of Naranammalpuram Part - I Village, Tirunelveli Taluk, Tirunelveli District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

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2. The Revenue Divisional Officer, Tirunelveli and the Assistant Geologist of Geology and Mining, Tirunelveli has furnished their reports in the reference 2nd and 3rd cited respectively and recommended for grant of quarry lease in the applied area subject to certain conditions.

3. Based on the recommendations of the Revenue Divisional Officer, Tirunelveli and the Assistant Geologist of Geology and Mining, Tirunelveli the application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for grant of quarry lease for quarrying roughstone and gravel in the subject area is considered for grant for a period of 5 years and precise area is hereby communicated over an extent of 1.95.0 hectares of patta land in SF. No. 812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District under Rule 19 of the Tamil Nadu Mineral Concession Rule 1959 and communicated to the applicant company as per the power conferred under amended Rule 41(4) Tamil Nadu Minor Mineral Concession Rules, 1959 subject to following condition.

i. A safety distance of 7.5 meters should be provided for the adjacent patta lands.

ii. A safety distance of 50 meters should be provided to the odai, located on eastern and western side of the applied area.

iii. A safety distance of 10 meters to be provided to the foot path located on the south-western side of the applied area.

iv. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority, Chennai.

4. In view of the above, you are hereby directed to submit mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval of the Joint Director/Assistant Director (i/c) of Geology and Mining, Tirunelveli within

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MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

a period of 90 days from the date of receipt of this letter as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

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

Joint Director/
Assistant Director(i/c),
Geology and Mining,
Tirunelveli.

Copy to:

The Chairman
State Level Environmental
Impact Assessment Authority,
Chennai.

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ANNEXURE
MINING PLAN APPROVED
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Assistant Director
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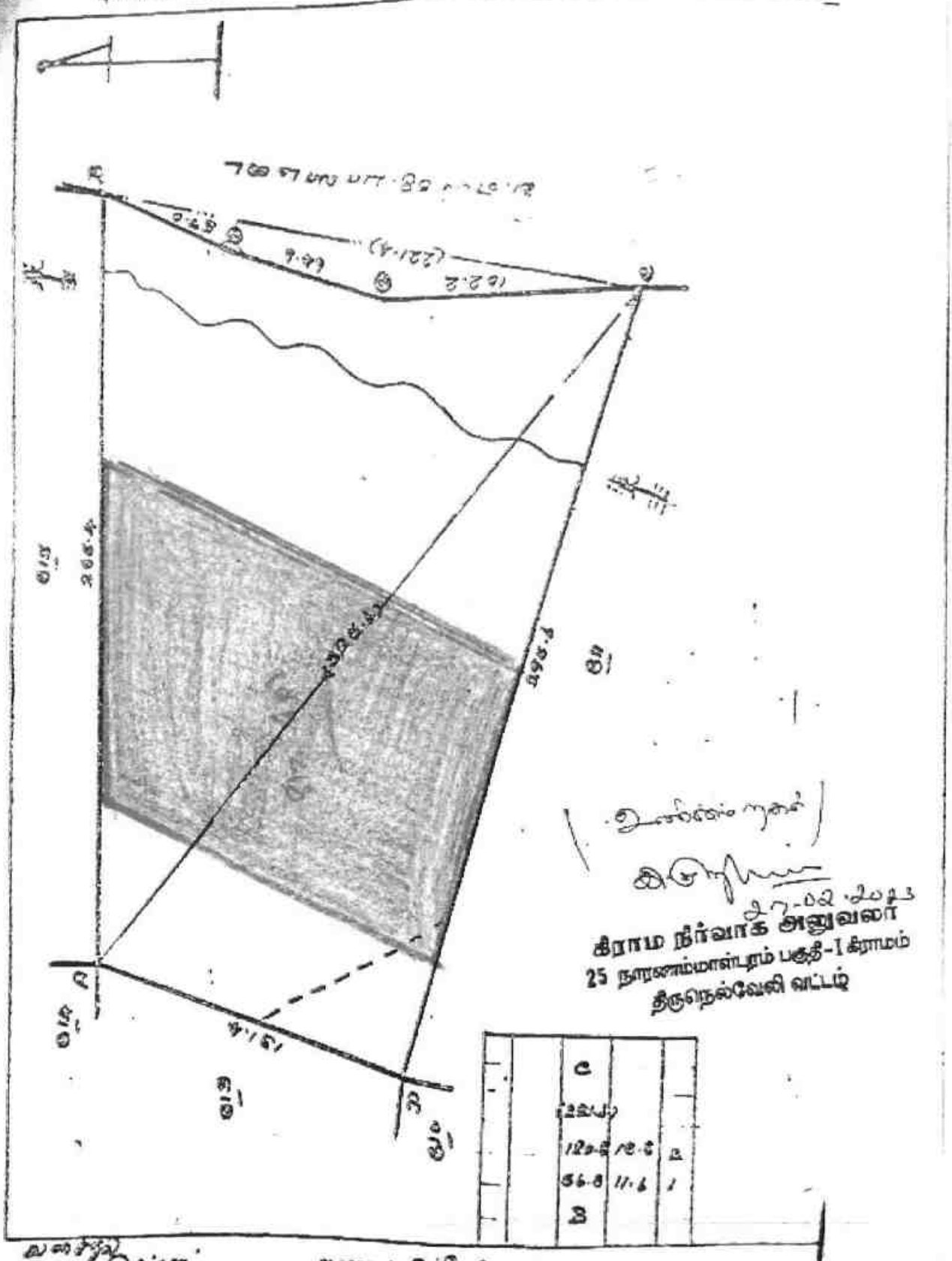
Tirunelveli Dist.

மாவட்டம். திருநெல்வேலி
வட்டம் திருநெல்வேலி
புல எண். 818

கிராமம் எண்.
பெயர்

பரப்பு தொகுப்பு ~ ஏரி 8க - 0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ANNEXURE III

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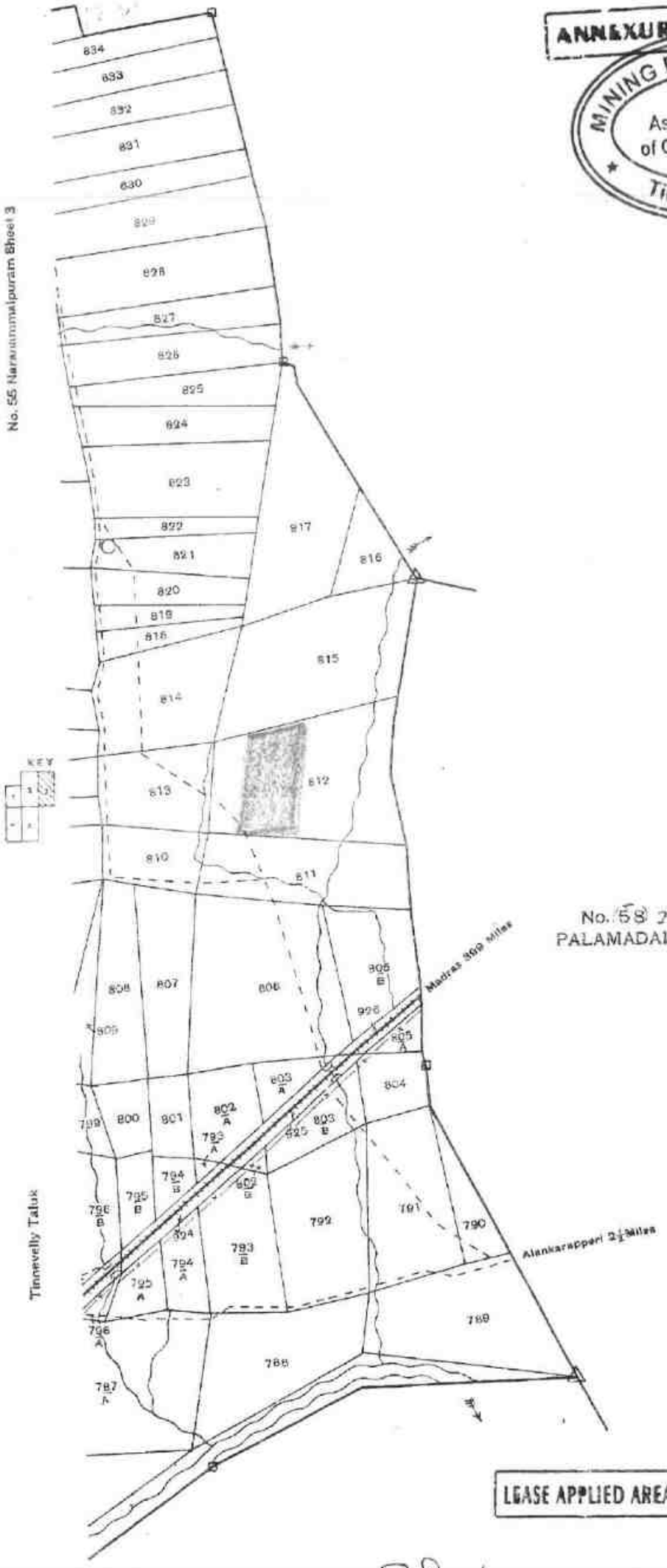

LEASE APPLIED AREA

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ANNEXURE IV

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருநெல்வேலி வட்டம் : திருநெல்வேலி

வருவாய் இராமம் : நாரணம்மாள்புரம் பகுதி-1 பட்டா எண் : 1465

உரிமையாளர்கள் பெயர்

1. நவாஸ்கான் மகன் முகமது சலீம் பாதுஷா
2. நவாஸ்கான் மகன் முகமது அப்துர் ரஹ்மான் வாஜித்
3. நவாஸ்கான் மகன் முகைதீன் ஷேக் சாகித்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
812	-	4 - 84.00	3.00	--	--	--	--	2022/0103/29/303372- -- -- 28-05-2022
		4 - 84.00	3.00					

குறிப்பு2 :

1.	மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் 29/01/025/01465/10566 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2.	இத் தகவல்கள் 27-02-2023 அன்று 10:35:56 AM நேரத்தில் அச்சடிக்கப்பட்டது
3.	கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

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ANNEXURE V

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732 – ஆம் பசலியில் மாவட்டம் வட்டம்

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.						சாதப்பு மாளின் பெயர்.	முதல் போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	பாப்பு.	தீர்வை.	ஒரு போகம் அல்லது இரு போகம்.	கைப்பற்று தாரருடைய பெயரும் எண்ணும் அல்லது அனுபோக தாரருடைய பெயர்.	நிலத்தின் எந்த பகுதி யாவது சாதுப்பு மாளாரால் பயிரிடப்பட்டுள்ளதா.	எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பாப்பு.	உண்மையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விழுக்காடு.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
812	–	4.34	300		1465 [illegible]			[illegible]			

[illegible]

27-02-2023

கிராம நிர்வாக அலுவலர்
25 நாரணம்மாள்புரம் பகுதி - 1 கிராமம்
திருநெல்வேலி வட்டம்

380/12-R.F.III-A10 – 20,00,000 Cps.-GBP.-Mdu-7-2019.

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ANNEXURE VI

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கி. எண். 25. நாரணம்மாள்புரம் பகுதி I.

1	2	3	4	5	6	7	8	9	10	11	12
							ரூ. பை.	ஹெக்ரேஸ்.	கு. பை.		
...	807	ர	பு	...	8-5	7	0 62	1 94.5	1 20	281	அ. முகம்மது மீரான்.
...	808	ர	பு	...	8-5	7	0 62	2 00.5	1 25	281	அ. முகம்மது மீரான்.
...	809	ர	பு	...	8-5	7	0 62	0 85 5	0 53	281	அ. முகம்மது மீரான்.
...	810	ர	பு		8-5	7	0 62	1 26.0	0 78	281	அ. முகம்மது மீரான்.
...	811	ர	பு		8-5	7	0 62	2 96.0	1 83	282	அ. முகம்மது முபாரக்.
...	812	ர	பு	...	8-5	7	0 62	4 84 0	3 00	282	அ. முகம்மது முபாரக்.
...	813	ர	பு		8-5	7	0 62	1 86.5	1 15	282	அ. முகம்மது முபாரக்.
1	814-1	ர	பு		8-5	7	0 62	2 02 0	1 25	32	இந்தியா சிமிண்ட் லிமிடெட் கம்பெனி.
2	-2	ர	பு	...	8-5	7	0 62	0 90.0	0 55	484	மு. ரெஜினா பேகம் மற்றும் ஒன்பது பேர்களும். *
								2 92.0	1 80		
1	815 பா	ர	பு	...	8-5	7	0 62	3 19.5	1 98	32	இந்தியா சிமிண்ட் லிமிடெட் கம்பெனி.
2	-பா	ர	பு	...	8-5	7	0 62	1 32.0	0 81	484	மு. ரெஜினா பேகம் மற்றும் ஒன்பது பேர்களும். *
								4 51.5	2 79		

* விவரப்பட்டியலைப் பார்க்கவும்.

கிராம நிர்வாக அலுவலர்
25 நாரணம்மாள்புரம் பகுதி - I கிராமம்
திருநெல்வேலி வட்டம்

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ANNEXURE VII

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भारतीय गैर न्यायिक

एक सौ रुपये

रु. 100

ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

CK 520086

ரூபாய் :- 100.....

நாள் :- 28 FEB 2023

எஸ்.எம். ஜெய்யது அலி
ஸ்டாம்பு வென்டர்
மேலப்பாளையம்.
உ.எ. 16/97

முகைதீன் சேன் காசிந்
ஆங்கர் நகர்

குத்தகை ஆவணம்

2023ம் வருடம் பிப்ரவரி மாதம் 28ம் தேதி

திருநெலவேலி 627357, சங்கர்நகர் அஞ்சல், முத்துநகர், கதவு எண்.1/29 உள்ள இல்லத்தில் வசித்து வரும் நவாஸ்கான் அவர்கள் குமாரர் முகமது சலீம் பாதுஷா (ஆதார் எண்.3453 1412 5349) அவர்களுக்கு

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N. Shahith

N. Abdul Walid

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திருநெலவேலி 627357, சங்கர்நகர் அஞ்சல், முத்துநகர், கதவு எண்.1/19 உள்ள இல்லத்தில் வசித்து வரும் நவாஸ்கான் அவர்கள் குமாரர் முகைதீன் ஷேக் சாகித் (ஆதார் எண். 4501 7281 3754) (Pancard No.EKYPM4288Q)-1 ஷை முகவரியில் குடியிருந்து வரும் ஷை 1வது நபரின் சகோதரர் முகமது அப்துர் ரஹ்மான் வாஹீத் (ஆதார் எண். 4639 8469 3668)-2 ஆகிய நாங்கள் இருவரும் சேர்ந்து எழுதிக் கொடுத்த குத்தகை ஆவணம்.,

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N. Abdul Wahid

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என்னவென்றால் 21.02.2022ம் தேதியில் எழுதி திருநெல்வேலி 2 நிர் இணைச்சார் பதிவாளர் அலுவலகத்தில் 1 புத்தகம் 790/2022ம் நம்பராகப் பதிவு செய்யப்பட்டுள்ள கிரையப் பத்திரத்தின் மூலம் இதன் தபசில் கண்ட சொத்து நமக்கு பொதுவாகவும் ஜாயிண்டாகவும் பாத்தியப்பட்டு நாரணம்மாள்புரம் பகுதி 1 கிராம பட்டா எண்.1465படியும் நமக்கு பாத்தியப்பட்டு ஆண்டனுபவித்து வருகிற இதன் தபசில் கண்ட சொத்தில் நாளது தேதி வரை சர்க்கார் தீர்வை செலுத்தி சர்வ சுதந்திரமாக சகல உரிமைகளுடன் எந்தவித வில்லங்க விவகாரமின்றி ஆண்டனுபவித்து வரும் சொத்துக்கள் ஆகும். இதன் தபசில் கண்ட சொத்துக்களுக்கு தாங்கள் அரசு அனுமதி பெற்று கனிமம் சார்ந்த தொழில் செய்வதற்கு குத்தகைக்கு வேண்டும் என கேட்டதை ஏற்று இன்றுமுதல் வருடம் ஒன்றுக்கு ரூபாய்.10,000/- ரூபாய்.பத்தாயிரம் குத்தகை தொகையாக நிர்ணயித்து 11 (பதினோறு) ஆண்டுகளுக்கு குத்தகைக்கு விட நாங்கள் சம்மதிகிறோம். இன்று முதல் இதன் தபசில்

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கண்ட சொத்துக்களின் சுவாதீனத்தை பெற்றுள்ள தாங்கள் தொழிலுக்கு தேவையான மாற்றங்களை தபசில் கண்ட சொத்துக்களில் தங்கள் சொந்த பொறுப்பில் செய்து கொள்ள வேண்டியது.

நிபந்தனைகள் விபரம்

1. 01.03.2023 தேதி முதல் 28.02.2034 தேதி வரை 11 வருட காலத்திற்கு தபசில் இடத்தில் கனிமம் சார்ந்த தொழில் நடத்தி வரவேண்டியது.
2. கனிமம் சார்ந்த தொழில் செய்வதற்கு குத்தகையாக வருடம் ஒன்றுக்கு ரூபாய்.10,000/- வீதம் ஒவ்வொரு ஆங்கில வருடம் தேதிக்குள் கொடுத்து விட வேண்டியது. இந்த குத்தகை வகைக்காக வட்டியின்றி ரூபாய்.10,000/- ரூபாய். பத்தாயிரம் டெப்பாசிட்டாக செலுத்த வேண்டியது.
3. தபசில் இடத்தில் கனிமம் சார்ந்த தொழில் இயங்கும் காலம் வரை அதற்குரிய மின்கட்டணம் மற்றும் தண்ணீர் கட்டணம் இவைகளை நீங்களே கட்டிக் கொள்ளவேண்டியது.

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4. தபசில் இடத்தை நல்ல முறையில் பராமரித்து வரவேண்டும்.

5. தபசில் இடத்தில் ஷை கனிமம் சார்ந்த தொழில் தவிர வேறு எதற்கும் உபயோகப்படுத்தவோ, உள்வாடகைக்கு விடவோ உரிமை கிடையாது.

6. ஷை குத்தகை காலம் முடிந்து செல்லும் காலத்தில் எவ்வித சேதாரமும் செய்யாமல் தபசில் இடத்தை ஒப்படைக்க வேண்டியது.

7. தபசில் இடத்திற்கு நிலதீர்வை, கட்டிடத்திற்குரிய தீர்வை இவைகளை நீங்களே செலுத்தி கொள்ள வேண்டியது.

8. குத்தகை காலம் முடியும் போது ஷை டிப்பாசிட் தொகை ரூபாய்.10,000/- ரூபாய்.பத்தாயிரம் வட்டியின்றி பெற்றுக் கொள்ளவேண்டியது.

9. குத்தகை காலம் முடிந்தவுடன் அவசியம் ஏற்படின் அல்லது தேவை ஏற்படின் இருவரும் சம்மதத்தின் பேரில் குத்தகையை நீட்டித்து கொள்ள வேண்டியது.

10. தபசில் சொத்துக்களில் உள்ள கட்டிடங்களில் இணைக்கப்பட்டுள்ள மின் இணைப்பு தொடர்பாக இனி வருங்காலங்களில் கூடுதல் வைப்பு தொகை ஏதும் செலுத்த வேண்டியது ஏற்பட்டால்

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அதனை நீங்களே தன் சொந்த பெற்றுப்பில் செலுத்தி கொள்ளவேண்டியது. குத்தகை காலம் முடிந்த பிறகு மேற்படி மின் இணைப்பு கூடுதல் வைப்பு தொகையினை நாங்கள் மின்சார வாரியத்திடமிருந்து ஷை தொகையை திரும்ப பெற்று தங்களுக்கு திரும்ப செலுத்தி விடுவோம்.

11. மின் இணைப்பு, வண்டி வாகனங்கள் போன்றவற்றை நீங்களே ஏற்பாடு செய்து கொண்டு அரசு அலுவலகங்களில் உங்கள் பெயரிலோ உங்கள் நிறுவனத்தின் பெயரிலோ நீங்களே கையொப்பம் செய்து கொண்டு தபசில் கண்ட சொத்துக்களில் தொழிலுக்கு தேவையான கட்டிடங்களை அரசு அனுமதியுடன் அமைத்து கொள்ளவேண்டியது. இதன் தபசில் கண்ட சொத்துக்களில் அரசின் சட்டத் திட்டங்களுக்கு பாதகமாக நீங்களே உங்களது வாரிசுகளோ செய்யக்கூடாது, கனிமவளம் எடுக்கும் போது அரசின் சட்டம் மற்றும் விதிமுறைகளுக்கு உட்பட்டு மட்டுமே தபசில் கண்ட சொத்துக்களின் நிலத்தில் இருந்து கனிம வளங்களை எடுக்க வேண்டும்.

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12. இதன் தபசில் கண்ட சொத்துக்களின் குத்தகை காலம் முடியும் தருணத்தில் குத்தகையை நீடித்து கொள்ள நாம் இருதரப்பினரும் விரும்பாத நிலையில் மீண்டும் எனது இடத்தில் இன்றைய நிலையிலோ கட்டிடத்தோடோ சுவாதீனத்தை வழங்கிவிட வேண்டியது. குத்தகை நீட்டிப்பு செய்யும் பட்சத்தில் அதற்கு தனியாக ஒரு ஆவணம் எழுதி அதனை பதிவு செய்து கொள்ள வேண்டும், இந்தபடி எனது முழு மன நிறைவுடன் எழுதிக் கொடுத்த குத்தகை பத்திரம் படிக்க கேட்டேன் சரி.

MINING PLAN APPROVED By Deputy Director of Geology & Mining Tirunelveli Dist

தபசில்

திருநெல்வேலி ரிடி, திருநெல்வேலி ஜாயிண்ட் 2ம் நம்பர் சப்டி சரகம், திருநெல்வேலி வட்டம், நாரணம்மாள்புரம் பகுதி -1 கிராமத்தில் அடங்கியுள்ள அயன் புஞ்சை சர்வே 812 ஹெக்டேர் 4.84.00 இதில் பிரிவின்றி 3ல் 2 பங்கு மட்டும் தபசில் விபரம் சரி.

N. Shalith

N. Abdul Wahid

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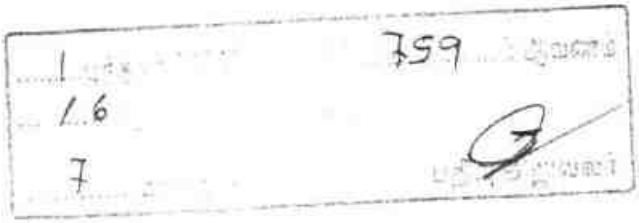

தபசில் சொத்து நாரணம்மாள்புரம் பகுதி 1 கிராம எல்கைகுள்பட்டது.

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tirunelveli Dist

N Abdul Wahid

சாட்சிகள்

A. Bala mukugan
S/o A. Aruna Salem
6/182 POONTHOTTA Street
MALA THALUYUTHU

S/o Sankaran Pillai
24 Perumal North car street
Tirunelveli Jn

P Jeyavaalli
Mrs. P. Jeyavaalli, M.L.,
Advocate Enroll #: 754/2000
35/14-A, Manakavalam Pillai Hospital Road,
Palayamkottai, Tirunelveli - 627 002.
Mobile: 94431 84238, 89036 74238

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R/2 எண் இணை சார்பதிவாளர் திருநெல்வேலி/புத்தகம் 1/759/2023

MINING PLAN APPROVED
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Assistant Director
of Geology & Mining
Tirunelveli Dist

1899ம் ஆண்டு இந்திய முத்திரைச சட்டம் 42வது பிரிவின் கீழான சான்று

2023ம் ஆண்டு வரிசை எண் 172

திருநெல்வேலி மாவட்டம் திருநெல்வேலி வட்டம் சங்கர்நகர் 627 357 முத்துநகர் கதவு எண் 1/19 திருநெல்வேலி தமிழ்நாடு இந்தியா 627357ல் வசிக்கும் திரு முகமது சலீம் பாதுஷா என்பவரிடமிருந்து ₹ 1,000/- (ரூபாய் ஆயிரம் மட்டும்) இந்த ஆவணத்திற்காக இந்திய முத்திரைச சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்

சார்பதிவாளர் 2 எண் இணை சார்பதிவாளர்சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு 41ன் படி ஆட்சியர்
திருநெல்வேலி
நாள் 28.02.2023

2023 ஆம் ஆண்டு பிப்ரவரி மாதம் 28ம் தேதி பிப 04:15 மணியளவில் 2 எண் இணை சார்பதிவாளர் திருநெல்வேலி சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ₹ 1,385/- செலுத்தியவர்

இடது பெருவிரல்

S. f. N

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்

M. Shalith

'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது ஒப்பீட்டு எண் UKC 0894551d7af34d6ad9457b2a18c7342bdec09
(Details from UIDAI Monideen Sheik Shanith S/O. Navaskhan, 13-09-1998, xxxxxxxx3754)

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்

N. Abdul Khalid

'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது ஒப்பீட்டு எண் UKC 6469160846b046a1bc14aaf998df6306e7ac2d2

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R/2 எண் இணை சார்பதிவாளர் திருநெல்வேலி/புத்தகம்-1/759/2023

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

Details from UIDAI Mohammed Abdur Rahman Wahid S/O. Navaskhan, 13-09-1998, xxxxxxxx3668

எழுதி வாங்கியதாக ஒப்புக் கொண்டவர் இடது பெருவிரல்

"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது ஒப்பீட்டு எண்

UKC:044337b1d8c22f9a3f4bd0a742ce6b7127d298

Details from UIDAI Mohammed Saleem Badhusha S/O Navaskhan, 13-09-1994, xxxxxxxx5349

2023 ஆம் ஆண்டு பிப்ரவரி மாதம் 28ம் நாள்

முத்துமுருகன் மு
சார்பதிவாளர்
2 எண் இணை சார்பதிவாளர் திருநெல்வேலி

R/2 எண் இணை சார்பதிவாளர் திருநெல்வேலி/புத்தகம்-1/759/2023 எண்ணாகப் பதிவு செய்யப்பட்டது

நாள்: 28/02/2023
2 எண் இணை சார்பதிவாளர் திருநெல்வேலி

முத்துமுருகன் மு
சார்பதிவாளர்

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இந்திய அரசாங்கம்
Government of India
Mohammed Saleem Badhusha

3453 1412 5349

அதிகாரம்

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By
Assistant Director
of Geology & Mining
Tirunelveli Dist

Unique Identification Authority of India

Address: S/O Navaskhan
1/19 MUTHUNAGAR
SANKAR NAGAR POST
Sankarnagar, Sankarnagar
Tirunelveli, Tamil Nadu
627357

3453 1412 5349

www.uidai.gov.in

S.N

N. Shahith
N. Abdul Walid

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Tirunelveli Dist

இந்திய அரசாங்கம்
Government of India
Mohammed Sheik Shahith

7281 3754

வரிதனின் அதிகாரம்

ஆதார்

Unique Identification Authority of India

Mohamed Sheik Navaskhan
1/19, MUTHU NAGAR
SANKARNAGAR
Sankarnagar, Sankarnagar
Tirunelveli, Tamil Nadu
627357

4501 7281 3754

1947
1800 300 1947

help@uidai.gov.in

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S.P.N

N. Shahith
N. Abdul Wahid

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Government of India

Mohammed Abdur Rahman Wahid

4639 8469 3668

எனி தனின் அதிகாரம்

ஆதார்

Unique Identification Authority of India

SANKARNAGAR
Sankarnagar, Sankarnagar
Tirunelveli, Tamil Nadu
627357

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N. Shahith
N. Abdul Wahid

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Government of India

4170 4372 4987

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Assistant Director
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Tirunelveli Dist

Thalayuthu, Sankarnagar
Tirunelveli, Tirunelveli, Tamil
Nadu

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Sl.N

A. Bala murugan.

N Abdul Wahid

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भारत सरकार
GOVERNMENT OF INDIA

DOB: 05/06/1954
MALE

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भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

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By
Assistant Director
of Geology & Mining
Tirunelveli Dist

முகவரி:
S/O [illegible] 24
[illegible]
[illegible]
[illegible]
[illegible] - 627001

S/O [illegible] 24, PERUMAL
NORTH CAR STREET, VEERA
RAGAVAPURAM, Tirunelveli
Tirunelveli
Tamil Nadu - 627001

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Sl.N

N. Shaleith

N. Abdul Wahid

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Sl.N

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By
Assistant Director
of Geology & Mining
Tirunelveli Dist

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருநெல்வேலி
திருநெல்வேலி
வருவாய் கிராமம் : நாரணம்மாள்புரம் பகுதி-1

வட்டம் :

பட்டா எண் : 1465

உரிமையாளர்கள் பெயர்

1. நவாஸ்கான் மகன் முகமது சலீம் பாதுஷா -
2. நவாஸ்கான் மகன் முகமது அப்துர் ரஹ்மான் வாஜித் -
3. நவாஸ்கான் மகன் முகைதீன் ஷேக் சாகித் -

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு ஹெக் - ஏர்	தீர்வை ரூ - பை	பரப்பு ஹெக் - ஏர்	தீர்வை ரூ - பை	பரப்பு ஹெக் - ஏர்	தீர்வை ரூ - பை	
812	-	4 - 84.00	3.00	--	--	--	--	2022/0103/29/303372----- 28-05-2022
		4 - 84.00	3.00					

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் 29/01/025/01465/10566 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 28-02-2023 அன்று 02:52:36 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

N. Shahish
N. Abdul Wahid

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भारत

रु.20000

बीस हजार रुपये

WENTY THOUSAND RUPEES

Rs.20000

INDIA

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

மிழ்நாடு तमिलनाडु TAMILNADU

18 FEB 2022

P. ஜோசப் P.

முகமது சலீம் பாதுஷா
சங்கர் நகர்

ரூபாய்.24,00,000/-க்கு கிரையம்

2022ம் வருடம் பிப்ரவரி மாதம் 21ம் தேதி திருநெல்வேலி மாவட்டம், திருநெல்வேலி வட்டம், சங்கர்நகர் 627 357, முத்துநகர், கதவு எண். 1/19ல் குடியிருந்து வரும் திரு.நவாஸ்கான் அவர்கள் குமாரர் முகமது சலீம் பாதுஷா (ஆதார் எண்.345314125349) (Pan No.BVSPB4680B)-1 திருநெல்வேலி மாவட்டம்,

கிரையம் வாங்குபவர்கள்

கிரையம் கொடுப்பவர்கள்

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ANNEXURE VIII

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Assistant Director
of Geology & Mining
Tirunelveli Dist

आधार

இந்திய அரசாங்கம்
Government of India

இந்திய தனிப்பட்ட அடையாள ஆணைய அமைப்பு
Unique Identification Authority of India

பதிவேட்டு எண்/ Enrolment No.: 2192/40348/02235

To
முகமது சலீம் பாதுஷா
Mohammed Saleem Bachusha
S/O: Navaskhan
1/19
MUTHUNAGAR
SANKAR NAGAR POST
Sankarnagar
Tirunelveli Tamil Nadu - 627357
9600863322

உங்கள் ஆதார் எண் / Your Aadhaar No. :

3453 1412 5349

VID : 9134 9633 3125 1148

எனது ஆதார், எனது அடையாளம்

Government of India

முகமது சலீம் பாதுஷா
Mohammed Saleem Badhusha
பிறந்த நாள்/DOB: 13/09/1994
ஆண்/ MALE

3453 1412 5349

VID : 9134 9633 3125 1148

எனது ஆதார், எனது அடையாளம்

AADHAAR

தகவல்

- ஆதார் அடையாளத்திற்கான சான்று, குடியுரிமைக்கு அல்ல
- பாதுகாப்பான QR குறியீடு/ ஆஃப்லைன் XML/ ஆன்லைன் அங்கீகாரத்தைப் பயன்படுத்தி அடையாளத்தை சரிபார்க்கவும்
- இது எலக்ட்ரானிக் செயல்முறை மூலம் தயாரிக்கப்பட்ட கடிதமாகும்.

INFORMATION

- Aadhaar is a proof of identity, not of citizenship
- Verify identity using Secure QR Code/ Offline XML/ Online Authentication
- This is electronically generated letter

- ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும்
- பல்வேறு அரசு மற்றும் அரசு சாரா சேவைகளை எளிதில் பெற ஆதார் உதவுகிறது
- உங்கள் மொபைல் எண் மற்றும் மின்னஞ்சல் ஐடியை ஆதாரில் புதுப்பிக்கவும்
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Address:
S/O: Navaskhan, 1/19, MUTHUNAGAR, SANKAR NAGAR POST, Sankarnagar, Tirunelveli, Tamil Nadu - 627357

3453 1412 5349

VID : 9134 9633 3125 1148

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870899

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Kanniyakumari Dist

சென்னைப் பல்கலைக் கழகம்
University of Madras

Returnable up to [illegible] 2020

Regional Controller of Mines
INDIAN BUREAU OF MINES

அறிவியல் புலம்
FACULTY OF SCIENCE

சென்னைப் பல்கலைக் கழகப் பேரவை 1989 ஆம் ஆண்டு ஏப்ரல் மாதம் கூடிய பயன்முறைக் கணிமவியல் நா.ரவீந்திரன் எனபவர் முதல் வகுப்பில் தேர்ச்சி பெற்றார் என்று அதற்கு தேவையான சான்றிதழ்கள் அறிவியல் நிறைஞர் எனும் பட்டத்தை அளிக்கும் பக்கலைக் கழக இலச்சினையுடன் வழங்குகிறது.

The Senate of the UNIVERSITY OF MADRAS hereby makes known that N. Ravinthiran has been admitted to the Degree of Master of Science, he/~~she~~ having been certified by duly appointed Examiners to be qualified to receive the same in Applied Geology and has been placed in the First Class, at the Examination held in April 1989

Given under the Seal of the University.

Chepauk, Madras, Dated 19.12.1991

Registrar

Vice-Chancellor

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MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

T. N. G. S. T. No. 6040126
C. S. T. No. 488148 dt. 30-5-73

"JANATHACEM"
P. B. No. 45
Phone : 30710
(4 lines)
Quarry : 84761

Janathacem Industries Limited

Mfrs : Janathacem Wall Coat

Factory & Admn :
488 / 1, Sankarankoil Road,
RAJAPALAYAM - 626 117.

30.09.2000

TO WHOMSOVER IT MAY CONCERN

This is to certify that Sri.N.RAVINTHIRAN,M.Sc.,(Applied Geologist) S/O. R.NARAYANASAMY residing at 3-105,Kannithevanpatti village, Keelorajagulaman (Post) Rajapalayam (Taluk) Virudhunagar Dist. Pin code 626136, was employed as a Geologist from 01.09.1993 to 30.09.2000 at Our THENMALAI LIMESTONE MINES Of M/S. JANATHACEM INDUSTRIES LIMITED (formarly M/S.LIMENAPH CHEMICALS) RAJAPALAYAM.

He has been vested with the work involing prospecting, Collecting samples, Knowing the chemicals analysis etc. He was also Supervising various Mining operation including drilling, blasting and excavation by powershovel. He has been successfully carrying out his duties and has proven himself a quite efficient, competent, sincere and hard working official in the company.

He has got a total of seven years post graduate experience in the Mechanished mining field.

He deserves all the encouragement and I wish him all the success in his carrier.

JANATHACEM INDUSTRIES LTD. S. PUDUR

For JANATHACEM INDUSTRIES LIMITED,
(FORMARLY LIMENAPH CHEMICALS)

30.09.2000

(R.SARGUNAM)
DEPUTY GENERAL MANAGER (MINES)
THENMALAI LIMESTONE MINE

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Sl.2

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MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

T. N. G. S. T. No. 6040126
C. S. T. No. 488148 dt. 30-5-73

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488 / 1, Sankarankoil Road,
RAJAPALAYAM - 626 117.

30.09.2000

TO WHOMSOVER IT MAY CONCERN.

This is to certify that Sri.N.RAVINTHIRAN, M.Sc., (Applied Geology) S/O.R.Narayanasamy , joined in our Organisation as Geologist on 01.09.1993. Due to his Personnel reasons he submitted his resignation and the same was accepted with regret. He was releaved from his duties with effect from 30.09.2000.

During his tenure his conduct and character was good, and he carried out his duties to the best satisfaction of his superiors and Management.

We wish him all success in his life.

For JANATHACEM INDUSTRIES LTD.

(T.VENKATARAJAGOPALAN)
GENERAL MANAGER

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MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

GOVERNMENT OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY

Certificate of practical experience granted by the Manager to a candidate for a **MANAGER'S/SURVEYOR'S/FOREMAN'S/MATE'S** Certificate of competency examination under the Metalliferous Mines Regulations 1961.

R.SARGUNAM being the Manager of **THENMALAI LIMESTONE MINES, S.PUDUR** belonging to **M/S.LIMENAPH CHEMICALS, RAJAPALAYAM** do hereby certify that Sri **N.RAVINTHIRAN S/O.R.NARAYANASAMY** (whose signature appended) worked in the above Mine from 01.09.1993 to 09.08.96 and is still working. During his term of work aforesaid he has obtained practical experience as detailed overleaf. The duties connected with his work have involved his continuous attendance at the Mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper Person to be examined for a certificate of competency.

10-8-96

SIGNATURE & DATE
MANAGER (MINES)
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Santhattiapuram Pudur
THENMALAI POST-627 770

Signature of the candidate

Note: Delete if not applicable

State name of Mineral : **LIMESTONE**

Sl No.	Particulars of practical Experience	Place of Experience (B)	Period of practical Experience (C) From -- To	Total Experience Y	M	D
1.	Drilling(Rock drills)	Machanised open cast	01.09.93 15.04.94 --	7	14	
2.	Blasting (small dia)	,,	16.04.94 20.11.94 --	7	14	
3.	Wagon drilling	,,	21.11.94 10.08.95 --	8	19	
4.	Blasting(long&large dia holes)	,,	11.08.95 08.03.96 -	6	25	
5.	Supervision (All mining activities)	,,	09.03.96 09.08.96 --	5	---	
			(Still working) Grand total ----------			

Two years eleven months and Thirteen days only 02. 11. 13

d. Average monthly output during the above period : 5000 Tons

e. Average daily employment of Men&Machinery in H.P. during the period is given below:

In below ground working	In opencast working	In all
--- Nil --	Men 126+17	143
	Machinery 1559 H.P.	

Signature of the candidate

10-8-96

Signature of Manager with date
MANAGER (MINES)
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Santhattiapuram Pudur
THENMALAI POST-627 770

162

S.S.N

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

GOVERNMENT OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY

Certificate of practical experience granted by the Manager to a candidate for a **MANAGER'S/SURVEYOR'S/FOREMAN'S/MATE'S** Certificate of competency examination under the Metalliferous Mines Regulations 1961.

R.SARGUNAM being the Manager of **THENMALAI LIMESTONE MINES, S.PUDUR** belonging to **M/S.LIMENAPH CHEMICALS, RAJAPALAYAM** do hereby certify that Sri.**N.RAVINTHIRAN S/O.R.NARAYANASAMY** (whose signature appended) worked in the above Mine from 01.09.1993 to 09.08.96 and is still working. During his term of Work aforesaid he has obtained practical experience as detailed overleaf. The Duties connected with his work have involved his continuous attendance at the Mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper Person to be examined for a certificate of competency.

30.09.2000

SIGNATURE WITH DATE

MANAGER (MINES)
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Senthattiapuram Pudur
THENMALAI POST-627 770.

Signature of the candidate
Note: Delete if not applicable
State name of Mineral : **LIMESTONE**

Sl No.	Particulars of practical Experiance	Place of Experience (B)	Period of practical Experience (C) From	-- To	Total Experience Y	M	D
1.	Mining mate	Semi-Mechanised open cast working	10.08.96	15.06.99	2	10	5
2.	Mining Foreman	,,	16.06.99	30.09.2000	1	3	14
			Grand total		04.	01.	19

Four years One month Nineteen days only

d. Average monthly output during the above period : 4000 Tons
e. Average daily employment of Men&Machinery in H.P. during the period is given below:

In below ground working	In opencast	working	In all
--- Nil --	Men	102+13	115
	Machinery	1559 H.P.	

Signature of the candidate

30.09.2000

Signature of Manager (MINES) date

MANAGER (MINES)
Thenmalai Limestone Mines
(Owners: Limenaph Chemicals)
Senthattiapuram Pudur
THENMALAI POST-627 770.

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S.P.N

PLAN APPROVED
Assistant Director of Geology & Mining

REGIONAL CONTROLLER OF MINES.
INDIAN BUREAU OF MINES
CHENNAI

CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON TO PREPARE MINING PLANS

(Under Rule 22C of Mineral Concession Rules, 1960)

Shri N.RAVINTHIRAN *resident*

of 3/105,Kannithevanpatti,Keelarajakularaman(PO),Virudhunagar dt.*son*

of R.NARAYANASAMY, *having given satisfactory evidence of his qualifications and experience is hereby granted recognition under Rule 22C of the Mineral Concession Rules, 1960 as a Qualified Person to prepare Mining Plans.*

His registration number is RQP/MAS/130/98/A

This recognition is valid for a period of two years ending 21.12.2000

M. K. A.
Regional Controller of Mines
Indian Bureau of Mines
Chennai
22.12.98

Place : CHENNAI
Date : 21.12.98

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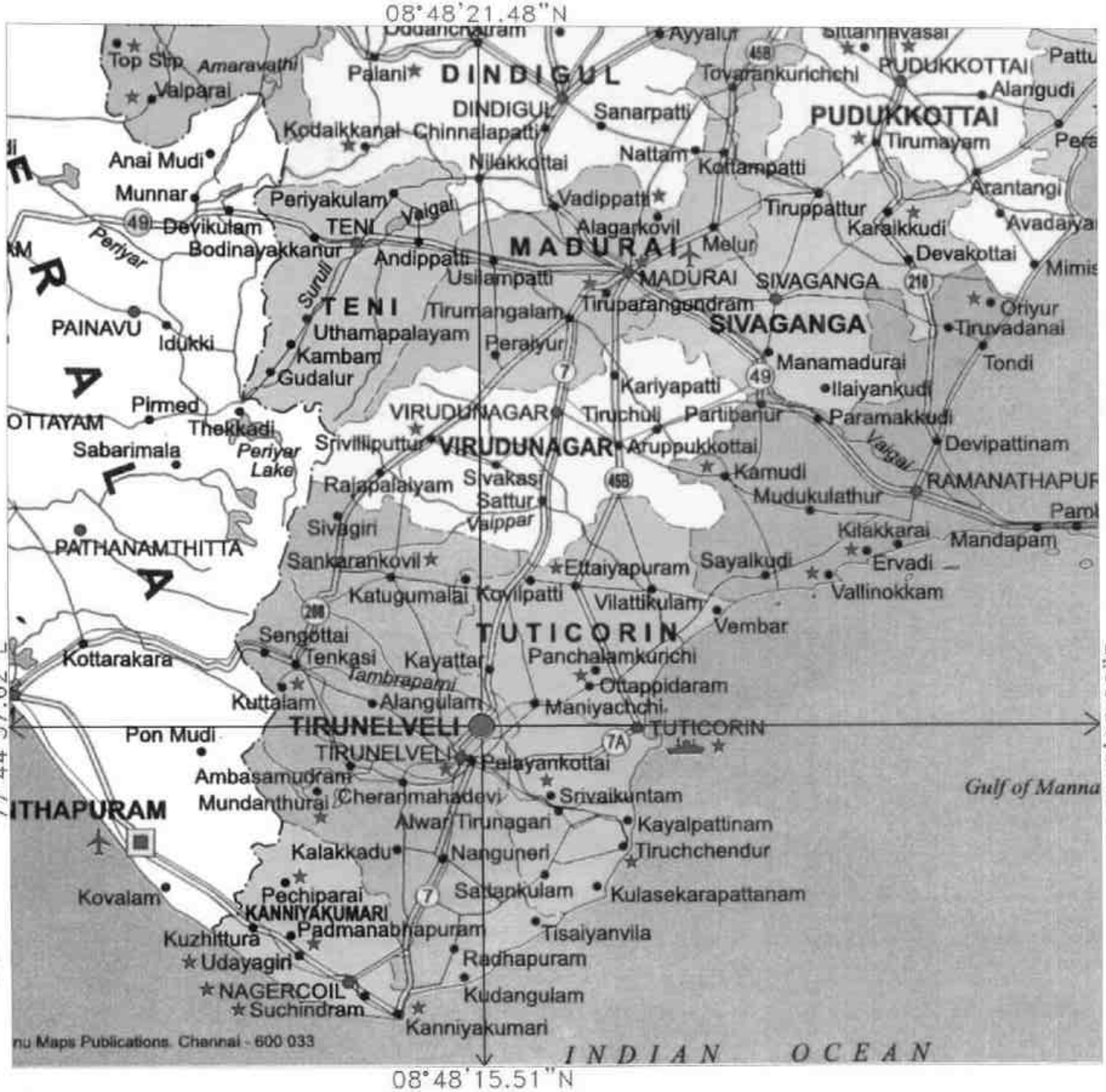

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist.

PLATE NO.
DATE OF SURVEY : 09.10.2023

APPLICANT:
THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI – 627 357.

QUARRY APPLIED LEASE AREA:
S.F.NO : 812(P)
EXTENT : 1.95.0 Ha.
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

Q. L. APPLIED AREA :

TOPO SHEET NO : 58 H / 13

LATTITUDE :08°48'15.51"N to 08°48'21.48"N

LONGITUDE :77°44'57.62"E to 77°45'03.02"E

LOCATION PLAN

NOT TO SCALE

PREPARED BY :

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

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

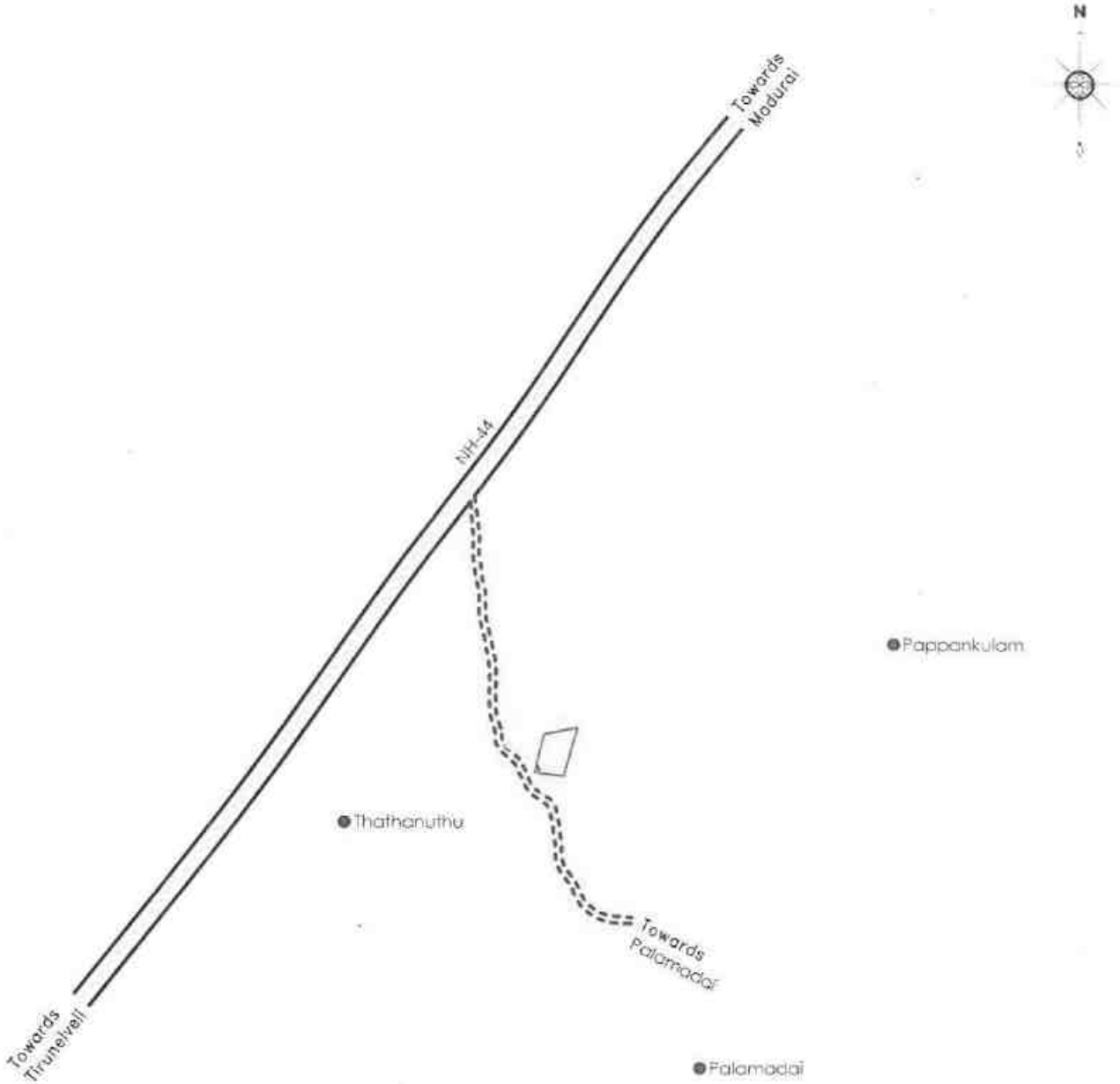

PLATE NO:ID

DATE OF SURVEY : 09.10.2023

APPLICANT:

THIRU.N.MOHAMMED SALEEM BABU (HA)
S/o.NAVASKHAN
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI - 627357.

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

QUARRY APPLIED LEASE AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

Q.L.A.AREA

APPROACH ROAD

CART TRACK

PANCHAYAT ROAD

NATIONAL HIGHWAY

HABITATIONS

KEY PLAN

Not To Scale

PREPARED BY:

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

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

Sp.2

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PLATE NO: IA

DATE OF SURVEY : 09.10.2023

APPLICANT:

THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI - 627 357.

QUARRY LEASE APPLIED AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART I
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

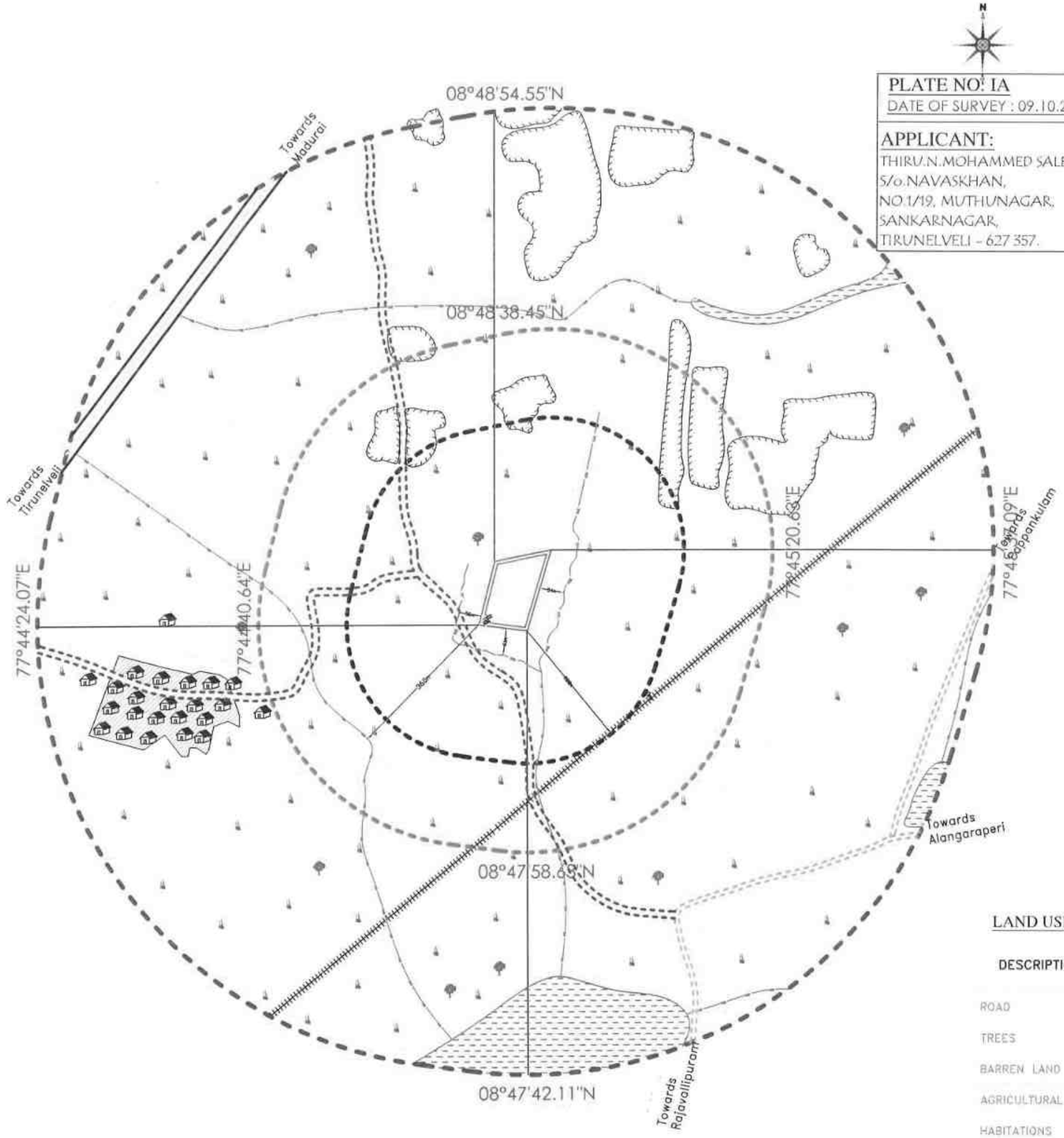
MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

INDEX

TOPO SHEET NO : 58 H/13

LATITUDE :08°48'15.51"N to 08°48'21.48"N

LONGITUDE :77°44'57.62"E to 77°45'03.02"E



Q.L.APPLIED AREA	
7.5m, 10m & 50m SAFETY	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
CART TRACK	
FOOT PATH	
PANCHAYAT ROAD	
NATIONAL HIGHWAY	
BARREN LAND	
TREES	
AGRICULTURAL LAND	
QUARRY PIT	
HABITATIONS	
ODAI	
TANK	
RAILWAY TRACK	

LAND USE PATTERN

DESCRIPTION	AREA IN (%)
ROAD	04
TREES	12
BARREN LAND	57
AGRICULTURAL LAND	10
HABITATIONS	03
WATER BODIES	12
RAILWAY TRACK	02

ENVIRONMENTAL PLAN

SCALE 1:10,000

PREPARED BY :

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

N.RAVINTHIRAN.M.Sc.,(App.Geo)
QUALIFIED PERSON

SDN

166

PLATE NO: IB

DATE OF SURVEY : 09.10.2023

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

APPLICANT:

THIRU.N.MOHAMMED SALEEM BAPHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI - 627 357.

QUARRY APPLIED LEASE AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

TOPO SHEET NO : 58 H / 13

LATITUDE :08°48'15.51"N to 08°48'21.48"N

LONGITUDE :77°44'57.62"E to 77°45'03.02"E

Q.L.APPLIED AREA	
7.5m, 10m & 50m SAFETY	
300M RADIUS	
500M RADIUS	
1KM RADIUS	
APPROACH ROAD	
FOOT PATH	
CART TRACK	
PANCHAYAT ROAD	
NATIONAL HIGHWAY	

SATELLITE IMAGERY MAP

SCALE 1:10,000

PREPARED BY :

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N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

Sl.2

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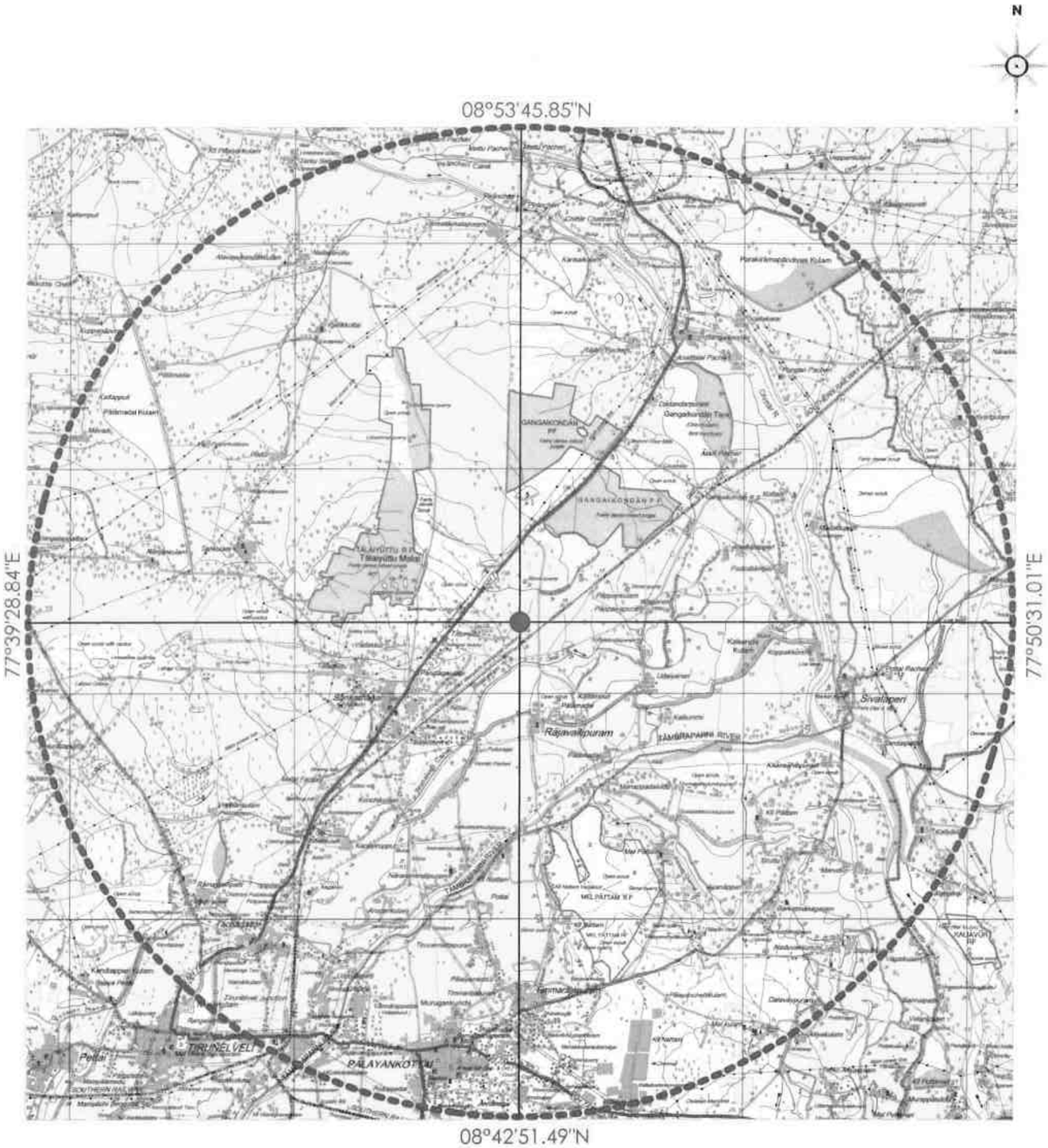

PLATE NO-I C

DATE OF SURVEY : 09.10.2023

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

APPLICANT:

THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI – 627 357.

QUARRY APPLIED LEASE AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

TOPO SHEET NO : 58 H / 13

LATITUDE :08°48'15.51"N to 08°48'21.48"N

LONGITUDE :77°44'57.62"E to 77°45'03.02"E

Q.L.APPLIED AREA

10KM RADIOUS

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

PREPARED BY :

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

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

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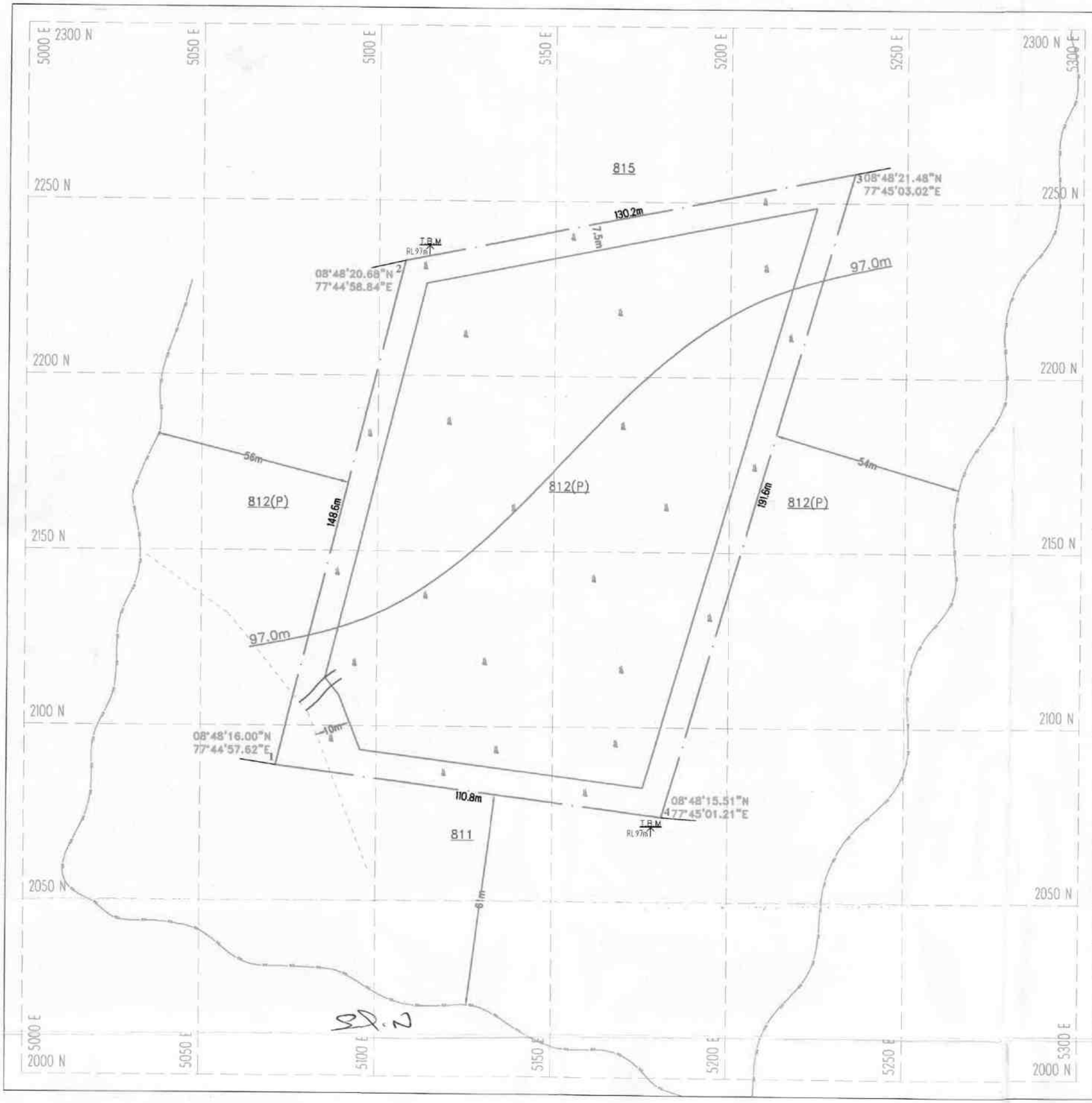


MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist.

PLATE NO-II

DATE OF SURVEY : 09.10.2023

APPLICANT:

THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI - 627 357.

QUARRY APPLIED LEASE AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

- Q.L. APPLIED BOUNDARY
- 7.5m, 10m & 50m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- APPROACH ROAD
- CONTOUR
- SCRUB
- FOOT PATH
- ODAI

QUARRY LEASE & SURFACE PLAN

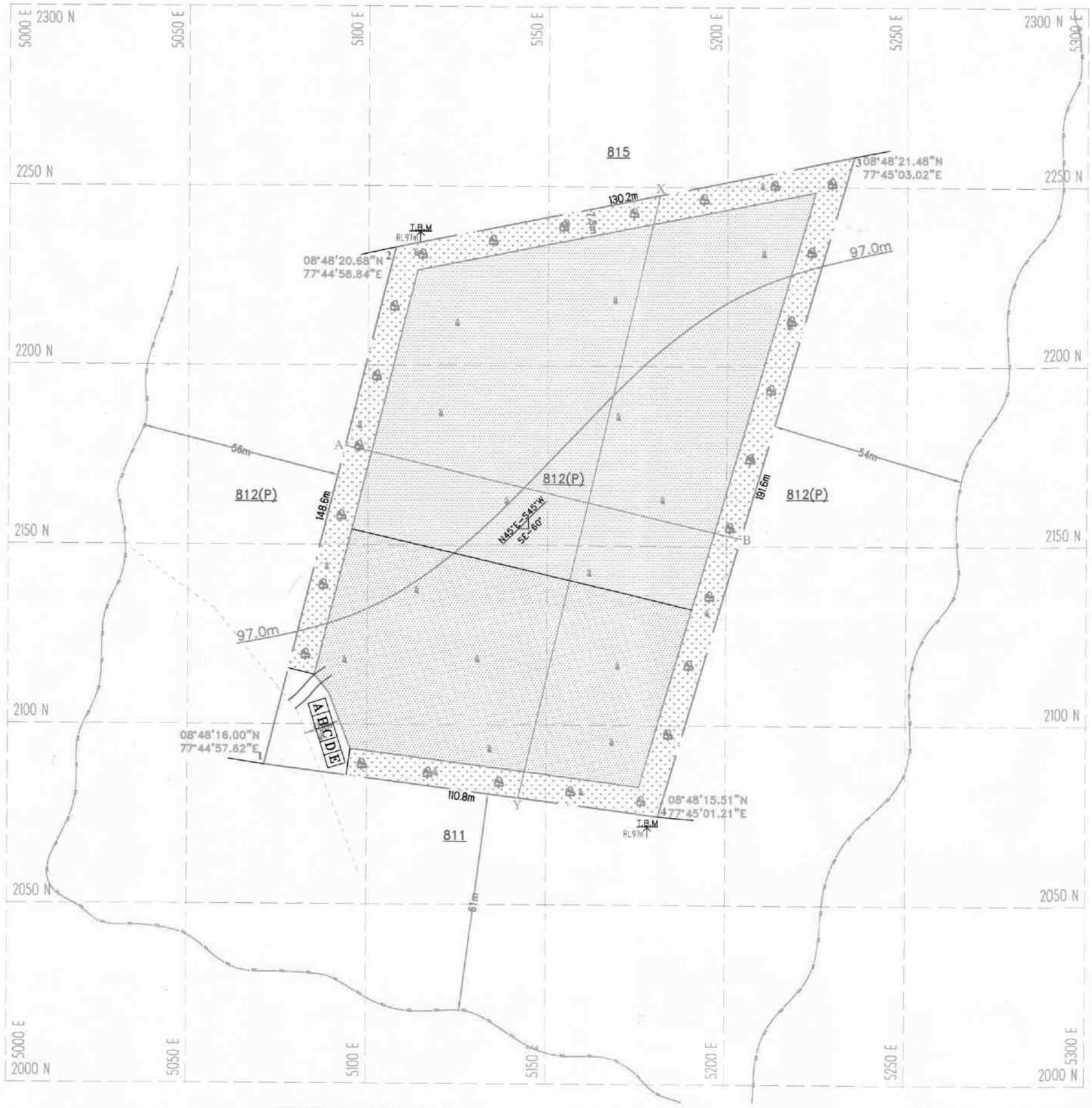
SCALE 1 : 1000

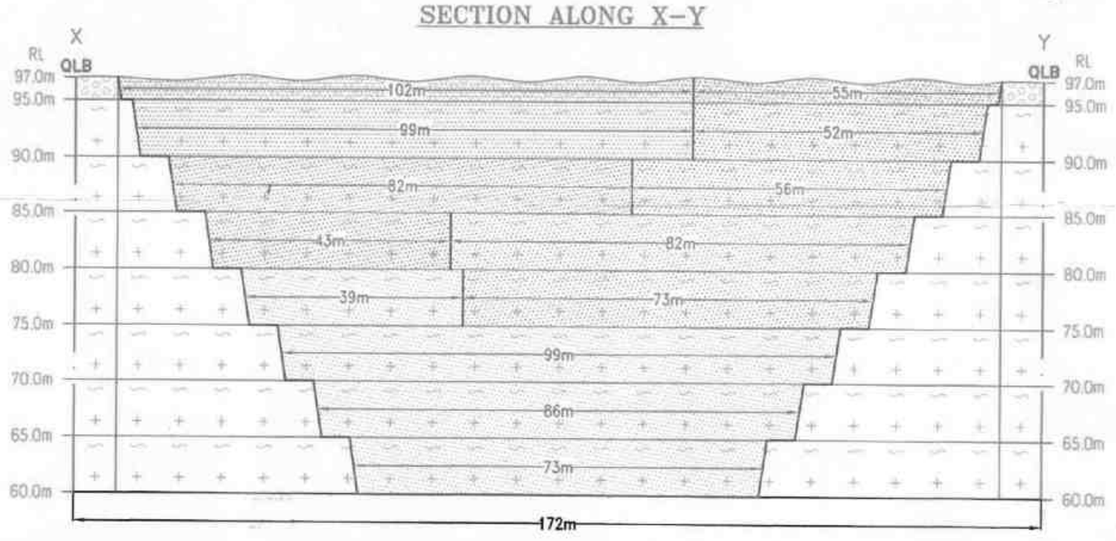
PREPARED BY:

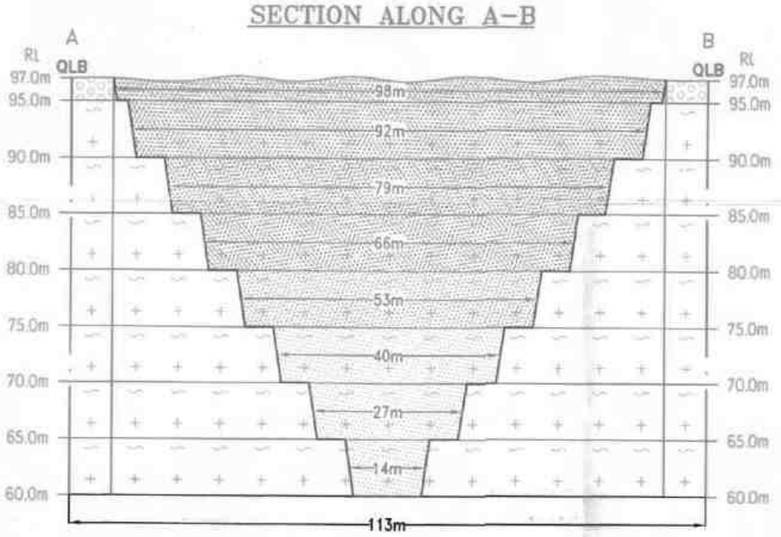
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

170







MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	Nil	1.54.0
INFRASTRUCTURE	Nil	0.01.0
ROADS	Nil	0.01.0
GREEN BELT	Nil	0.39.0
UN-UTILIZED AREA	1.95.0	Nil
GRAND TOTAL	1.95.0	1.95.0

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

Proposed area to be Planted

PROPOSED SITE SERVICES

A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET

PLATE NO-III

DATE OF SURVEY : 09.10.2023

APPLICANT:

THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI - 627 357.

QUARRY APPLIED LEASE AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

Q.L. APPLIED BOUNDARY
7.5m,10m & 50m SAFETY DISTANCE
TEMPORARY BENCH MARK
APPROACH ROAD
CONTOUR
SCRUB
FOOT PATH
ODAI
GRAVEL
ROUGH STONE
STRIKE & DIP

TOPOGRAPHY, GEOLOGICAL & YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

SCALE 1:1000
SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:

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

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

S.P.N

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MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

5000 E 5050 E 5100 E 5150 E 5200 E 5250 E 5300 E
2300 N 2250 N 2200 N 2150 N 2100 N 2050 N 2000 N

815

812(P)

811

08°48'20.68"N
77°44'58.84"E

08°48'21.48"N
77°45'03.02"E

08°48'16.00"N
77°44'57.62"E

08°48'15.51"N
77°45'01.21"E

T.B.M
RL 97m

130.2m
97.0m
56m
54m
148.6m
191.6m
60.0m
N45°E-S45°W
SE-60°
110.8m
A B C D E
X
Y
A
B

ULTIMATE PIT DIMENSION
L157m(Max)X98m(Avg)XD37m(Max)

Proposed area to be Planted

PROPOSED SITE SERVICES
A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET

PLATE NO-IV
DATE OF SURVEY : 09.10.2023

APPLICANT:
THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI - 627 357.

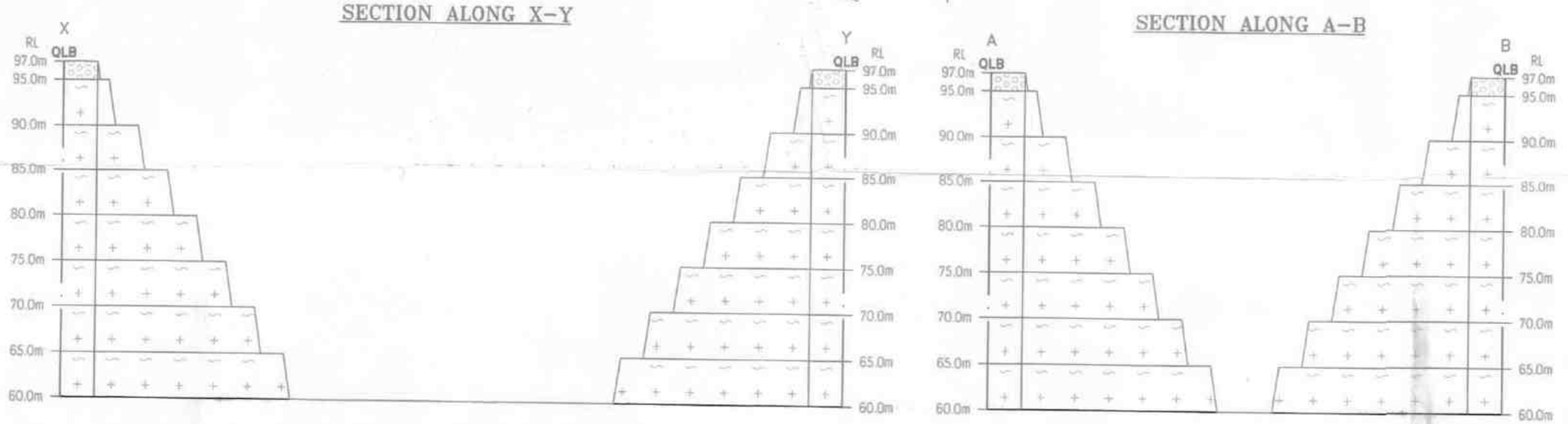
QUARRY APPLIED LEASE AREA:
S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

Q.L. APPLIED BOUNDARY	
7.5m,10m & 50m SAFETY DISTANCE	
TEMPORARY BENCH MARK	T.B.M
APPROACH ROAD	
CONTOUR	
SCRUB	
FOOT PATH	
ODAI	
GRAVEL	
ROUGH STONE	
STRIKE & DIP	
PROPOSED QUARRY PIT	

SECTION ALONG X–Y

SECTION ALONG A–B



CONCEPTUAL PLAN & SECTIONS
SCALE 1:1000
SECTIONS HOR 1:1000, VER 1:500

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

SR.2

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ANNEXURE-6

From

Thiru.L.Suresh., M.Sc.,
Joint Director/
Assistant Director(i/c),
Geology and Mining,
Tirunelveli.

To

Thiru.N.Mohammed Saleem Badhusha,
S/o.Navaskhan,
1/19, Muthunagar,
Sankarnagar,
Tirunelveli - 627 357.

Rc.No.M2/197/2023, dated. 14.11.2023

Sir,

Sub: **Mines and Minerals** - Minor Minerals - Tirunelveli District - Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for quarrying roughstone and gravel over an extent of 1.95.0 hectares of patta lands in SF. No.812(P) of Naranammalpuram Part-I Village - Tirunelveli Taluk - Certain Particulars requested - for obtaining Environmental Clearance - furnished - reg.

Ref:

1. Quarry lease application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, Sankarnagar, Tirunelveli, dated. 02.03.2023.

2. Precise Area Communication letter in Rc. No.M2/197/2023, dated. 06.10.2023.

3. Mining Plan Approval letter No. M2/197/2023, dated.14.11.2023.

4. Letter received from the applicant Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, dated. 14.11.2023.

*****

Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District - 627357 has applied for grant of quarry lease for quarrying Roughstone and Gravel over an

extent of 1.95.0 hectares of patta land in SF. No. 812(P) of Naranammalpuram Part - I Village, Tirunelveli Taluk, Tirunelveli District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. Based on the recommendations of the Revenue Divisional Officer, Tirunelveli and the Assistant Geologist of Geology and Mining, Tirunelveli the application preferred by Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for grant of quarry lease for quarrying roughstone and gravel in the subject area was considered for grant for a period of 5 years and precise area was communicated over an extent of 1.95.0 hectares of patta land in SF. No.812(P) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District for a period of 5 years vide reference 2nd cited.

3. The Mining Plan submitted by the lessee, Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan for quarrying roughstone and gravel has been approved vide this office letter No.M2/197/2023, dated.14.11.2023 for obtaining Environmental Clearance as per Rule 41 and 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

4. In the reference 4th cited, Thiru.N.Mohammed Saleem Badhusha, S/o.Navaskhan has requested to furnish certain particulars such as existing / proposed / abandoned quarries / mines within a radial distance of 500 meters from the periphery of the existing mining

lease hold area for obtaining environmental clearance from the State Level Environment Impact Assessment Authority, Chennai.

5. The details of quarry leases falling within a radial distance of 500 meters from the subject leasehold area are furnished below:-

Sl. No	Name of the Lessee	Village & SF. No.	Extent - Hects	Lease status
a. Details of Abandoned Quarries				
1.	C.Shanmugavel	Naranammalpuram (V), SF. No. 817/2	2.18.0	Proceedings No. M2/32387/1999, dt.14.07.1999 for a period of 5 years from 26.07.1999 to 25.07.2004
2.	A.P.Maharaja	Naranammalpuram (V), SF. No. 824/3A	0.80.97	Proceedings No. M3/17064/2004, dt.05.08.2004 for a period of 5 years from 30.08.2004 to 29.08.2009
3.	R.P.S.Krishnan	Naranammalpuram (V), SF. Nos. 824/1 & 825	1.74.0	Proceedings No. M3/113038/2005, dt.28.02.2006 for a period of 5 years from 27.03.2006 to 26.03.2011
4.	P.Katchimydeen	Naranammalpuram (V), SF. Nos. 817/1B1C	1.62.0	Proceedings No. M3/99246/2004, dt.20.11.2004 for a period of 3 years from 29.11.2004 to 28.11.2007

b. Details of Expired Quarries				
Nil				
c. Present Proposed Quarries				
1.	Thiru.K.Ananthaperumal, S/o.Kanniah, 160D/8, Polepettai West, Thoothukudi District.	SF. Nos. 414/1, 415A/1A & 415A/2A, Palamadai Village, Tirunelveli Taluk	6.60.5	Proposed quarry
2.	Thiru.N.Mohideen Sheik Shahith, S/o.Navaskhan, 1/19, Muthu Nagar, Sankar Nagar, Tirunelveli - 627 357	SF. No. 807 of Naranammal puram Part - I village, Tirunelveli Taluk	1.94.50	Proposed quarry
3.	Thiru.A.Kothar Mydeen, S/o.Ahamed Meeran, Thenkulam, Tirunelveli.	SF.No.1660/4, Gangaikondan village, Tirunelveli Taluk	1.62.0	Proposed quarry
4.	N.Mohammed Saleem Badhusha, S/o.Navaskhan, 1/19, Muthunagar, Sankarnagar, Tirunelveli District - 627357.	SF. No. 812(P), Naranammal puram Part - I village, Tirunelveli Taluk	1.95.0	Instant proposal
d. Existing quarry leases				
1.	Thiru.P.K.S.Ahamad Meeran, S/o. Mohamed Sultan, 18, Puthu Amman Kovil Street, Sindhupundhurai, Tirunelveli Taluk and District.	SF. No. 1665/1B, Gangaikondan Part - 2 Village, Tirunelveli Taluk	2.10.5	06.10.2020 to 05.10.2025

2.	Thiru.C.Rasheed Ali, S/o.Chinna Sheik Rowther, 9/100, Mela Pallivasal Street, Mela Thalaiyuthu, Sankar Nagar, Tirunelveli - 627357	SF. No. 1662/1A(P) (0.38.0) & 1663/1A (1.21.5), Gangaikondan Part - 2 Village, Tirunelveli Taluk	1.59.5	21.01.2022 to 20.01.2032

Joint Director/
Assistant Director(i/c),
Geology and Mining,
Tirunelveli.

ANNEXURE-4

திருநெல்வேலி மாவட்டம், திருநெல்வேலி வட்டம், நாரணம்மாள்-புரம் பகுதி-I வருவாய் கிராமத்தின் புல.எண்: 812-ன் விஸ்தீர்ணம் 4.84.0 ஹெக்டேர் ஆனது கிராம கணக்கில் பட்டா.எண்: 1465-ல் முகமது சலிம் பாதுஷா மற்றும் இரண்டு நபர்களின் பெயர்களில் கூட்டா தாக்கல் ஆகி உள்ளது. மேற்படி புல.எண்ணின் மொத்த பரப்பான 4.84.0 ஹெக்டேரில் இவாரி வரிமம் பெற விண்ணப்பித்துள்ள 1.95.0 ஹெக்டேர் பிரஸ்தாப நிலத்தில் நிலவியல் ஆடைகள் மற்றும் நீர்நிலைகள் எதுவும் இல்லை மேலும் மேற்படி புலத்தில் இரண்டு 300 மீட்டர் அற்றளவில் குடியிருப்புகள், வரலாற்று சிறப்பு மிக்க புராதான சின்னங்கள் மற்றும் கோயில்கள் ஏதும் நாளது தேதி வரையில் இல்லை, மேற்படி இடத்தில் சுருங்கல் மற்றும் கரள் வெட்டி எடுக்க மேற்படி கிராமத்தில் நாளது தேதி வரையில் ஆட்சேபணை ஏதும் இல்லை என்ற விபரத்தினை இந்த சான்று வழங்கப்படுகிறது.

30-11-2023

கிராம நிர்வாக அலுவலர்
25 நாரணம்மாள்புரம் பகுதி-I கிராமம்
திருநெல்வேலி வட்டம்

TOPOGRAPHICAL VIEW OF NARANAMMALPURAM PART_1 VILLAGE
N.MOHAMMED SALEEM BADHUSHA ROUGHSTONE/ GRAVEL QUARRY LEASE APPLIED AREA

LOCATION DETAILS

Name and Address of the Applicant	: N. Mohammed Saleem Badhusha, S/o Shri. Navaskhan, 1/19, Muthunagar, Sankar Nagar, Tirunelveli – 627357.
S.F.No	: 812(P)
Extent	: 1.95.0 Ha
Village	: Naranammalpuram Part-I
Taluk	: Tirunelveli
District	: Tirunelveli
State	: Tamilnadu

07-12-2023

Attestation of the Village Administrative officer

Signature of the Applicant

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ANNEXURE-6

ANNEXURE-6

ANNEXURE IV

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருநெல்வேலி

வட்டம் : திருநெல்வேலி

பட்டா எண் : 1465

வருவாய் இராமம் : நாரணம்மாள்புரம் பகுதி-1

உரிமையாளர்கள் பெயர்

1. நவாஸ்கான் மகன் முகமது சலீம் பாதுஷா
2. நவாஸ்கான் மகள் முகமது அப்துர் ரஹ்மான் வாஜித்
3. நவாஸ்கான் மகன் முகைதீன் ஷேக் சாஹித்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
812	-	4 - 84.00	3.00	--	--	--	--	2022/0103/29/303372-- -- 28-05-2022
		4 - 84.00	3.00					

குறிப்பு2 :

	1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை காண்க **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **29/01/025/01465/10566** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
	2. இத் தகவல்கள் 27-02-2023 அன்று 10:35:56 AM நேரத்தில் அச்சடிக்கப்பட்டது.
	3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

S.P.N

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ANNEXURE V

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

132 – ஆம் பசலியில் மாவட்டம் வட்டம்

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.						சாதுபடி யாளரின் பெயர்.	முதல் போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	பாப்பு.	தீர்வை	ஒரு போகம் அல்லது இரு போகம்.	கைப்பற்று தாரருடைய பெடரும் எண்ணும் அல்லது அனுபோக தாரருடைய பெயர்.	நிலத்தின் வந்த பகுதி மாவது சாதுபடியாளரால் பயிரிடப்பட்டுள்ளதா.	வந்த மாதத்தில் பயிர் செய்யப்பட்டது வந்த மாதத்தில் அறுவடை செய்யப்பட்டது	பயிரின் பெயர்.	பயிரிடை / அறுவடை யான பரப்பு.	உண்மையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விழுக்காடு.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
812		1.34	300		1465 [illegible]			[illegible]			

[illegible]

27-02-2023

கிராம நிர்வாக அலுவலர்
25 நாரணம்மாள்புரம் பகுதி - கிராமம்
திருவநல்வேலி வட்டம்

380/12-R.F.III-A10 – 20,00,000 Cps.–GBP.-Mdu-7-2019.

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S.P.N

ANNEXURE VI

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

இ. எண். 25. நாரணம்மாள்புரம் பகுதி I.

1	2	3	4	5	6	7	8	9	10	11
							ஆ. ப.	சிறு.எர்ஸ்.	கு. ப.	
...	807	ர	பு	...	8-5	7	0 62	1 94.5	1 20	281 அ. முகம்மது மீரான்.
...	808	ர	பு	...	8-5	7	0 62	2 00.5	1 25	281 அ. முகம்மது மீரான்.
...	809	ர	பு	...	8-5	7	0 62	0 85.5	0 53	281 அ. முகம்மது மீரான்.
	810	ர	பு		8-5	7	0 62	1 26.0	0 78	281 அ. முகம்மது மீரான்.
...	811	ர	பு		8-5	7	0 62	2 96.0	1 83	282 அ. முகம்மது முபாரக்.
...	812	ர	பு	...	8-5	7	0 62	4 84.0	3 00	282 அ. முகம்மது முபாரக்.
...	813	ர	பு		8-5	7	0 62	1 86.5	1 15	282 அ. முகம்மது முபாரக்.
1	814-1	ர	பு		8-5	7	0 62	2 02.0	1 25	32 இந்தியா சிமிண்ட் லிமிடெட் கம்பெனி.
2	-2	ர	பு	..	8-5	7	0 62	0 90.0	0 55	484 மு. ரெஜினா பேகம் மற்றும் ஒன்பது பேர்களும். *
								2 92.0	1 80	
1	815 பர	ர	பு	...	8-5	7	0 62	3 19.5	1 98	32 இந்தியா சிமிண்ட் லிமிடெட் கம்பெனி.
2	-பர	ர	பு	...	8-5	7	0 62	1 32.0	0 81	484 மு. ரெஜினா பேகம் மற்றும் ஒன்பது பேர்களும். *
								4 51.5	2 79	

* விவரப்பட்டியலைப் பார்க்கவும்.

கிராம நிர்வாக அலுவலர்
25 நாரணம்மாள்புரம் பகுதி-I கிராமம்
திருநெல்வேலி வட்டம்

SP.N

ANNEXURE VII

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

भारतीय गैर न्यायिक

एक सौ रुपये

रु. 100

ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

CK 520086

ரூபாய் :- 100.....

நாள் :- 28 FEB 2023

எஸ்.எம். ஸெய்யது அலி
ஸ்டாம்ப் வெண்டர்
மேலப்பாளையம்.
உ.எ. 16/97

முகைதீன் சேக் காசித்
சங்கர்நகர்

குத்தகை ஆவணம்

2023ம் வருடம் பிப்ரவரி மாதம் 28ம் தேதி

திருநெலவேலி 627357, சங்கர்நகர் அஞ்சல், முத்துநகர், கதவு எண்.1/29 உள்ள இல்லத்தில் வசித்து வரும் நவாஸ்கான் அவர்கள் குமாரர் முகமது சலீம் பாதுஷா (ஆதார் எண்.3453 1412 5349) அவர்களுக்கு

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1 ... வது ...

N. Shahith.
N. Abdul Wahid

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திருநெலவேலி 627357, சங்கர்நகர் அஞ்சல், முத்துநகர், கதவு எண்.1/19 உள்ள இல்லத்தில் வசித்து வரும் நவாஸ்கான் அவர்கள் குமாரர் முகைதீன் ஷேக் சாகித் (ஆதார் எண். 4501 7281 3754) (Pancard No.EKYPM4288Q)-1 ஷை முகவரியில் குடியிருந்து வரும் ஷை 1வது நபரின் சகோதரர் முகமது அப்துர் ரஹ்மான் வாஹீத் (ஆதார் எண். 4639 8469 3668)-2 ஆகிய நாங்கள் இருவரும் சேர்ந்து எழுதிக் கொடுத்த குத்தகை ஆவணம்.,

N. Shekith
N. Abdul Wahid

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என்னவென்றால் 21.02.2022ம் தேதியில் எழுதி திருநெல்வேலி 2 நிர் இணைச்சார் பதிவாளர் அலுவலகத்தில் 1 புத்தகம் 790/2022ம் நம்பராகப் பதிவு செய்யப்பட்டுள்ள கிரையப் பத்திரத்தின் மூலம் இதன் தபசில் கண்ட சொத்து நமக்கு பொதுவாகவும் ஜாயிண்டாகவும் பாத்தியப்பட்டு நாரணம்மாள்புரம் பகுதி 1 கிராம பட்டா எண்.1465படியும் நமக்கு பாத்தியப்பட்டு ஆண்டனுபவித்து வருகிற இதன் தபசில் கண்ட சொத்தில் நாளது தேதி வரை சர்க்கார் தீர்வை செலுத்தி சர்வ சுதந்திரமாக சகல உரிமைகளுடன் எந்தவித வில்லங்க விவகாரமின்றி ஆண்டனுபவித்து வரும் சொத்துக்கள் ஆகும். இதன் தபசில் கண்ட சொத்துக்களுக்கு தாங்கள் அரசு அனுமதி பெற்று கனிமம் சார்ந்த தொழில் செய்வதற்கு குத்தகைக்கு வேண்டும் என கேட்டதை ஏற்று இன்றுமுதல் வருடம் ஒன்றுக்கு ரூபாய்.10,000/- ரூபாய்.பத்தாயிரம் குத்தகை தொகையாக நிர்ணயித்து 11 (பதினோறு) ஆண்டுகளுக்கு குத்தகைக்கு விட நாங்கள் சம்மதிகிறோம். இன்று முதல் இதன் தபசில்

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N. Abdul Wahid

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பதிவு அலுவலர்

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கண்ட சொத்துக்களின் சுவாதீனத்தை பெற்றுள்ள தாங்கள் தொழிலுக்கு தேவையான மாற்றங்களை தபசில் கண்ட சொத்துக்களில் தங்கள் செய்த பொறுப்பில் செய்து கொள்ள வேண்டியது.

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நிபந்தனைகள் விபரம்

1. 01.03.2023 தேதி முதல் 28.02.2034 தேதி வரை 11 வருட காலத்திற்கு தபசில் இடத்தில் கனிமம் சார்ந்த தொழில் நடத்தி வரவேண்டியது.
2. கனிமம் சார்ந்த தொழில் செய்வதற்கு குத்தகையாக வருடம் ஒன்றுக்கு ரூபாய்.10,000/- வீதம் ஒவ்வொரு ஆங்கில வருடம் தேதிக்குள் கொடுத்து விட வேண்டியது. இந்த குத்தகை வகைக்காக வட்டியின்றி ரூபாய்.10,000./- ரூபாய். பத்தாயிரம் டெப்பாசிட்டாக செலுத்த வேண்டியது.
3. தபசில் இடத்தில் கனிமம் சார்ந்த தொழில் இயங்கும் காலம் வரை அதற்குரிய மின்கட்டணம் மற்றும் தண்ணீர் கட்டணம் இவைகளை நீங்களே கட்டிக் கொள்ளவேண்டியது.

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4. தபசில் இடத்தை நல்ல முறையில் பாரமரித்து வரவேண்டும்.
5. தபசில் இடத்தில் ஷை கனிமம் சார்ந்த தொழில் தவிர வேறு எதற்கும் உபயோகப்படுத்தவோ, உள்வாடகைக்கு விடவோ உரிமை கிடையாது.
6. ஷை குத்தகை காலம் முடிந்து செல்லும் காலத்தில் எவ்வித சேதாரமும் செய்யாமல் தபசில் இடத்தை ஒப்படைக்க வேண்டியது.
7. தபசில் இடத்திற்கு நிலதீர்வை, கட்டிடத்திற்குரிய தீர்வை இவைகளை நீங்களே செலுத்தி கொள்ள வேண்டியது.
8. குத்தகை காலம் முடியும் போது ஷை டிப்பாசிட் தொகை ரூபாய்.10,000/- ரூபாய்.பத்தாயிரம் வட்டியின்றி பெற்றுக் கொள்ளவேண்டியது.
9. குத்தகை காலம் முடிந்தவுடன் அவசியம் ஏற்படின் அல்லது தேவை ஏற்படின் இருவரும் சம்மதத்தின் பேரில் குத்தகையை நீட்டித்து கொள்ள வேண்டியது.
10. தபசில் சொத்துக்களில் உள்ள கட்டிடங்களில் இணைக்கப்பட்டுள்ள மின் இணைப்பு தொடர்பாக இனி வருங்காலங்களில் கூடுதல் வைப்பு தொகை ஏதும் செலுத்த வேண்டியது ஏற்பட்டால்

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அதனை நீங்களே தன் சொந்த பொறுப்பில் செலுத்தி கொள்ளவேண்டியது. குத்தகை காலம் முடிந்த பிறகு மேற்படி மின் இணைப்பு கூடுதல் வைப்பு தொகையினை நாங்கள் மின்சார வாரியத்திடமிருந்து ஷை தொகையை திரும்ப பெற்று தங்களுக்கு திரும்ப செலுத்தி விடுவோம்.

11. மின் இணைப்பு, வண்டி வாகனங்கள் போன்றவற்றை நீங்களே ஏற்பாடு செய்து கொண்டு அரசு அலுவலகங்களில் உங்கள் பெயரிலோ உங்கள் நிறுவனத்தின் பெயரிலோ நீங்களே கையொப்பம் செய்து கொண்டு தபசில் கண்ட சொத்துக்களில் தொழிலுக்கு தேவையான கட்டிடங்களை அரசு அனுமதியுடன் அமைத்து கொள்ளவேண்டியது. இதன் தபசில் கண்ட சொத்துக்களில் அரசின் சட்டத் திட்டங்களுக்கு பாதகமாக நீங்களே உங்களது வாரிசுகளோ செய்யக்கூடாது, கனிமவளம் எடுக்கும் போது அரசின் சட்டம் மற்றும் விதிமுறைகளுக்கு உட்பட்டு மட்டுமே தபசில் கண்ட சொத்துக்களின் நிலத்தில் இருந்து கனிம வளங்களை எடுக்க வேண்டும்.

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12. இதன் தபசில் கண்ட சொத்துக்களின் குத்தகை காலம் முடியும் தருணத்தில் குத்தகையை நீடித்து கொள்ள நாம் இருதரப்பினரும் விரும்பாத நிலையில் மீண்டும் எனது இடத்தில் இன்றைய நிலையிலோ கட்டிடத்தோடோ சுவாதீனத்தை வழங்கிவிட வேண்டியது. குத்தகை நீட்டிப்பு செய்யும் பட்சத்தில் அதற்கு தனியாக ஒரு ஆவணம் எழுதி அதனை பதிவு செய்து கொள்ள வேண்டும், இந்தபடி எனது முழு மன நிறைவுடன் எழுதிக் கொடுத்த குத்தகை பத்திரம் படிக்க கேட்டேன் சரி.

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தபசில்

திருநெல்வேலி ரிடி, திருநெல்வேலி ஜாயிண்ட் 2ம் நம்பர் சப்டி சரகம், திருநெல்வேலி வட்டம், நாரணம்மாள்புரம் பகுதி -1 கிராமத்தில் அடங்கியுள்ள அயன் புஞ்சை சர்வே 812 ஹெக்டேர் 4.84.00 இதில் பிரிவின்றி 3ல் 2 பங்கு மட்டும் தபசில் விபரம் சரி.

N. Shalith.

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தபசில் சொத்து நாரணம்மாள்புரம் பகுதி 1 கிராம எல்கைகுள்பட்டது.

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N. Abdul Wahid

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Mobile: 94431 84238, 89036 74238

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R/2 எண் இணை சார்பதிவாளர் திருநெல்வேலி/புத்தகம் 1/759/2023

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1899ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 42வது பிரிவின் கீழான சான்று

[illegible]ம் ஆண்டு வரிசை எண் 172

திருநெல்வேலி மாவட்டம் திருநெல்வேலி வட்டம் சங்கர்நகர் 627 357 முத்துநகர் கதவு எண் 1/19 திருநெல்வேலி தமிழ்நாடு இந்தியா 627357-ல் வசிக்கும் திரு முகமது சலீம் பாதுஷா என்பவரிடமிருந்து ₹ 1,000/- ரூபாய் ஆயிரம் மட்டும் இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்

சார்பதிவாளர் திருநெல்வேலி
நாள் 28.02.2023

2 எண் இணை சார்பதிவாளர்சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு 41ன் படி ஆட்சியர்

2023 ஆம் ஆண்டு பிப்ரவரி மாதம் 28ம் தேதி பி.ப 04.15 மணியளவில் 2 எண் இணை சார்பதிவாளர் திருநெல்வேலி சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ₹ 1,385/- செலுத்தியவர்

இடது பெருவிரல்	கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி	
எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல்	'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது ஒப்பீட்டு எண் UKC 0894551d7af34d6ad9457fb2a18c7342bdec09 (Details from UIDAI Mohideen Sheik Shahith S/O: Navaskhan, 13-09-1998, xxxxxxxx3754)	
எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல்	'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது ஒப்பீட்டு எண் UKC 646916084b046a1bc14aaf998df6306e7ac2d2	

16

200

R/2 எண் இணை சார்பதிவாளர் திருநெல்வேலி/புத்தகம் 1/759/2023

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

	(Details from UIDAI : Mohammed Abdur Rahman Wahid S/O: Navaskhan, 13-09-1998, xxxxxxxx3568)	
எழுதி வாங்கியதாக ஒப்புக் கொண்டவர் இடது பெருவிரல்	S.P. N 'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது ஒப்பீட்டு எண் UKC 044337b1d8c22f9a8f4bd0a742ce6b7127d298 (Details from UIDAI : Mohammed Saleem Badhusha S/O Navaskhan, 19-09-1994, xxxxxxxx5349)	

2023 ஆம் ஆண்டு பிப்ரவரி மாதம் 28ம் நாள்

முத்துமுருகன் மு
சார்பதிவாளர்
2 எண் இணை சார்பதிவாளர் திருநெல்வேலி

R/2 எண் இணை சார்பதிவாளர் திருநெல்வேலி/புத்தகம்-1/759/2023 எண்ணாகப் பதிவு செய்யப்பட்டது

முத்துமுருகன் மு
சார்பதிவாளர்

நாள் 28/02/2023
2 எண் இணை சார்பதிவாளர் திருநெல்வேலி

759 ... ஆவணம்
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... சிலுவலர்

S.P. N 201

இந்திய அரசாங்கம்
Government of India

Mohammed Saleem Badhusha

1412 5349

ஆதனின் அதிகாரம்

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining

1/13 MUTHUNAGAR
SANKAR NAGAR POST
Sankarnagar Sankarnagar
Tirunelveli Tamil Nadu
627357

3453 1412 5349

S.N

N. Shahith
N. Abdul Wahid

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S.N

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

இந்திய அரசாங்கம்
Government of India
Mohamed Sheik Shahith

7281 3754

...விதனின் அதிகாரம்

Unique Identification Authority
1/19 MUTHU NAGAR
SANKARNAGAR
Sankarnagar Sankarnagar
Tirunelveli Tamil Nadu
627357

4501 7281 3754

S.P.N

N. Shahith
N. Abdul Wahid

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S.P.N

இந்திய அரசாங்கம்
Government of India

Mohammed Abdur Rahman Wahid

4639 8469 3668

சுவிதனின் அதிகாரம்

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Assistant Director
of Geology & Mining
Trunelveli Dist

Unique Identification Authority of India

SANKARNAGAR
Sankarnagar Sankarnagar
Trunelveli Tamil Nadu
627357

4639 8469 3668

1947
1800 300 1947

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Sl.N

N. Shahith
N. Abdul Wahid

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பதிவு அலுவலர்

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Sl.N

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of Geology & Mining
Tirunelveli Dist

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A. Bala murugan.

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भारत सरकार
GOVERNMENT OF INDIA

DOB 18.04.1954

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Geology & Mining
Tirunelveli Dist

S.C. 24

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Sl.N

N. Shalith

N. Abdul Wahid

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Sl.N 206

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Assistant Director
of Geology & Mining
Tirunelveli Dist

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருநெல்வேலி வட்டம் :
திருநெல்வேலி
வருவாய் கிராமம் : நாரணம்மாள்புரம் பகுதி-
1 பட்டா எண் : 1465

உரிமையாளர்கள் பெயர்

1. நவாஸ்கான் மகன் முகமது சலீம் பாதுஷா -
2. நவாஸ்கான் மகன் முகமது அப்துர் ரஹ்மான் வாஜித் -
3. நவாஸ்கான் மகன் முகைதீன் ஷேக் சாகித் -

பல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
812	-	4 - 84 00	3.00	--	--	--	--	2022/0103 /29/303372---- -- 28-05-2022
		4 - 84.00	3.00					

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 29/01/025 /01465/10566 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 28-02-2023 அன்று 02:52:36 PM நேரத்தில் அச்சடிக்கப்பட்டது
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

N. Shahid
N. Abdul Wahid

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28-02-20

₹.20000

THOUSAND RUPEES

Rs.20000

INDIA

தமிழ்நாடு TAMILNADU

08 FEB 2022

MINING PLAN APPROVED By Assistant Director of Geology & Mining Tirunelveli Dist

P. ஜோசப் P.

முகமது சலீம் பாதுஷா
சங்கர் நகர்

ரூபாய்.24,00,000/-க்கு கிரையம்

2022ம் வருடம் பிப்ரவரி மாதம் 21ம் தேதி திருநெல்வேலி மாவட்டம், திருநெல்வேலி வட்டம், சங்கர்நகர் 627 357, முத்துநகர், கதவு எண். 1/19ல் குடியிருந்து வரும் திரு.நவாஸ்கான் அவர்கள் குமாரர் முகமது சலீம் பாதுஷா (ஆதார் எண்.345314125349) (Pan No.BVSPB4680B)-1 திருநெல்வேலி மாவட்டம்.

கிரையம் வாங்குபவர்கள்

கிரையம் கொடுப்பவர்கள்

208

ANNEXURE VIII

MINING PLAN APPROVED
By
Assistant Director
of Geology & Mining
Tirunelveli Dist

आधार

இந்திய அரசாங்கம்
Government of India

இந்திய தனிப்பட்ட அடையாள ஆணைய அமைப்பு
Unique Identification Authority of India

பதிவேட்டு எண்/ Enrolment No.: 2192/40348/02235

To
முகமது சலீம் பதுஷா
Mohammed Saleem Bachusha
S/O: Navaskhan
1/19
MUTHUNAGAR
SANKAR NAGAR POST
Sankarnagar
Tirunelveli Tamil Nadu - 627357
9600863322

உங்கள் ஆதார் எண் / Your Aadhaar No. :
3453 1412 5349
VID : 9134 9633 3125 1148

எனது ஆதார், எனது அடையாளம்

இந்திய அரசாங்கம்
Government of India

முகமது சலீம் பதுஷா
Mohammed Saleem Bachusha
பிறந்த நாள்/DOB: 19/09/1994
ஆண்/ MALE

Issue Date: 08-10-2013

3453 1412 5349
VID : 9134 9633 3125 1148

எனது ஆதார், எனது அடையாளம்

Government of India

AADHAAR

தகவல்

- ஆதார் அடையாளத்திற்கான சான்று குடியுரிமைக்கு அல்ல
- பாதுகாப்பான QR குறியீடு/ ஆஃலைன் XML/ ஆன்லைன் சரிபார்த்தல் பயன்படுத்தி அடையாளத்தை சரிபார்க்கவும்
- இது எலக்ட்ரானிக் செயல்முறை மூலம் தயாரிக்கப்பட்ட கடிதமாகும்.

INFORMATION

- Aadhaar is a proof of identity, not of citizenship
- Verify identity using Secure QR Code/ Offline XML/ Online Authentication.
- This is electronically generated letter

- ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும்
- பல்வேறு அரசு மற்றும் அரசு சாரா சேவைகளை எளிதில் பெற ஆதார் உதவுகிறது
- உங்கள் மொபைல் எண் மற்றும் மின்னஞ்சல் ஐடியை ஆதாரில் புதுப்பிக்கவும்
- mAadhaar செயலியைப் பயன்படுத்தி உங்கள் ஸ்மார்ட் போனில் ஆதாரை எடுத்துச் செல்லுங்கள்

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- Aadhaar helps you avail various Government and non-Government services easily.
- Keep your mobile number & email ID updated in Aadhaar.
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Unique Identification Authority of India

முகவரி:
S/O: நவாஸ்கான், 1/29, முத்துநகர், சங்கர் நகர் அஞ்சல், சங்கர்நகர், திருநெல்வேலி, தமிழ் நாடு - 627357

Address:
S/O: Navaskhan, 1/19, MUTHUNAGAR, SANKAR NAGAR POST, Sankarnagar, Tirunelveli, Tamil Nadu - 627357

Download Date: 14/04/2022

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VID : 9134 9633 3125 1148

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SP.2 209

ANNEXURE-7

Shrient Analytical and Research Labs Pvt. Ltd

416/15, Dhargas Road, West Tambaram, Chennai- 600045
Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/960

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-960	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	06.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	61.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45.

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

*****END OF THE REPORT*****

Please Contact:
For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Terms and conditions:

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Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/961

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-961	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	06.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

*****END OF THE REPORT*****

Please Contact:
For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Terms and conditions:

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Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
www.shrientanalytical.com

TEST REPORT

Report No.	SARL/24/962

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-962	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	07.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	58.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
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TEST REPORT

Report No.	SARL/24/963

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-963	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	07.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	36.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	16.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/964

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-964	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	08.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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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/24/965

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-965	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	08.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/966

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-966	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	09.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.7	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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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/967

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-967	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	09.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/968

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-968	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	10.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/969

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-969	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	10.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/970

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-970	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	11.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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/24/971

Report Date.	17.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-971	Sample Received on	12.02.2024
Sample Collected by	LABORATORY	Test Commenced on	12.02.2024
Sample Collected on	11.02.2024	Test Completed on	17.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Please Contact:
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TEST REPORT

Report No.	SARL/24/996

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-996	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	13.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/997

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-997	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	13.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/998

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-998	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	14.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/999

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-999	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	14.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.8	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
Technical Manager

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TEST REPORT

Report No.	SARL/24/1000

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1000	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	15.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1001

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1001	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	15.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1002

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1002	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	16.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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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/24/1003

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1003	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	16.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.4	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1004

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1004	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	17.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	60.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Please Contact:
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TEST REPORT

Report No.	SARL/24/1005

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1005	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	17.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1006

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1006	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	18.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1007

Report Date.	24.02.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1007	Sample Received on	19.02.2024
Sample Collected by	LABORATORY	Test Commenced on	19.02.2024
Sample Collected on	18.02.2024	Test Completed on	24.02.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	39.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1032

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1032	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	20.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1033

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1033	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	20.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	36.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	16.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.2	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/24/1034

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1034	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	21.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	58.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1035

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1035	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	21.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	40.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1036

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1036	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	22.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1037

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1037	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	22.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1038

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1038	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	23.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1039

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1039	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	23.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1040

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1040	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	24.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1041

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1041	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	24.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1042

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1042	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	25.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1043

Report Date.	02.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1043	Sample Received on	26.02.2024
Sample Collected by	LABORATORY	Test Commenced on	26.02.2024
Sample Collected on	23.02.2024	Test Completed on	02.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1068

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1068	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	27.02.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1069

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1069	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	27.02.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1070

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1070	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	28.02.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1071

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1071	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	28.02.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1072

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1072	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	29.02.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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/24/1073

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1073	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	29.02.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1074

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1074	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	01.03.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1075

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1075	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	01.03.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	6.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.1	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/24/1076

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1076	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	02.03.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	60.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1077

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1077	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	02.03.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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/24/1078

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1078	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	03.03.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1079

Report Date.	11.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1079	Sample Received on	04.03.2024
Sample Collected by	LABORATORY	Test Commenced on	04.03.2024
Sample Collected on	03.03.2024	Test Completed on	11.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	37.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	17.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.4	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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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Please Contact:
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TEST REPORT

Report No.	SARL/24/1104

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1104	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	05.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	66.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1105

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1105	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	05.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	39.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	18.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.7	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1106

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1106	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	06.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	62.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1107

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1107	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	06.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1108

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1108	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	07.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1109

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1109	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	07.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	54.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1110

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1110	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	08.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1111

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1111	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	08.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1112

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1112	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	09.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1113

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1113	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	09.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1114

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1114	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	10.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1115

Report Date.	16.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1115	Sample Received on	11.03.2024
Sample Collected by	LABORATORY	Test Commenced on	11.03.2024
Sample Collected on	10.03.2024	Test Completed on	16.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	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	43.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	µg/m^3	19.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	µg/m^3	3.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	µg/m^3	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1140

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1140	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	12.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1141

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1141	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	12.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/24/1142

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1142	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	13.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/24/1143

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1143	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	13.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1144

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1144	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	14.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1145

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1145	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	14.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	8.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1146

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1146	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	15.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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/24/1147

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1147	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	15.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.1	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/24/1148

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1148	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	16.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1149

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1149	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	16.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	37.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	17.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1150

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1150	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	17.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1151

Report Date.	23.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1151	Sample Received on	18.03.2024
Sample Collected by	LABORATORY	Test Commenced on	18.03.2024
Sample Collected on	17.03.2024	Test Completed on	23.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1176

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1176	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	19.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	68.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1177

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1177	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	19.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1178

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1178	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	20.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	64.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1179

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1179	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	20.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	38.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	17.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.6	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1180

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1180	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	21.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1181

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1181	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	21.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	8.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1182

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1182	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	22.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1183

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1183	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	22.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	65.4	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	30.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	9.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1184

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1184	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	23.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1185

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1185	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	23.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	43.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1186

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1186	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	24.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1187

Report Date.	30.03.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1187	Sample Received on	25.03.2024
Sample Collected by	LABORATORY	Test Commenced on	25.03.2024
Sample Collected on	24.03.2024	Test Completed on	30.03.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1212

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1212	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	26.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1213

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1213	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	26.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1214

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1214	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	27.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1215

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1215	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	27.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1216

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1216	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	28.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1217

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1217	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	28.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	61.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	8.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1218

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1218	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	29.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	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/24/1219

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1219	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	29.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1220

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1220	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	30.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	61.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.4	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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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1221

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1221	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	30.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1222

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1222	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	31.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	64.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1223

Report Date.	06.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1223	Sample Received on	01.04.2024
Sample Collected by	LABORATORY	Test Commenced on	01.04.2024
Sample Collected on	31.03.2024	Test Completed on	06.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1248

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1248	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	02.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	67.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1249

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1249	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	02.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1250

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1250	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	03.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	63.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1251

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1251	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	03.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1252

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1252	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	04.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.0	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1253

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1253	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	04.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	60.4	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	8.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1254

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1254	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	05.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1255

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1255	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	05.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	67.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	31.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	10.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1256

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1256	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	06.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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/24/1257

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1257	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	06.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1258

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1258	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	07.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1259

Report Date.	15.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1259	Sample Received on	08.04.2024
Sample Collected by	LABORATORY	Test Commenced on	08.04.2024
Sample Collected on	07.04.2024	Test Completed on	15.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1284

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1284	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	09.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1285

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1285	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	09.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	53.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1286

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1286	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	10.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Please Contact:
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TEST REPORT

Report No.	SARL/24/1287

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1287	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	10.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1288

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1288	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	11.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.8	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1289

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1289	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	11.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	63.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	9.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1290

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1290	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	12.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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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/24/1291

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1291	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	12.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	64.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	30.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	9.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	12.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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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/24/1292

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1292	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	13.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1293

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1293	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	13.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1294

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1294	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	14.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	65.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	9.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1295

Report Date.	20.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1295	Sample Received on	15.04.2024
Sample Collected by	LABORATORY	Test Commenced on	15.04.2024
Sample Collected on	15.04.2024	Test Completed on	20.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	42.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

.

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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Please Contact:
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Phone Number +91 82208 36377 Email: - **info@shrientanalytical.com**
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TEST REPORT

Report No.	SARL/24/1320

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1320	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	16.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	59.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1321

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1321	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	16.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.4	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1322

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1322	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	17.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	57.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.6	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1323

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1323	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	17.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.1	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.9	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.8	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1324

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1324	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	18.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	52.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.0	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.0	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1325

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1325	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	18.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	58.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	8.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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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/24/1326

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1326	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	19.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
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TEST REPORT

Report No.	SARL/24/1327

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1327	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	19.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	56.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	26.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	7.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	10.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1328

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1328	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	20.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	45.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.9	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1329

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1329	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	20.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	44.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	20.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1330

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1330	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	21.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	50.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1331

Report Date.	27.04.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1331	Sample Received on	22.04.2024
Sample Collected by	LABORATORY	Test Commenced on	22.04.2024
Sample Collected on	21.04.2024	Test Completed on	27.04.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1356

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1356	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	23.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	24.6	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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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Technical Manager

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TEST REPORT

Report No.	SARL/24/1357

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1357	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	23.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	55.1	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	25.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.2	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.9	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1358

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A5-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1358	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	24.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	46.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.3	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.6	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Technical Manager

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TEST REPORT

Report No.	SARL/24/1359

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A6-ALADIPATTI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1359	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	24.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	51.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	23.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.8	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.2	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1360

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1360	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	25.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	47.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	21.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.4	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	6.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1361

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1361	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	25.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	66.3	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	31.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	10.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	12.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1362

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A3-ALANGARAPERI VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1362	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	26.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	49.9	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.8	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	3.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.4	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
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Technical Manager

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TEST REPORT

Report No.	SARL/24/1363

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A4-VADAKKU THALAIYUTHU VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1363	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	26.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	62.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	29.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	9.1	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	11.7	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1364

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1364	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	27.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	62.7	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	27.5	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.5	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1365

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1365	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	27.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	41.5	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	19.2	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.3	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	7.1	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1366

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A1-PROPOSED MINE LEASE AREA
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1366	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	65.2	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	28.7	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	4.7	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	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/24/1367

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	AMBIENT AIR QUALITY
Sampling Procedure	IS – 5182 (Part – 14: 2000 & Part – V: Reaffirmed - 2003), CPCB Guide lines

Sample Location	A2-RAJVIRAMPURAM VILLAGE
Positioned height of Sampler	1.5 M above Ground Level

Customer Reference	By Mail	Sampling Duration	24 hrs
Sample Reference No	SARL/A/CHE-1367	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Temperature	34.5°C	Relative Humidity	62%
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results	*Limits
1	Particulate Matter less than 10micron size (PM_{10})	IS:5182: Part 23:2006	$\mu g/m^3$	48.6	100
2	Particulate Matter less than 2.5micron size ($PM_{2.5}$)	IS 5182 (Part 24):2019	$\mu g/m^3$	22.4	60
3	Sulphur dioxide (SO_2)	IS:5182: Part 02:2001	$\mu g/m^3$	5.5	80
4	Nitrogen Dioxide (NO_2)	IS:5182: Part 06:2006	$\mu g/m^3$	8.3	80
5	Carbon monoxide (CO)	SARL/IOP/013 (Issue No:01, Issue Date – 01.03.2023)	mg/m^3	BDL (D.L – 1.1)	-

Remarks: Limits: *National Ambient air quality standards from CPCB. BDL- Below detectable limit. DL –Detectable limit

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TEST REPORT

Report No.	SARL/24/1382

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	NOISE LEVEL DATA

Customer Reference	As per work order	Sampling Method	SARL/IOP/023
Sample Reference No	SARL/NO/CHE-1382	Date of Monitoring	27.04.2024 / 28.04.2024
Sample Collected by	LABORATORY		

Time in hrs	N1	N2	N3	N4	N5	N6
06.00	39.9	36.5	38.2	38.7	36.4	37.2
07.00	42.0	43.9	40.8	46.6	38.7	44.5
08.00	44.2	47.9	43.7	45.4	44.9	48.6
09.00	45.7	49.3	45.6	47.0	48.5	49.9
10.00	47.0	46.6	46.8	39.3	50.3	47.2
11.00	43.3	49.6	45.7	42.6	47.5	50.2
12.00	45.2	43.8	46.6	43.7	46.6	44.4
13.00	43.7	44.6	47.2	41.9	46.0	45.2
14.00	43.9	47.6	45.3	44.8	49.4	48.2
15.00	42.3	46.7	42.6	41.0	49.7	47.3
16.00	43.7	46.5	45.7	43.2	49.0	46.7
17.00	41.3	41.6	41.9	44.7	48.0	42.2
18.00	40.0	39.5	42.3	43.6	45.4	40.3
19.00	37.8	38.8	43.7	41.2	43.9	39.4
20.00	37.2	38.1	39.9	39.2	42.2	38.7
21.00	39.3	40.5	41.5	37.7	41.7	41.7
22.00	38.5	36.7	39.6	35.8	38.2	37.3
23.00	38.9	35.3	38.7	36.3	37.6	35.9
24.00	35.5	37.5	37.2	37.0	36.7	38.4
01.00	36.0	35.9	37.6	35.9	35.9	36.5
02.00	34.7	36.7	37.0	37.3	37.7	37.3
03.00	35.3	38.0	37.7	36.4	38.3	38.6
04.00	36.0	35.9	38.5	36.6	38.8	36.5
05.00	37.8	39.6	37.5	37.4	38.3	40.2

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TEST REPORT

Report No.	SARL/24/1382

Report Date.	04.05.2024

	N1	N2	N3	N4	N5	N6
DAY EQUIVALENT	43.1	45.5	44.3	43.4	46.9	46.1
NIGHT EQUIVALENT	36.8	37.2	38.1	36.6	37.8	37.8
DAY & NIGHT EQUIVALENT	41.8	44.0	43.0	42.0	45.4	44.6

Remarks:

LOCATIONS:

N1-PROPOSED MINE LEASE AREA
N2-RAJVIRAMPURAM VILLAGE
N3-ALANGARAPERI VILLAGE
N4-VADAKKU THALAIYUTHU VILLAGE
N5- PATHINALAMPERI VILLAGE
N6-ALADIPATTI VILLAGE

For Shrient Analytical and Research Labs Pvt. Ltd

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TEST REPORT

Report No.	SARL/24/1376

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	SOIL
Sample Mark	S1-PROPOSED MINE LEASE AREA

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-1376	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	6.67
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	312.8
3	Dry matter content	IS 15106: 2002	%	98.94
4	Water Content	IS 15106: 2002	%	1.06
5	Organic Matter	IS 2720: Part 22: 1972	%	0.94
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	275
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	45.95
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	45.09
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	8.97
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.58
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	905
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	775
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	3.5

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/24/1377

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	SOIL
Sample Mark	S2-RAJVIRAMPURAM VILLAGE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-1377	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.55
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	52.47
3	Dry matter content	IS 15106: 2002	%	94.32
4	Water Content	IS 15106: 2002	%	5.68
5	Organic Matter	IS 2720: Part 22: 1972	%	1.72
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	475
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	42.06
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	38.37
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	19.57
9	Phosphorus as P	IS 10158: 1982	mg/kg	2.66
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	434
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	642
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	%	25.4
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.6

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1378

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	SOIL
Sample Mark	S3-ALANGARAPERI VILLAGE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-1378	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.24
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	76.54
3	Dry matter content	IS 15106: 2002	%	97.93
4	Water Content	IS 15106: 2002	%	2.07
5	Organic Matter	IS 2720: Part 22: 1972	%	1.62
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	453
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	28.41
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	33.08
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	38.51
9	Phosphorus as P	IS 10158: 1982	mg/kg	2.13
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	373
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	507
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	%	27.1
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.1

BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/24/1379

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	SOIL
Sample Mark	S4-VADAKKU THALAIYUTHU VILLAGE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-1379	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.43
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	110.4
3	Dry matter content	IS 15106: 2002	%	95.41
4	Water Content	IS 15106: 2002	%	4.59
5	Organic Matter	IS 2720: Part 22: 1972	%	2.14
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	635
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SILT LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	27.22
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	53.54
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	19.24
9	Phosphorus as P	IS 10158: 1982	mg/kg	3.21
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	264
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	527
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	%	22.2
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.7

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/24/1381

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	SOIL
Sample Mark	S5- PATHINALAMPERI VILLAGE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-1381	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.96
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	110.6
3	Dry matter content	IS 15106: 2002	%	98.44
4	Water Content	IS 15106: 2002	%	1.56
5	Organic Matter	IS 2720: Part 22: 1972	%	1.21
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	292
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	SANDY CLAY LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	44.38
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	27.65
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	27.97
9	Phosphorus as P	IS 10158: 1982	mg/kg	0.97
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	388
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	632
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	%	20.9
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.5

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/24/1380

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	SOIL
Sample Mark	S6-ALADIPATTI VILLAGE

Customer Reference	By Mail	Sampling Procedure	-
Sample Reference No	SARL/SO/CHE-1380	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

S. No.	Parameters	Protocol	Unit	Results
1	pH at 25 °C	IS 2720: Part 26: 1987	-	7.24
2	Electrical Conductivity	IS 14767: 2000	µmhos/cm	50.13
3	Dry matter content	IS 15106: 2002	%	92.81
4	Water Content	IS 15106: 2002	%	7.19
5	Organic Matter	IS 2720: Part 22: 1972	%	0.76
6	Nitrogen and Nitrogenous compounds	IS 14684: 1999	mg/kg	163
7	Soil Texture	Methods Manual - Soil testing in India - P. No-67: 2011	%	CLAY LOAM
8	Grain Size Distribution i. Sand	Methods Manual - Soil testing in India - P. No-67: 2011	%	29.46
	ii. Silt	Methods Manual - Soil testing in India - P. No-67: 2011	%	40.68
	iii. Clay	Methods Manual - Soil testing in India - P. No-67: 2011	%	29.86
9	Phosphorus as P	IS 10158: 1982	mg/kg	1.56
10	Sodium as Na	USEPA 3050 B: 1996	mg/kg	512
11	Potassium as K	USEPA 3050 B: 1996	mg/kg	723
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	%	22.7
14	Water holding capacity	Methods Manual - Soil testing in India - P. No-76: 2011	Inches/foot	3.2

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/2024/1368	Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	SW1-Thamiraparani UP Stream (NEAR NARANAMMALPURAM VILLAGE)

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1368	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0
3	pH at 25 °C	APHA 24th Edition 4500 – H+ B: 2023	-	7.66
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	249.9
B.	**Chemical parameters**			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	150
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	72.9
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	18.2
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	8.1
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	45.5
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	33.7
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	76.8
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	26.4

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TEST REPORT

Report No.	SARL/2024/1368

Report Date.	04.05.2024

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	27.4
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.07
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	1.26
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.18
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 27ºc	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: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd * Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/2024/1369

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	SW2-Thamiraparani Down Stream (NEAR PAALAAMADAI VILLAGE)

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1369	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result
A.				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.51
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	260.4
B.	**Chemical parameters**			
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	156
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	81.2
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	19.0
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	8.08
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	47.5
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	33.7
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	76.8
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	25.4

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TEST REPORT

Report No.	SARL/2024/1369	Report Date.	04.05.2024

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	34.7
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.06
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	2.11
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.32
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	6.4

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd. Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/2024/1370	Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	W1-PROPOSED MINE LEASE AREA

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1370	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.15	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1624	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	975	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	453	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	102	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	47.8	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	254	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	199	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	452	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	249	1000

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TEST REPORT

Report No.	SARL/2024/1370

Report Date.	04.05.2024

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	201	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.09	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.25	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.32	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

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Shrient Analytical & Research Labs Pvt. Ltd * Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/2024/1371

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	W2-RAJVIRAMPURAM VILLAGE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1371	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	6.75	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1720	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	1032	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	560	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	114	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	65.8	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	286	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	274	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	316	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	269	1000

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TEST REPORT

Report No.	SARL/2024/1371

Report Date.	04.05.2024

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	290	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	4.56	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.51	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/2024/1372

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	W3-ALANGARAPERI VILLAGE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1372	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.24	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	144.1	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	86.0	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	51.5	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	14.3	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	3.80	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	35.6	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	15.8	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	40.4	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	17.6	1000

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TEST REPORT

Report No.	SARL/2024/1372

Report Date.	04.05.2024

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	20.1	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	BDL (D.L - 0.01)	0.3
16	Nitrate (as NO3)	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	BDL (D.L - 0.1)	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/2024/1373

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	W4-VADAKKU THALAIYUTHU VILLAGE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1373	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.22	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1335	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	802	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	497	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	87.1	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	67.0	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	218	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	279	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	333	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	232	1000

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TEST REPORT

Report No.	SARL/2024/1373

Report Date.	04.05.2024

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	190	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.08	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.56	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.49	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/2024/1374

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	W6-ALADIPATTI VILLAGE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1374	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.54	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1597	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	960	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	446	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	97.6	200
8	Magnesium (as Mg)	IS 3025 (Part 46): 1994	mg/L	48.5	100
9	Calcium Hardness (as CaCO3)	APHA 24th Edition 3500 Ca B: 2023	mg/L	244	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	202	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	439	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	242	1000

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TEST REPORT

Report No.	SARL/2024/1374

Report Date.	04.05.2024

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	198	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.06	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.72	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

Verified

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Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

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TEST REPORT

Report No.	SARL/2024/1375

Report Date.	04.05.2024

Customer Name & Address	Thiru. K. Mohammed Saleem Badhusha, 1.95.00 Ha, Naranammalpuram Part -1, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu.
Sample Description	WATER
Sample Mark	W6-ALADIPATTI VILLAGE

Customer Reference	By Mail	Sampling Procedure	IS 17614: Part 14: 2021
Sample Reference No	SARL/W/CHE-1375	Sample Received on	29.04.2024
Sample Collected by	LABORATORY	Test Commenced on	29.04.2024
Sample Collected on	28.04.2024	Test Completed on	04.05.2024
Sample Condition	Fit for Analysis		

Sl. No.	Parameters	Protocol	Unit	Result	*Limits
					Permissible
A.	**Physical parameters**				
1	Odour	IS 3025 (Part 5): 2018	-	Agreeable	Agreeable
2	Turbidity	APHA 24th Edition 2130 B: 2023	NTU	<1.0	5.0
3	pH at 25 ˚C	APHA 24th Edition 4500 – H+ B: 2023	-	7.68	6.50-8.50
4	Electrical Conductivity	APHA 24th Edition 2510 B: 2023	(µS/cm)	1421	-
B.	**Chemical parameters**				
5	Total Dissolved Solids	APHA 24th Edition 2540-C: 2023	mg/L	855	2000
6	Total hardness (as CaCO3)	APHA 24th Edition 2340 C: 2023	mg/L	283	600
7	Calcium (as Ca)	IS 3025 (Part 40): 1991	mg/L	78.4	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	196	-
10	Magnesium Hardness (as CaCO3)	APHA 24th Edition 3500 Mg B: 2023	mg/L	87.1	-
11	Total alkalinity (as CaCO3)	APHA 24th Edition 2320 B: 2023	mg/L	356	600
12	Chloride (as Cl)	APHA 24th Edition 4500 Cl- B: 2023	mg/L	244	1000

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TEST REPORT

Report No.	SARL/2024/1375

Report Date.	04.05.2024

Sl. No.	Parameters	Protocol	Unit	Result	*Limits Permissible
13	Free Residual chlorine	APHA 24th Edition 4500 Cl- B: 2023	mg/L	BDL (D.L - 0.2)	1.0
14	Sulphate as (SO42-)	APHA 24th Edition 4500 SO42- E: 2023	mg/L	209	400
15	Iron (as Fe)	APHA 24th Edition 3500 Fe B: 2023	mg/L	0.04	0.3
16	Nitrate (as NO3)	IS 3025 (Part 34): 1988	mg/L	3.59	45
17	Fluoride (as F)	APHA 24th Edition 4500 F- D: 2023	mg/L	0.57	1.5
18	Manganese (as Mn)	APHA 24th Edition 3500 Mn B: 2023	mg/L	BDL (D.L - 0.05)	0.3

Remarks: *Drinking Water Specifications as per IS – 10500:2012. BDL – Below Detectable limit (DL - Detectable limit).

For Shrient Analytical and Research Labs Pvt. Ltd

Verified

Shrient Analytical & Research Labs Pvt. Ltd * Chennai - 45

Authorized Signatory
J. GNANAPRAKASAM
Technical Manager

*****END OF THE REPORT*****

Please Contact:
For any Technical Issues & Complaints: vimalnath@shrientanalytical.com

Terms and conditions:

(1) The test items will not be retained for more than 15 days from the date of issue of test report. (2) The results relate only to the items tested (3) The test report shall not be reproduced except in full without the written approval of the laboratory (4) Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4. (5) The correctness of the information related to sample(s) in the Test Request Form/Customer letterhead/Email is the customer's responsibility. The laboratory reports the said information in the test report and is not liable for the same.

ANNEXURE-8

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

416/15, DHARGAS ROAD, PERUNGALATHUR, WEST TAMBARAM, CHENNAI, KANCHIPURAM, TAMIL NADU, INDIA

in the field of

TESTING

Certificate Number: TC-12339

Issue Date: 30/09/2023 **Valid Until:** 29/09/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: SHRIENT ANALYTICAL AND RESEARCH LABS PRIVATE LIMITED

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

ANNEXURE-9

PLATE NO: IB

DATE OF SURVEY : 09.10.2023

APPLICANT:

THIRU.N.MOHAMMED SALEEM BADHUSHA,
S/o.NAVASKHAN,
NO.1/19, MUTHUNAGAR,
SANKARNAGAR,
TIRUNELVELI – 627 357.

QUARRY APPLIED LEASE AREA:

S.F.NO : 812(P)
EXTENT : 1.95.0 Ha,
VILLAGE : NARANAMMALPURAM PART-I,
TALUK : TIRUNELVELI,
DISTRICT : TIRUNELVELI.

INDEX

TOPO SHEET NO : 58 H / 13

LATITUDE :08°48'15.51"N to 08°48'21.48"N

LONGITUDE :77°44'57.62"E to 77°45'03.02"E

- Q.L.APPLIED AREA
- 7.5m, 10m & 50m SAFETY
- 300M RADIUS
- 500M RADIUS
- 1KM RADIUS
- APPROACH ROAD
- FOOT PATH
- CART TRACK
- PANCHAYAT ROAD
- NATIONAL HIGHWAY

SATELLITE IMAGERY MAP

SCALE 1:10,000

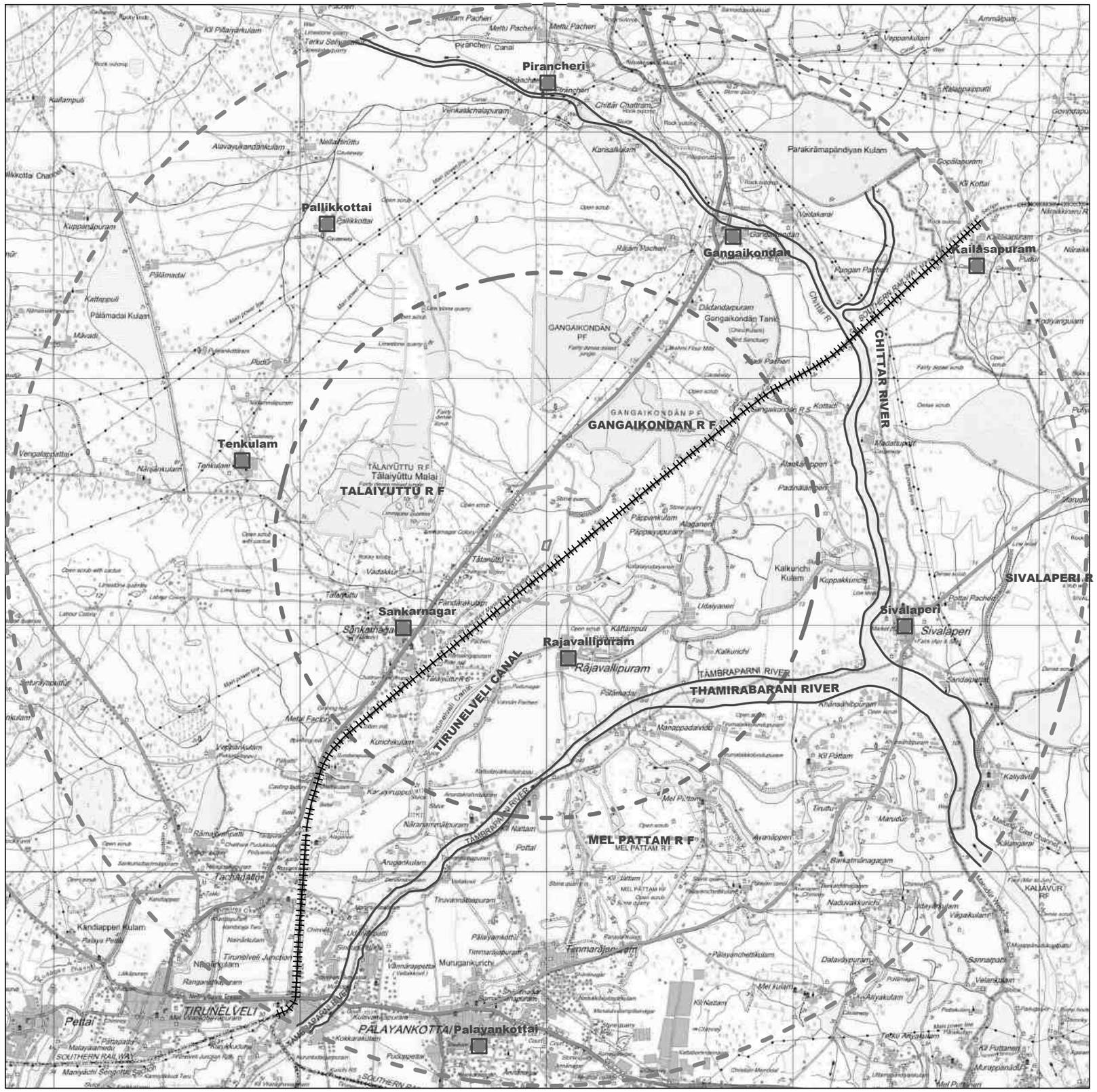
PREPARED BY :

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

N.RAVINTHIRAN,M.Sc.,(App.Geo)
QUALIFIED PERSON

ANNEXURE-10

PROPOSED ROUGH STONE AND GRAVEL QUARRY OF THIRU.N.MOHAMMED SALEEM BADHUSHA OVER AN EXTENT 1.95.0HA LOCATED AT S.F.NO. 812 (PART) OF NARANAMMALPURAM PART-I VILLAGE, TIRUNELVELI TALUK, TIRUNELVELI DISTRICT, TAMIL NADU STATE



INDEX

TOPO SHEET NO:

58 H/9, 10, 13 & 14

CONVENTIONAL SYMBOLS

Express highway: with toll; with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; unidentified. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under constn
Railways, other gauges: double; single with distance stone; dc
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features (1)flat. (2)sand-hills(permanent); (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms; palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated, wooded. Surveyed tree
Boundary, international
state: demarcated; undemarcated
district; subdivision; tahsil or taluk; forest
Boundary pillars: surveyed; unlocated
Heights, triangulated: station; point; approximate — △200 . 200 .200
Bench-mark: geodetic; tertiary; canal — . BM 63-3 . BM 63-3
Post office. Telegraph office. Overhead tank
Rest house or Inspection bungalow. Circuit house. Police station — RF PF
Camping ground. Forest: reserved; protected — KIKRI NÁGA
Spoced names: administrative; locality or tribal
Hospital. Dispensary. Veterinary Hospital / Dispensary
Aerodrome. Heliport. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

Q.L.APPLIED AREA	
10km RADIUS	
5.0km RADIUS	
1.0km RADIUS	
NATIONAL HIGHWAY	
STATE HIGHWAY	
HABITATION	
RIVER	
CHANNEL	
FOREST	

Global Mining Solutions

ANNEXURE-11

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU 06.02.2024 Rs.100/- DD 780434

N. Mohammed Saleem Badhusha

Tirunelveli

M. Jail

M. ரோசி (எ) தமிழரசி, மு.நா.
உரிமம் எண்: 6206-14/91
கச்சேரி வீதி, ஓமலூர்
சேலம் மாவட்டம்

AFFIDAVIT TO SEIAA - TAMIL NADU

I, N.Mohammed Saleem Badhusha, S/o.Navaskhan, No.1/19, Muthnagar, Sankarnagar, Tirunelveli, Pin Code– 627 357, I have applying for Environmental Clearance to SEIAA - Tamil Nadu for my proposed Rough Stone and Gravel Quarry lease over an extent of 1.95.0Ha located at the S.F.No. 812 (Part) of Naranammalpuram Part-I Village, Tirunelveli Taluk, Tirunelveli District, Tamil Nadu State, do hereby solemnly declare and sincerely affirm that;

1. None of the following features are located within a 10 km radius from the proposed quarry site;

a. Protected areas notified under the Wildlife (Protection) Act, 1972 (NBWL).

b. Wild Life Sanctuary:

Gangaikondan Spotted Deer Sanctuary – 1.85km (NE)

c. Critically polluted areas as notified by the central pollution control board constituted under Water (Prevention and Control of Pollution) Act 1974.

NOTARY ADVOCATE GOVT. OF INDIA

SP.N

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4	P.Katchimydeen	Naranammalpuram Village S.F.No: 817/1B1C	1.62.0 Ha	Proceedings No. M3/99246/2004 Dated 20.11.2004 For a period of 3 years from 29.11.2004 to 28.11.2007
b. Expired Quarries				
Nil				
c. Existing Quarries				
1	P.K.S Ahamad Meeran	Gangaikondan P-2 Village S.F.No: 1665/1B	2.10.5 Ha	For a period of 5 years from 06.10.2020 to 05.10.2025
2	C.Rasheed Ali	Gangaikondan P-2 Village S.F.No: 1662/1A (P) & 1663/1A	1.59.5 Ha	For a period of 10 years from 21.01.2022 to 20.01.2032
d. Present Proposed Quarries				
1	K.Ananthaperumal	Palamadai Village S.F.No: 414/1, 415/1A & 415/2A	6.60.5 Ha	Proposed Quarry
2	N.Mohideen Sheik Shahith	Naranammmalpuram P-1 Village S.F.No: 807	1.94.50 Ha	Proposed Quarry
3	A.Kothar Mydeen	Gangaikondan Village S.F.No: 1660/4	1.62.0 Ha	Proposed Quarry
4	N.Mohammed Saleem Badhusha	Naranammmalpuram P-1 Village S.F.No: 812 (Part)	1.95.0 Ha	Under proposed Quarry

The total lease within the 500m radius (Proposed + Existing) (4 nos + 2 nos) works out to 15.82.0 Ha including this lease area.

4. There will be no hindrance/disturbance due to the proposed quarrying activities to the people living nearby my proposed quarry site.

5. There are no approved habitations within a 300m radius from the periphery of my proposed quarry lease.

6. I assure you that the greenbelt will be developed and maintained before commencing the quarrying operations as proposed in the EC application.

NOTARY K.SIVASUBRAMANIAN ADVOCATE Salem Dt-636 455 Regn No. 10087/2015 Exp.Dt. 22.02.2025 GOVT. OF INDIA

SR.N 181

7. I assure you that the required life insurance policy for the employees engaged in the quarrying operations will be taken without fail.
8. The existing main road connecting the quarry road will be maintained in good condition and it will be utilized for the mineral transportation.
9. I assure you that I will not engage any child for labor in the quarrying operations and I am aware that engaging child labor is punishable under the law.
10. Personnel Protective Equipment (PPE) will be provided to all the employees engaged in the quarrying operations.
11. No permanent structures, such as temples, etc., are located within a 300 meter radius of the periphery of our quarry.
12. I will erect the wire fence with barbed wires all around the periphery of the quarry lease before the commencement of mining activities.
13. The mining operations will be carried out in a systematic and scientific manner by employing a qualified statutory person as per the requirement of the Mines Act, Mines Rules, and other Guidelines issued by Govt.
14. I will inform DGMS before the commencement of mining activities.
15. To the best of our knowledge, I ensure to do the social and environmental commitments as mentioned in the mining plan.

Notary Sign & Seal **Lessee Sign & Sea**

NOTARY
K.SITHESWARAN, B.L.,
ADVOCATE
Salem Dt-636 455
Regn No. 10987/2015
Exp.Dt. 22.02.2025
GOVT. OF INDIA

N.Mohammed Saleem Badhusha

6/2/2024

K.SITHESWARAN, B.L
Advocate & Notary Public
Opp. BDO Office, Omalur (Tk),
SALEM (Dt)- 636 455
Regn. No. 10987/2015
Cell : 94435 16211

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