

DRAFT EIA / EMP REPORT

FOR

ROUGH STONE & GRAVEL QUARRY

A. Project Proponent Details

Name	THIRU S. DEVARAJ
Address	Thiru. S. Devaraj S/O, Sri. K.R. Subbiah 19/29, G2, Krishnan Colony, Nerkundram Pathai, Vadapalani, Chennai. – 600 026.

B. Location Details

Extent	4.04.00 HA
Survey No.	502/1,2(P), 510/1,2 & 511/1,2
Location	GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU

C. Production Details

Total Production for 5 Years	ROUGH STONE - 7,07,060 m ³ GRAVEL - 1,90,060 m ³
Depth	35 m
Lease Period	10 YEARS

D. EIA/EMP details

ToR reference	TO25B0108TN81105N dated 08.04.2025
Baseline Monitoring	SUMMER SEASON (MAR - MAY 2025)

CONSULTANT



CREATIVE ENGINEERS & CONSULTANTS

NABET ACCREDITED CONSULTANCY, NABL ACCREDITED TESTING LAB

9B/4, Bharathwajar Street, East Tambaram, Chennai-600059.

Ph: 044-22395170, Cell: 09444133619 Email : cecgiri@yahoo.com,

SEPTEMBER 2025

PRO CODE: CEC/EMP/MI-246

REVISIONS OF EIA/EMP REPORT

Revision number	Report Status	Date of submission
00/SEP/25	Draft EIA /EMP Report	18.09.2025

Environmental Impact Assessment & Environmental Management Plan Report for Rough Stone and Gravel Quarry of Thiru. S. Devaraj, At Survey No. 502/1,2(P), 510/1,2 & 511/1,2 over an area of 4.04.00 hectares In Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu and authorized for submission by Dr. B. Swamynathan, EIA Coordinator on 18.09.2025 after due review by the personnel and consultation with the project proponents. Current Revision number of the EIA/EMP report is 00/AUG/25, signifying as per the revision mentioned in the above table that this is a draft EIA/EMP report.



Signature:

Date: 18.09.2025

PROJECT PROPONENT DECLARATION

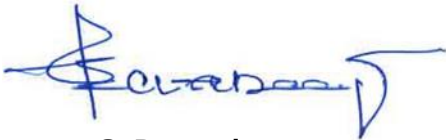
I, Thiru. S. Devaraj received Terms of Reference under EIA Notification 2006 from SEIAA, Tamil Nadu vide their letter **TO25B0108TN5581105N dated 08.04.2025** for Rough Stone & Gravel Quarry at Survey No. 502/1,2(P), 510/1,2 & 511/1,2 over an area of 4.04.00 Ha in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

We have entrusted the EIA study to M/s. Creative Engineers & Consultants (CEC), Chennai who have been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India with their accreditation valid upto 23.12.2026

The Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) have been prepared as per the generic structure proposed in the EIA notification 2006, ToR issued by SEIAA, Tamil Nadu. The prescribed ToR along with compliance is also incorporated in the EIA/EMP Report.

This report is prepared based on the information and data obtained from the Mining Plan and other records and the field study carried out by the consultant. The data given in the EIA/EMP report are factually correct to the best of my knowledge.

Signature:



S. Devaraj

Date: 18.09.2025



CREATIVE ENGINEERS & CONSULTANTS

(NABET ACCREDITED, NABL ACCREDITED TESTING LABORATORY,
DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

EIA Consultant Undertaking

[In compliance with MoEF Office Memorandum No. J-11013/41/2006-IA.II (I) dated 04.08.2009]

Creative Engineers & Consultants (CEC) is an NABL accredited testing Laboratory, and also NABET accredited Category–A environment consultancy organization for preparing EIA/EMP reports for the sectors Mining of minerals, Thermal power plants, Mineral Beneficiation & Cement plants.

CEC has been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India for empanelment of EIA Consultants with accreditation valid unto 23.12.2026.

Thiru. S. Devaraj received Terms of Reference under EIA Notification 2006 from SEIAA, Tamil Nadu vide their letter TO25B0108TN5581105N dated 08.04.2025 for Rough Stone and Gravel Quarry at Survey No. 502/1,2(P), 510/1,2 & 511/1,2 over an area of 4.04.00 Ha In Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

The prescribed TOR is complied with and incorporated in the EIA Report and submitted. This report is based on the information and data obtained from Approved Mining Plan, other records and data from the field study by CEC. The data generated and given in the EIA/EMP Report are factually correct. The sample analyses are carried out through CEC's laboratory.

(P. Giri)

Chief Executive & EIA Coordinator

Creative Engineers & Consultants

Date: 18.09.2025

Annexure – VII**Declaration by Experts contributing to the EIA Report for**

DRAFT EIA/EMP ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ, AT SURVEY NO. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.00 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

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

EIA coordinator:

B.Swamynathan

Name: **B.Swamynathan**

Signature and Date: 18.09.2025

Period of involvement: **Jan 2025 onwards**

Contact information:

Functional area experts:

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and date
1	AP*	P.Giri	• Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards. • Identification of sources of air pollution comprising dust, gaseous emission due to mining & other activities • Identification of Impacts & suggestion of mitigation measures Period: Jan 2025 onwards	<i>P.Giri</i>
		B.Swamynathan	• Data interpretation of Micro meteorological data for wind rose. • Identification of polluting source and suggestion of suitable mitigation measures. Period: Jan 2025 onwards	<i>B.Swamynathan</i>

2	WP*	G.Sandhya	• Study of the monitored data with respect to the applicable standards. • Identification of Water requirement & Source • Preparation of water balance diagram • Identification of Water polluting sources • Impact of the project on the water quality, both surface and groundwater • Suggestion of Mitigation measures to control water pollution Period: March 2025 onwards	
3	SHW*	P.Giri	• Quantification of mineral & waste from mining operation • Waste disposal method evaluation • Providing dump management plan • Providing Surface Runoff Management Structure Requirements. • Identification of Hazardous waste and its details of disposal Period: March 2025 onwards	
4	SE*	R.Baburaj	• Identification of villages in the study area and finalization of demographic profile of the villages within the study area. • Preparation of sections relevant to SE functional area in the EIA/EMP report Period: March 2025 onwards	
5	EB*	B.Swamynathan	• Perusal of existing data relevant to this project. • Studying the details of flora and fauna, separately for core, buffer zone and forest area based on primary field survey. • Identification of species , Indicating the Schedule of the fauna present in the study area • Assessment of impact on Biological environment and suggestion of mitigative measures • Collecting & providing details of existing and proposed Green belt development /plantation in the core zone Period: March 2025 onwards	
6	HG*	K.Shankar	• Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures	

			• Perusal of site specific ground water table details for the core zone and the study area. • Studied the hydrological aspects of surface and groundwater in study area • Study about impact on the hydrology due to mining operation • Suggesting mitigative measures like RWH for enhancement of ground water level Period: March 2025 onwards	
7	GEO*	K.Shankar	• Study of geology of the ML area and the surrounding areas. • Provide details about Mineral composition Period: March 2025 onwards	
8	SC*	B.Swamynathan	• Study of soil profile • Assessment of Impact on soil and suggesting plantation scheme. Period: March 2025 onwards	
9	AQ*	G.Sandhya	• Quantification of emission particulars • Air quality modelling for post project impact on the air quality prediction of the study area. • Analysis of the Isopleth generated • Arriving at the post project concentration at the AAQ monitoring locations • Preparation of meteorological data in suitable form for input into the model • Simulation of model for generation of Isopleth and data interpretation. • Studying the impact on AAQ monitoring locations due to the generated emissions. • Preparation of sections relevant to AQ functional area in the EIA/EMP report. Period: March 2025 onwards	
10	NV*	P.Giri	• Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards. • Predict the noise level and vibration level due to proposed mining operation based on scientific evaluation. • Suggesting the Mitigation measures to control noise pollution, Suggesting the Mitigation measures to	

			control ground vibration Period: March 2025 onwards	
11	LU	B.Swamynathan	• Collection of Remote sensing satellite data to study the land use pattern. • Primary field survey and limited field verification • Preparation of Land use map using Satellite data of the project area separately for the core zone and the buffer zone and providing the land use pattern. Period: March 2025 onwards	<i>B.Swamynathan</i>
12	RH*	K.Shankar	• Identified Major risks involved in the project Mitigation measures suggested to avoid risk. • Preparation of onsite and offsite emergency management plan Period: March 2025 onwards	<i>K.Shankar</i>

*One TM against each FAE may be shown

**Please attach additional sheet if required

Declaration by the Head of the accredited consultant organization/ authorized person

I, **P.Giri** hereby, confirm that the above mentioned experts prepared the EIA report for **DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ, AT SURVEY NO. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.00 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.**

I also confirm that EIA Coordinator (EC) has gone through the report, and the consultant organization shall be fully accountable for any misleading information. It is certified that no unethical practices, plagiarism involved in carrying out the work and external data / text has not been used without proper acknowledgement while preparing this EIA report.

Signature: *P.Giri*

Name: **P.Giri**

Designation: **Chief Executive**

Name of the EIA consultant organization: **Creative Engineers & Consultants, Chennai – 59**

NABET Certificate No. & Issue Date: **No- NABET/EIA/23-26/RA 0331 & date 23.12.2026**

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File No: 11791
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated 08/04/2025



To,

Thiru. S. Devaraj
S/O, Sri. K.R. Subbiah19/29, G2, Krishnan Colony, Nerkundram Pathai, Vadapalani, Chennai. – 600
026., Gopalapuram, VIRUDHUNAGAR, TAMIL NADU, 600026
adittyaeearthmovers@gmail.com

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

Sir/Madam,

SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Rough Stone and Gravel Quarry lease over an extent 4.04.0 Ha at S.F.Nos. 502/1, 2(P), 510/1, 2 & 511/1, 2 of Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu by Thiru. S. Devaraj-under project category – “B1” and Schedule S.No.1(a) – ToR issued along with Public Hearing-preparation of EIA report – Regarding.

Ref:

1. Online proposal No. SIA/TN/MIN/521246/2025, Dated: 04/02/2025.
2. Your application submitted for Terms of Reference dated: 04.02.2025.
3. Minutes of the 538th Meeting of SEAC held on 01.03.2025.
4. Minutes of the 804th Meeting of Authority held on 01.04.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5581105N
(ii) File No.	11791
(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. S. Devaraj
(viii) Name of Company/Organization	DEVARAJ
(ix) Location of Project (District, State)	VIRUDHUNAGAR, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no

1. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1 (Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.
2. The above-mentioned proposal has been considered by SEIAA in the meeting held on 01.04.2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal Thiru. S. Devaraj under the provisions of EIA Notification, 2006 and as amended thereof.
5. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6. The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
7. This issues with the approval of the Competent Authority.
8. The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

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

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Specific Conditions:

S. No	Terms of Reference
1.1	1. Since waterbodies are situated within 1km, the PP shall carry out the hydrogeological and hydrological study including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies.

S. No	Terms of Reference
	2. The details of enumeration of structures within 500m including schools, colleges, primary health centres should be submitted along with the EIA report.

2. Seiaa Standard Conditions:

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

S. No	Terms of Reference
	<u>Water Environment</u> 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: - Hydrothermal/Geothermal effect due to destruction in the Environment. - Bio-geochemical processes and its foot prints including Environmental stress. - Sediment geochemistry in the surface streams. <u>Energy</u> 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. <u>Climate Change</u> 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. <u>Mine Closure Plan</u> 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. <u>EMP</u> 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. <u>Risk Assessment</u> 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. <u>Disaster Management Plan</u> 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the

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



SEAC SPECIFIC CONDITIONS:

The proposal was placed in the 538th meeting of SEAC held on 01.03.2025. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Thiru. S. Devaraj has applied for Terms of Reference for the proposed rough stone and gravel quarry lease over an extent 4.04.0 Ha at S.F.Nos. 502/1, 2(P), 510/1, 2 & 511/1, 2 of Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.
2. The project/activity is covered under Category “B1” of Item 1(a) “Mining of Minerals Projects” of the Schedule to the EIA Notification, 2006.
3. As per the precise area communication, the lease period is 10 years and mining plan period is for 10 years & production should not exceed 7,07,060m³ of Rough Stone & 1,90,060m³ of Gravel. As per the approved mining plan, the annual peak production shall not exceed 84,400m³ of Rough Stone and 29,500m³ of Gravel for an ultimate depth of 35m.

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

1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:**
 - (i) **Copy of the agreement forming CMC.**
 - (ii) **The Organisation chart of the Committee with defining the role of the members**
 - (iii) **The ‘Standard Operating Procedures’ (SoP) executing the planned activities.**
2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.
3. Since waterbodies are situated nearby, the PP shall carry out the hydrogeological and hydrological study including the details of waterflow pattern to determine the impacts

of the mining operation in the waterbodies.

4. The PP shall complete the consent registration and furnish the details along with the EIA report.
5. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.
6. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.
7. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
8. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.
9. 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.
10. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.
11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

SEAC STANDARD CONDITIONS:

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

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

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

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

(or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.

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

project specific occupational health mitigation measures with required facilities proposed in the mining area may be detail ed.

37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.

Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

A. STANDARD TERMS OF REFERENCE

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste

generation and its management, mining technology etc. and should be in the name of the lessee.

- 4) All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of

- land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
 - 13) Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
 - 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
 - 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
 - 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
 - 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
 - 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished.

Necessary allocation of funds for implementing the same should be made as part of the project cost.

- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM₁₀, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input

parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and Bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species

and the species which are tolerant to pollution.

- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

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

sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of acquisition, nearby (in 2-3 km.) water body, population,

with in 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)

18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

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

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TOR COMPLIANCE

S.No	ToR Points	Reply	Pg. No
1. SEAC SPECIFIC CONDITIONS			
1	Since waterbodies are situated within 1km, the PP shall carry out the hydrogeological and hydrological study including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies.	Hydrogeological Study is detailed under Section 3.6, Chapter-III.	3-44
2	The details of enumeration of structures within 500m including schools, colleges, primary health centres should be submitted along with the EIA report.	• Details of the features produced within 500m radius are provided in Figure 2.6, Chapter-II	2-12
2. SEIAA STANDARD CONDITIONS			
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.	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
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.,	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
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.	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
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.	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
5	The committee shall deliberate on risk & emergency management plan, fire safety	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3



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	& evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.		
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report.	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
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.	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	• Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
Agriculture & Agro-Biodiversity			
9	Impact on surrounding agricultural fields around the proposed mining Area.	• Most of the study area remain uncultivated and only in patches of land away from the lease area, agricultural activities are carried based on monsoon rainfall. Due to poor quality of the soil, inconsistent rainfall, water scarcity, high agricultural labor cost, manpower shortage and less yield are reason for very little agricultural activity in this region	4-8
10	Impact on soil flora & vegetation around the project site.	• The impact of mining on biological environment is provided under Table 4.15, Chapter-IV.	4-18
11	Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP.	• The details of flora in the core zone is provided in Table 3.21, Chapter-III. There is no major clearance of vegetation or transplantation involved.	3-39

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12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under Section 3.5.1, Chapter-III.	3-36
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	The post mining land use has been provided in Table No. 4.13. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-16 4-22
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	Due to poor soil condition and non-availability of perineal water source, no major agricultural activity is carried out in and around the lease area. Only patches of plantation are observed in few places in the monsoon season based on water availability	4-8
Forests			
15	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife.	There are no reserve forest within 10km radius and as such no impact on this front envisaged.	4-18
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-	3-36
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	3-36
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There are no national parks or corridors in the 10 km radius. There are no reserve forest in the proximity of the lease area.	4-18
Water Environment			
19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it	The details of hydrogeological study is provided under Section 3.6, Chapter-III.	3-44



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	may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.		
20	Erosion Control measures.	• Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in this quarry. As such there will not be any wash out due to stock pile or waste dumps. • Towards surface runoff management, a garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users	4-9
21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	• There is no proposal to discharge any effluent into this waterbody. No major impact is envisaged on the nearby water bodies due to project operations	4-11
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	• There is no major perennial waterbody in close proximity of the lease area.	4-18
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities.	• The post mining land use has been provided in Table No. 4.13. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-16 4-22
24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III. • The land use pattern details are provided under section 4.5.1, Chapter-IV.	3-36 4-17
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	• The nearest major water bodies is provided in Table No.3.2, Chapter-III. • The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. The ultimate pit depth of mining is 35 m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.	3-3 4-11

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26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	• The details of hydrogeological study is provided under Section 3.6, Chapter-III.	3-44
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams.	• The details of the same is provided in Table 4.20, Chapter-IV.	4-25
Energy			
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	• The dust control measures are listed under Table 4.1, Water pollution control measures under Section 4.3.2, and noise pollution control measures under Section 4.4.1.2, Chapter-IV. Besides, energy consumption in this project will be optimum and as per requirement.	4-2 4-9 4-15
Climate Change			
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	• Certified vehicles with low carbon emissions will only be used. 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 2000 number of plants will be planted in and around the lease area.	7-7
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.	• Certified vehicles with low carbon emissions will only be used. 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 2000 number of plants will be planted in and around the lease area.	7-7
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	• Replied above	--
Mine Closure Plan			
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	• Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	7-4

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EMP			
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	• Detailed environmental management plan is provided under Chapter-X.	10-1
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	• Detailed environmental management plan is provided under Chapter-X.	10-1
Risk Assessment			
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	• Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII.	7-1
Disaster Management Plan			
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	• The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
Others			
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	• VAO Letter has been provided as Annexure-4	A-10
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and	• Will be provided in the Final EIA/EMP Report after completion of public hearing.	--



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	all the activities proposed shall be part of the Environment Management Plan.		
39	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the Environment. The ecological risks and impacts of plastic & micro plastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	• 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.	4-27
2. SEAC SPECIFIC CONDITIONS			
1	A Cluster Management (CMC) Committee shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: - Copy of the agreement forming CMC. - The Organisation chart of the Committee with defining the role of the members - The 'Standard Operating Procedures' (SoP) executing the planned activities.	• Agreed • Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-3
2	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.	Agreed	--
3	Since waterbodies are situated nearby, the PP shall carry out the hydrogeological and hydrological study including the	Hydrogeological Study is detailed under Section 3.6, Chapter-III.	3-44

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	details of waterflow pattern to determine the impacts of the mining operation in the waterbodies.		
4	The PP shall complete the consent registration and furnish the details along with the EIA Report.	Agreed	
5	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	Details of the features produced within 500m radius are provided in Figure 2.6, Chapter-II	2-12
6	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.	Details of the features produced within 500m radius are provided in Figure 2.6, Chapter-II	2-12
7	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	• Site photographs have been provided in Chapter-II. Fencing and plantation are already carried out.	2-10
8	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	3-36
9	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.	EMP is prepared for the entire life of the mine. Affidavit will be provided along with the final EIA/ EMP report.	--
10	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed	The details of the quarries located within the 500m radius of the project is given vide Annexure-3.	A-8



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	quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	- A cumulative impact study has been carried out and furnished in Para 7.6, Chapter-VII. - Environmental Management Plan is provided under Chapter-X.	7-5
11	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.	• Agreed	--
SEAC STANDARD CONDITIONS			
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.	• Nil	--
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.	• Letter from VAO is obtained and given as Annexure – 4.	A-10
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the	• Details of the features produced within 500m radius are provided in Figure 2.6, Chapter-II	2-12

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	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.	• Hydrogeological Study is detailed under Section 3.6, Chapter-III.	3-44
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	• A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	3-36
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.	• There area no Reserve forest, Protected Areas, Sanctuaries, Tiger reserve etc., within 10km Radius.	3-3
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.	• Nil	--
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the	• Pit slope stability plan has been provided under Section 7.7, Chapter-VII	7-6

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	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.	• Will be submitted along with the final report	--
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	• Controlled blasting will be adopted in this project and details of the same has been provided in Section 4.4.2, Chapter-IV	4-16
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.	• Agreed	--
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,	• Nil	--
13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	• Fresh lease	--
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.	• Fresh lease	--

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	- If EC and CTO already obtained, the copy of the same shall be submitted. - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.		
15	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	- Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II. - The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III. - Geology Map, Geomorphology, Lithology map are enclosed as Figure No.3.18, 3.19 and 3.20, Chapter-III.	2-9 3-2 3-45 & 48
16	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	Agreed	--
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.	Site photographs have been provided in Chapter-II. Fencing and plantation are already carried out.	2-10
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.	- The details of the geological and mineable reserves are provided in Table No.2.4, Chapter-II. - The mining method will be Opencast semi mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers. - The production schedule is given in Table No.2.7, Chapter-II. - Anticipated Impacts of the mining operations and mitigation measures are discussed elaborately in Chapter-IV.	2-15 2-17
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically	The organization chart has been provided in Figure No.10.1, Chapter-X.	10-3

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	and systematically in order to ensure safety and to protect the environment.		
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	• Details of hydrogeological scenario of this project is provided under section 3.6, Chapter-III.	3-44
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	• The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (March 2025 to May 2025) and detailed in Section 3.3 to 3.5 of Chapter-III. The details of Traffic is provided under Section 4.9, Chapter-IV.	3-12 & 3-36 4-26
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.	• The details of the quarries located within the 500m radius of the project is given vide Annexure-3. • A cumulative impact study has been carried out and furnished in Para 7.6, Chapter-VII. • Environmental Management Plan is provided under Chapter-X.	7-5
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	• The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain of length 1050 m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the	4-10 4-12



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		downstream users. The surface runoff management structures diagram is given in Figure No 4.4, Chapter-IV. • Details of rainwater harvesting are provided under Section 4.3.4.2, Chapter-IV.	
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.	• The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.4, Chapter-III. • The land use pattern at present and at the end of the quarrying period has been provided under section 4.5.1, Chapter-IV. • The post mining land use has been provided in Table No. 4.14. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	3-31 4-17 4-22
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.	• There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Besides, there is no proposal for overburden dump outside the lease area.	2-17
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	• Not Applicable	--
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	• The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. • Towards surface runoff management, garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff	4-10 4-12

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		management structures diagram is given in Figure No 4.4, Chapter-IV. • The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.	
28	Impact on local transport infrastructure due to the Project should be indicated.	• From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Details of the traffic is provided under section 4.9, Chapter-IV.	4-26
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.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	3-36
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	• Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	7-4
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	3-36
32	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	• Agreed	--
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	• Agreed	--

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	authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.		
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.	• The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
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.	• Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII.	7-1
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.	• Details of occupational health and safety aspects are given under the subsections of Para 4.7, Chapter-IV.	4-24
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.	• Details of the socio-economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III. • Public health facilities will be further aimed to be developed through CER activities wherein health checkups, medical camps for the locals will be conducted.	3-9
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.	• Nearby villages were visited for conducting study to know about socio-economic conditions, including aspirations and requirements of the people for a better living and collected relevant data. The details are provided under section 3.2.4, Chapter-III.	3-9

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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.	• PP informed that there is no litigation pending against the project.	--
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	• The Rough stone Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, health, infrastructural etc. • Direct employment to about 16 people and indirect employment to scores of people. • By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent has allocated Rs.5 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.	2-20
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.	• Nil	--
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	• EMP is prepared for the entire life of the mine. Affidavit will be provided along with the final EIA/ EMP report.	--

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A. STANDARD TERMS OF REFERENCE			
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	• Nil	--
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given	• Precise area communication letter was obtained from the District Collector Virudhanagar.	11-2
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	• The production capacity, quantity of waste, its management and mining technology in mine plan and EIA, etc., are compatible with one another.	2-24
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	• Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II. • The geology and geomorphology map is provided in Figure No.3.18, 3.19, Chapter-III. The Lithology map and Soil map are provided under Figure No. 3.20, 3.21, Chapter-III. • The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III.	2-9 3-2 3-45 & 48
5	Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	• Replied in Standard ToR point no.4	--
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State	• Not Applicable	--



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	land use board or the concerned authority.		
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	• The proponent will frame a well-planned environmental policy. Its details are provided under Section 10.2.1, Chapter-X. • The Mines Manager will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. The organizational chart for the same has been provided in Figure No.10.1, Chapter-X.	10-1 10-3
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	• Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII. This being an opencast mine, subsidence is not applicable. The impact due to ground vibrations due to blasting is given in para 4.3.2, Chapter-IV.	7-1 4-9
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	• The study area chosen for collecting existing environmental status covers 10 km radial distance from the project periphery (Figure No - 3.1). Data given in the report is for the life of the mine.	3-2
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land	• The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.4, Chapter-III. • The land use pattern at present and at the end of the quarrying period has been provided under section 4.5, Chapter-IV. • In the post mining stage, entire 3.80.0 Ha of mined out area at 35m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing.	3-31 4-16



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	use should be given.		
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	• There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Besides, there is no proposal for overburden dump outside the lease area.	4-17
12	Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	• There is no forest land in the lease area.	--
13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	• There is no forest land in the lease area.	--
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	• Not Applicable	--
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	• There is no forest land in the lease area.	--
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area	• The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.	4-18

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	and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.		
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	• Replied in Standard ToR point No.16	--
18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	• A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	3-36
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed	• Not Applicable	--

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	mining activities could be considered.		
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	• Not Applicable	--
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shilling of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	• The mining activities will be carried out within the mine lease area only. The entire mine lease area is a patta land. There is no population within the ML area. Hence, the question of R& R does not arise.	7-4
22	One season (non-monsoon) (i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season) primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified	• The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (March 2025 to May 2025) and detailed in para 3.3 to 3.5 of Chapter-III. • Monitoring stations were selected taking into account, wind direction and location of sensitive receptors. • Free silica composition in PM10 sample has been done and the values are found to be Below Detectable Limit (DL 0.05mg/m3) which is well within the prescribed limit of 5mg/m3.	3-12 & 3-36

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	keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.		
23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	• Air quality modeling details are furnished in para 4.2.2 and its continuous sub paras in Chapter-IV of EIA report. • The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. • The model simulations are done for the air pollutant arising from the mining operations, namely, PM10, PM2.5. Ground Level Concentration (GLC) have been computed using hourly meteorological data. • The Isopleths of PM10, PM2.5 concentrations for with control measures scenario have also been drawn and these are given in Figure No.4.1 and 4.2. • It can be seen that on individual basis, the resultant added concentrations with baseline figures with respect to PM10 is in the range of 52.2 µg/m³ to 69.0 µg/m³ and with respect to PM2.5 are in the range of 25.6µg/m³ to 40.4 µg/m³ which are within the stipulated statutory limits.	4-3
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	• The total water requirement for this project will be 8.0 KLD comprising 1.0 KLD for drinking water and domestic use, 5.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.3.	4-8
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	• Not Applicable.	--
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of	• The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling	4-10

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	rainwater harvesting proposed in the Project, if any, should be provided.	pond to prevent solids escaping along with discharge, before outlet. etc. • Towards surface runoff management, a garland drain of length 1050m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.6, Chapter-IV. • The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.	4-12
27	Impact of the Project on the water quality, both surface and groundwater. should be assessed and necessary safeguard measures, if any required, should be provided.	• There are no perineal water courses in the lease areas. There is a Kanmai is around 20m in southwest side and for seasonal drainage 10m safety has been left in West side of the lease area. Vaippar River - 1.6km – SE, Cholapuram River - 3.3km – W, Solasserri River - 3.7km – W, Karuva Nadi - 8.8km – SW, Marugal Odai - 1.8km – NE, Nedunkulam Odai - 8.6km – NE. • The ultimate pit depth of mining is 35m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.	3-3
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	• The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Since the mining area consists of hard compact rock, no major water seepage within the mine is expected from the periphery. • The ultimate pit depth of mining is 35m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation. • Details of hydro geological study are given in Para 3.6.1 Chapter – III.	3-51 3-44
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	• There are no streams passing through the lease area.	--

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30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	• The area applied for mining lease is a gentle plain terrain. Part of the lease area has already been mined out. • The ultimate pit depth of mining is 35m. The ground water table in this area is below this level.	11-8 11-3
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phasc-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	• Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 2000 trees will be planted in and around the lease area. Details of the same is provided under TableNo.4.21, Chapter-IV.	4-21
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	• From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Details of the traffic is provided under section 4.9, Chapter-IV.	4-26
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	• This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.	2-20



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34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	• In the post mining stage, entire 3.80Ha of mined out area at 35m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined out void shall be utilized in the area.	11-13
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed	• Details of occupational health and safety aspects are given under the subsections of Para 4.7, Chapter-IV.	4-24
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	• Details of the socio economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III. • Public health facilities will be further aimed to be developed through CER activities wherein periodic health checkups, medical camps for the locals will be conducted.	3-9
37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	• Towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs. 5 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner in the nearby Government schools. In consultation with the locals based on the need & priority it will be implemented. Its details are provided in Para 4.6.5, Chapter-IV	4.23
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	• Detailed Environmental Management plan and its implementation, etc., are furnished in Chapter X.	10-1
39	Public Hearing points raised and commitment of the Project Proponent on	• This draft EIA/EMP report will be exposed to public consultation as per mandatory	7-1



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	the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu.	
40	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	PP informed that there is no litigation pending against the project.	--
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	- The cost of the project is Rs. 63,17,780 - The Environment Management Budget of Rs. 24.49 Lakhs is allocated under capital cost and Rs. 21.88 Lakhs/annum under recurring cost and the same has been furnished in Table 10.2, Chapter-X. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue.	2-20 10-12
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	- The proposed Rough Stone Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, health, infrastructural etc. - Direct employment to 16 people and indirect employment to scores of people. - By means of carrying out the socio economic development activities, local community development is expected. Towards the same, the proponent has allocated Rs. 5 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.	2-20



CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF THE REPORT:

Thiru. S. Devaraj propose to operate Rough Stone and Gravel Quarry at Survey No. 502/1,2(P), 510/1,2 & 511/1,2 over an area of 4.04.0 hectares in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu and has initiated action towards obtaining environmental clearance.

Production Capacity 7,07,060 m³ of Rough Stone & 1,90,060 m³ of Gravel up to depth of 35 m for the period of ten years. (Peak production capacity of 84,400 m³ of rough stone & 29,500 m³ of Gravel)

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius cluster along with this subject project works out to >5 Ha. Hence, this proposal is considered under Category – B1 and as per MoEF & CC notification necessitates preparation of EIA/EMP report and public hearing.

This EIA/EMP report for Thiru. S. Devaraj is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide TOR Identification No. TO25B0108TN5581105N dated 08.04.2025 and is in conformance of the generic structure prescribed by MOEF&CC in their notification of September 2006 and the approved mining plan.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT:

1.2.1 IDENTIFICATION OF THE PROJECT:

Rough stone and Gravel Quarries of Thiru. S. Devaraj located in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

Table 0.1: Details of the project

Project Name	Survey No.	Area	Land Type
Rough stone and Gravel Quarry of S. Devaraj	. 502/1,2(P), 510/1,2 & 511/1,2	4.04.0 Ha	Joint patta land owned by a applicant and his wife, Applicant got consent from his wife.

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Site vicinity map has been described in Figure 1.1. The rough stone and gravel will be excavated and loaded into tipper to the required buyers .

Figure 0.1: Site Vicinity Map



Table 0.2: Identification of project

Project Name	Rough stone and Gravel Quarry of Thiru. S. Devaraj
Extent	4.04.0 Ha
Total Production	7,07,060 m ³ of Rough Stone & 1,90,060 m ³ of Gravel up to depth of 35 m for the period of ten years. Production capacity for first 5 year is 3,43,500 m ³ of Rough Stone & 1,15,600 m ³ of Gravel up to depth of 30m.
Peak Production	Annual peak production capacity of 84,400 m ³ of Rough stone and 29,500 m ³ of Gravel.

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Ultimate Depth	35 m for 10 years and 30m for 5 years (Below ground level)
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Source: Approved Mining Plan

Table 0.3: Statutory Clearances

Name	Issuing Authority	Status	Letter number	Date	Reference
Precise Area Communication	Assistant Director, Geology & Mining Virudhunagar	Received	KV1/848/2021	28.02.2022	Annexure-1
Mine Plan Approval	Assistant Director, Geology & Mining Virudhunagar	Approved	KV1/848/2021	05.04.2022	Annexure-2 of PFR
District survey report	Collector, Assistant Director, Geology & Mining	Authenticated	As per S.O. 3611(E) dated 25.07.2018	2019	-
Details of other leases within 500m radius	Assistant Director, Geology & Mining Virudhunagar	Obtained	KV1/848/2021	05.04.2022	Annexure-3
NOC for features with in 300m radius	VAO	Obtained	-		Annexure-4

1.2.2 IDENTIFICATION OF THE PROJECT PROPONENT:

Table 0.4: Identification of Project Proponent

Applicant Name	Thiru. S. Devaraj,
Address	Thiru. S. Devaraj S/O, Sri. K.R. Subbiah 19/29, G2, Krishnan Colony, Nerkundram Pathai, Vadapalani, Chennai. – 600 026.
Contact Number	9790775777



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Email-ID

adittyaeearthmovers@gmail.com

1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION & PROJECT IMPORTANCE

Table 0.5: Brief Description of Nature of project

Sector	1(a), Non-Coal Mining
Type	Fresh Project
Category	B1
Mineral to be mined	Rough Stone and Gravel
Major/Minor Mineral	Minor
Mining Method	Opencast mechanized method of mining with jackhammer drilling, blasting, excavator, transportation by tippers.

Table 0.6: Location of the project

S.No	Particulars	Details
1	Corner Coordinates	Latitude : 9°21'08.4" N to 9°21'16.4" N Longitude: 77°37'14.5" E to 77°37'23.7" E
2	Toposheet Number	58 G/11
3.	Survey No.	502/1,2(P), 510/1,2 & 511/1,2

Location details are elaborated in Para 2.3, Chapter-II.

1.3.1 IMPORTANCE TO THE COUNTRY AND REGION:

Rough stone and Gravel from these quarries will meet the domestic demand. The production and method of mining is planned considering the geological factors, availability of proven technology, demand for the material etc. Safety barriers as per State Government order is left in the planning stage itself. Systematic and scientific mining will be carried out. This project will provide employment opportunities to many people. The proponent will carry out CER activities which will help the surrounding villages to derive socio economic benefits. The activities will be customized based on local needs and prioritized. Hence, livelihood development and employment will arise due to this project.

1.4 SCOPE OF THE STUDY:

Particulars	Details
Proposal no	SIA/TN/MIN/521246/2025, dated: 04.02.2025
File no	11791
Terms of Reference	TO25B0108TN5581105N dated 08.04.2025
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Summer Season (March – May 2025)



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Based on the terms of reference, data collection, the Environmental Impact Assessment was carried out for the project area (core zone and the buffer zone (10km radius from the core zone) and the following studies were covered:

- Collection of primary and secondary data relevant to the project.
- One-Season baseline monitoring for environmental parameters such as air, water, noise, soil, flora & fauna, etc. Analysis of parameters in in-house laboratory.
- Documentation of EIA/EMP report with inclusion of relevant studies conducted by other bodies into the EIA/EMP report.
- Identification of significant environmental parameters that are prone to get affected due to pollution. Namely, Air, Water, Noise, Soil, Biological and Land Environment.
- Evaluation and determination of suitable mitigation measures to reduce and control the said pollution.
- Prediction of post project concentration (baseline + incremental) with respect to air environment for core zone and buffer zone.(on individual as well as cumulative basis)
- Formulation of an Environmental Management plan including administrative aspects for proposed implementation of mitigative measures in time.

This draft EIA/EMP report will be submitted for public consultation, as per rules and procedures in this respect, as per the EIA notification 2006. The opinions, concerns and objections, if any, of the surrounding public and other stake holders connected, will be taken into consideration and compliance report thereon will be submitted to SEIAA, Tamil Nadu in the final EIA/EMP report.

* * * * *



CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT:

This proposal involves quarrying of Rough stone and Gravel by Thiru. S. Devaraj using mechanized opencast method for the lease period of 10 years.

2.2 NEED & JUSTIFICATION FOR THE PROJECT:

There is a huge demand for construction material and the entire material produced from this quarry will be used in the local construction/ infrastructure sector. Considering the following favorable factors it is practically possible to achieve the proposal within the planned period and this proposal is fully justified.

- Availability of good quality proved reserves
- Techno economic viability of the scheme
- Better approachability to the project, availability of logistic facility in proximity to the site
- Economic and Socio Economic Benefits to the region

2.3 LOCATION:

A brief description of the mining area, along with the location, coordinates, accessibility, etc. has been details below in Table No.2.1.

Table 2.1: Mine site description

Project Name	Rough stone and Gravel Quarry of Thiru. S. Devaraj
Location	Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.
Survey No.	502/1,2(P), 510/1,2 & 511/1,2
Coordinates	Latitude : 9°21'08.4" N to 9°21'16.4" N Longitude: 77°37'14.5" E to 77°37'23.7" E
Nearest Village	Mettuvadakarai – 500m (S) side.
Nearest Town	Rajapalayam - 13.0km - NW
Nearest Highway	SH-186 – 4.4Km– NE
Nearest Railway Station	Rajapalayam - 13.0km - NW

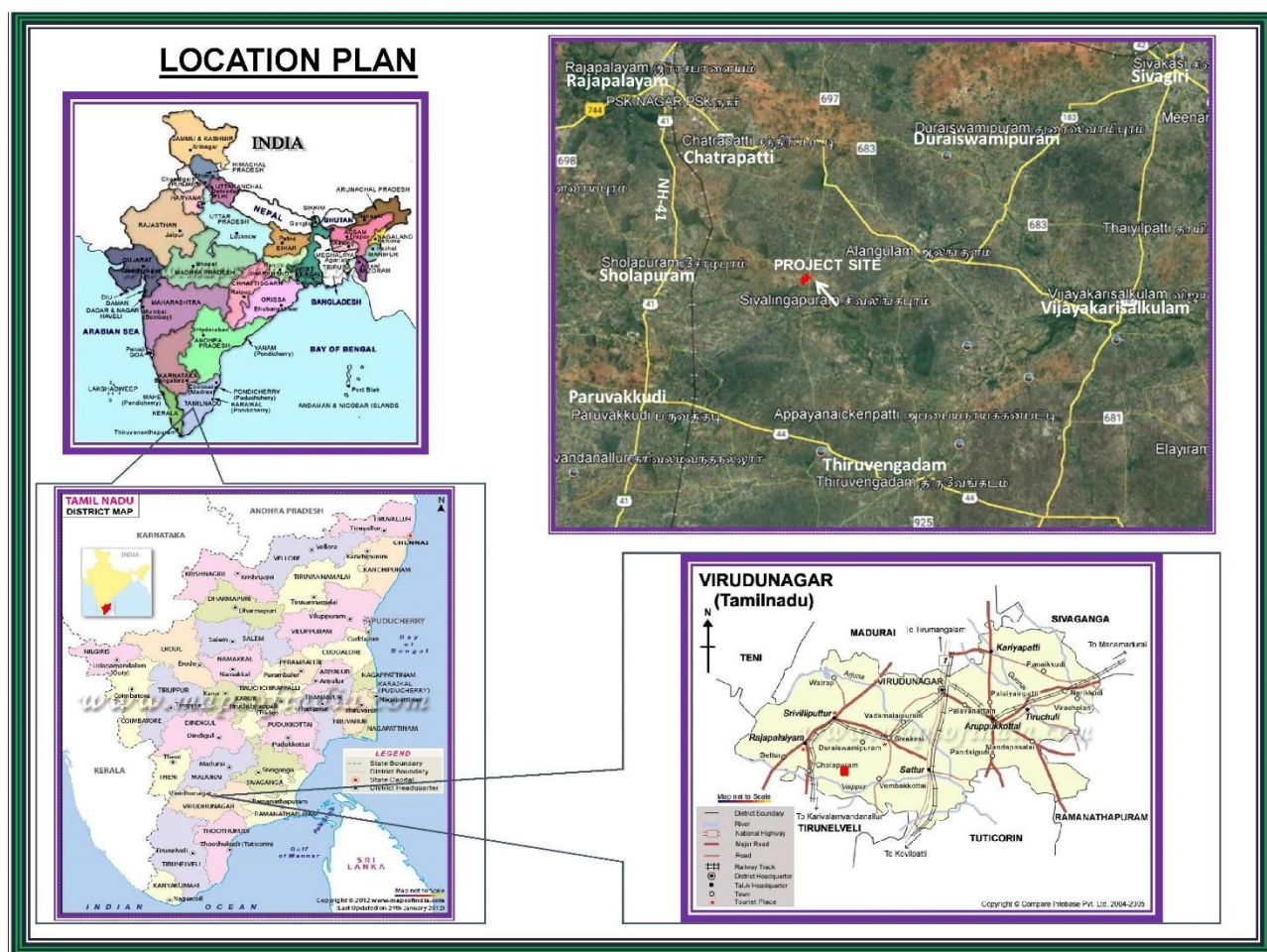


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Nearest Airport	Madurai -74km -NE
Accessibility	The area applied for quarry lease lies in 17km south side of Srivilliputhur & joins at Srivilliputhur to Vadakarai main road and 0.6km south of Gopalapuram
Topography	The lease area is a plain terrain, Massive formation of Charnokite is clearly visible in the nearby quarry. The slope is gentle towards 'southern side.

Location map is provided in **Figure No.2.1**.The approachability map is provided in **Figure No.2.2**. Corner co-ordinates of the lease area and satellite imagery are shown in **Figure No. 2.3** & 2.4 respectively. Village map for 500m radius from the lease is shown in **Figure No. 2.5**.

Figure 2.1: Location Map



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Figure 2.2: Approachability Map

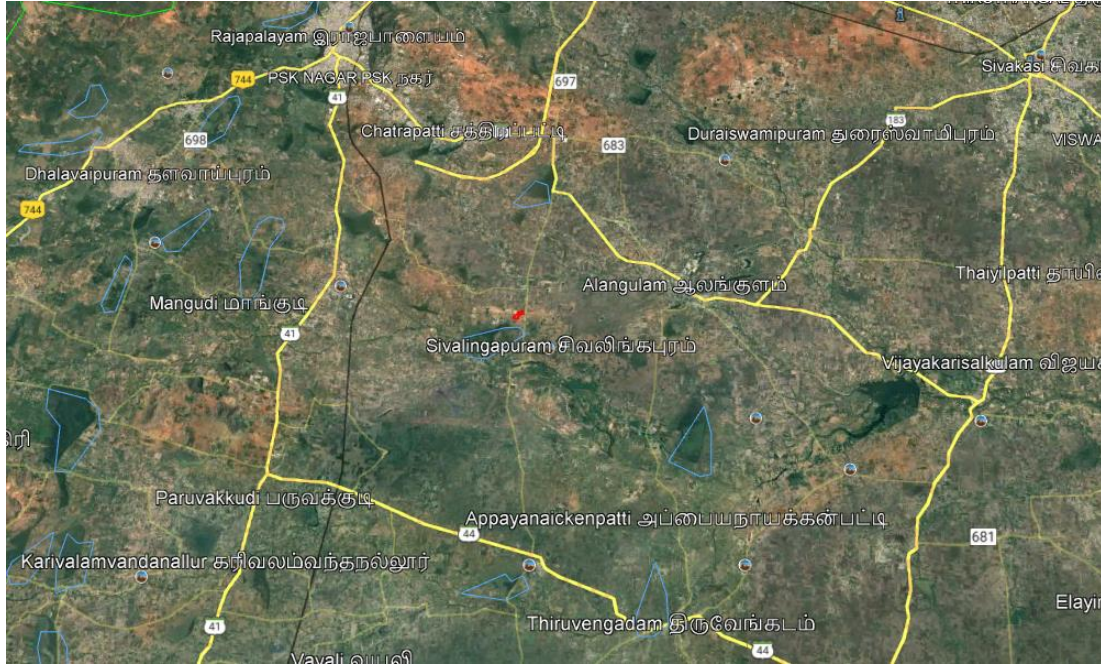


Figure 2.3: Lease Plan

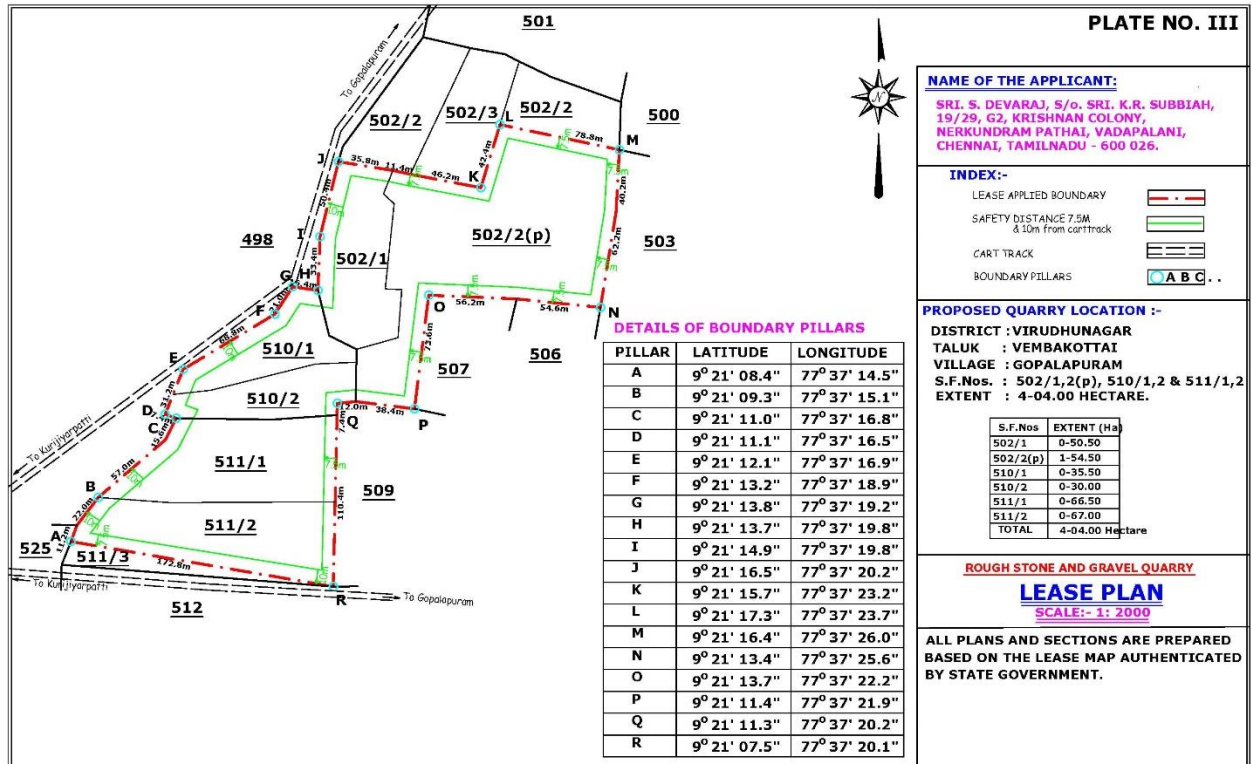
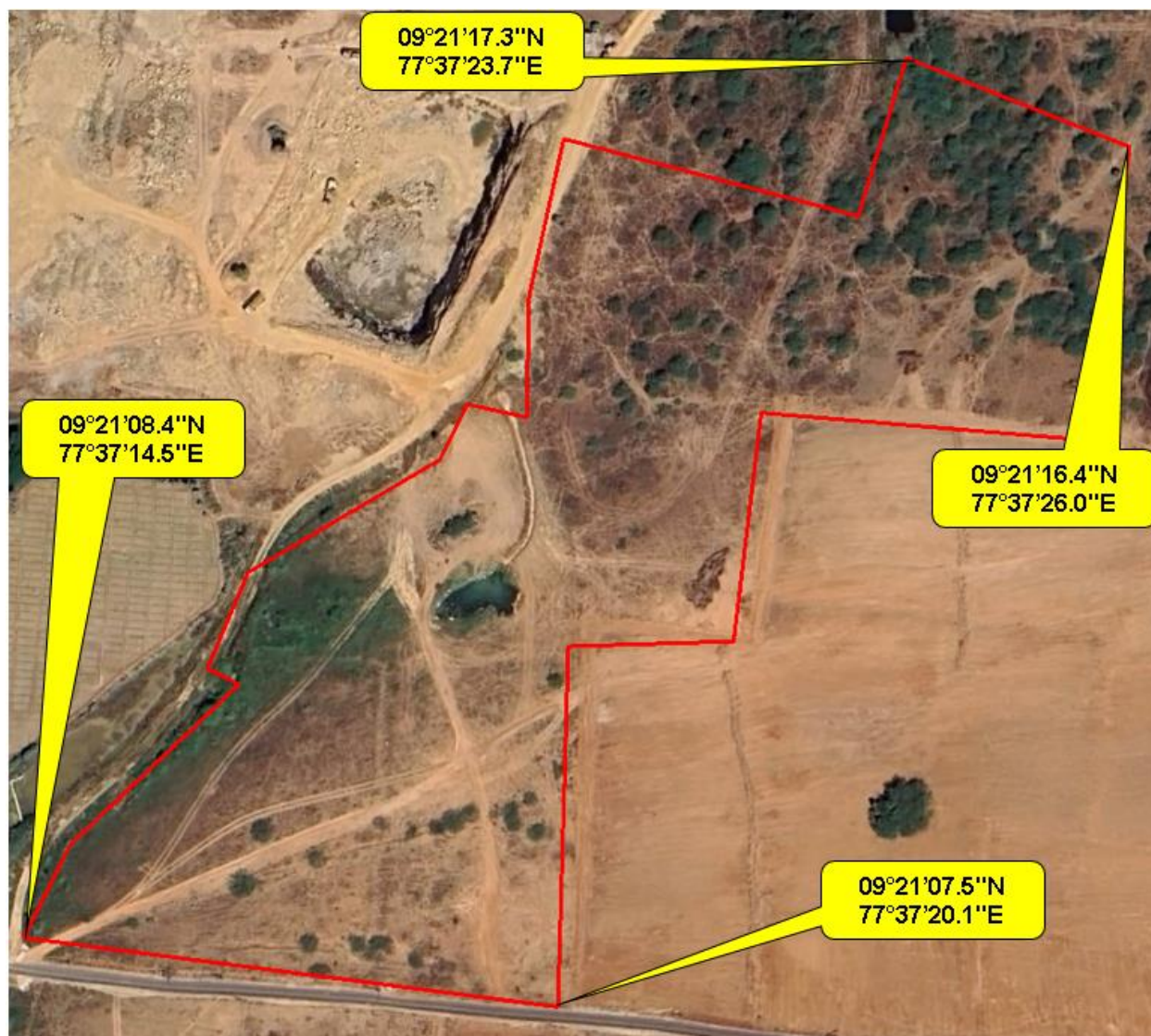


Figure 2.4: Satellite Imagery Showing Corner Co-ordinates



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ
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GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR, TAMIL NADU.**

SITE PHOTOGRAPHS



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ AT SURVEY NOS. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.0 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR, TAMIL NADU.

Figure 2.5: Village Map

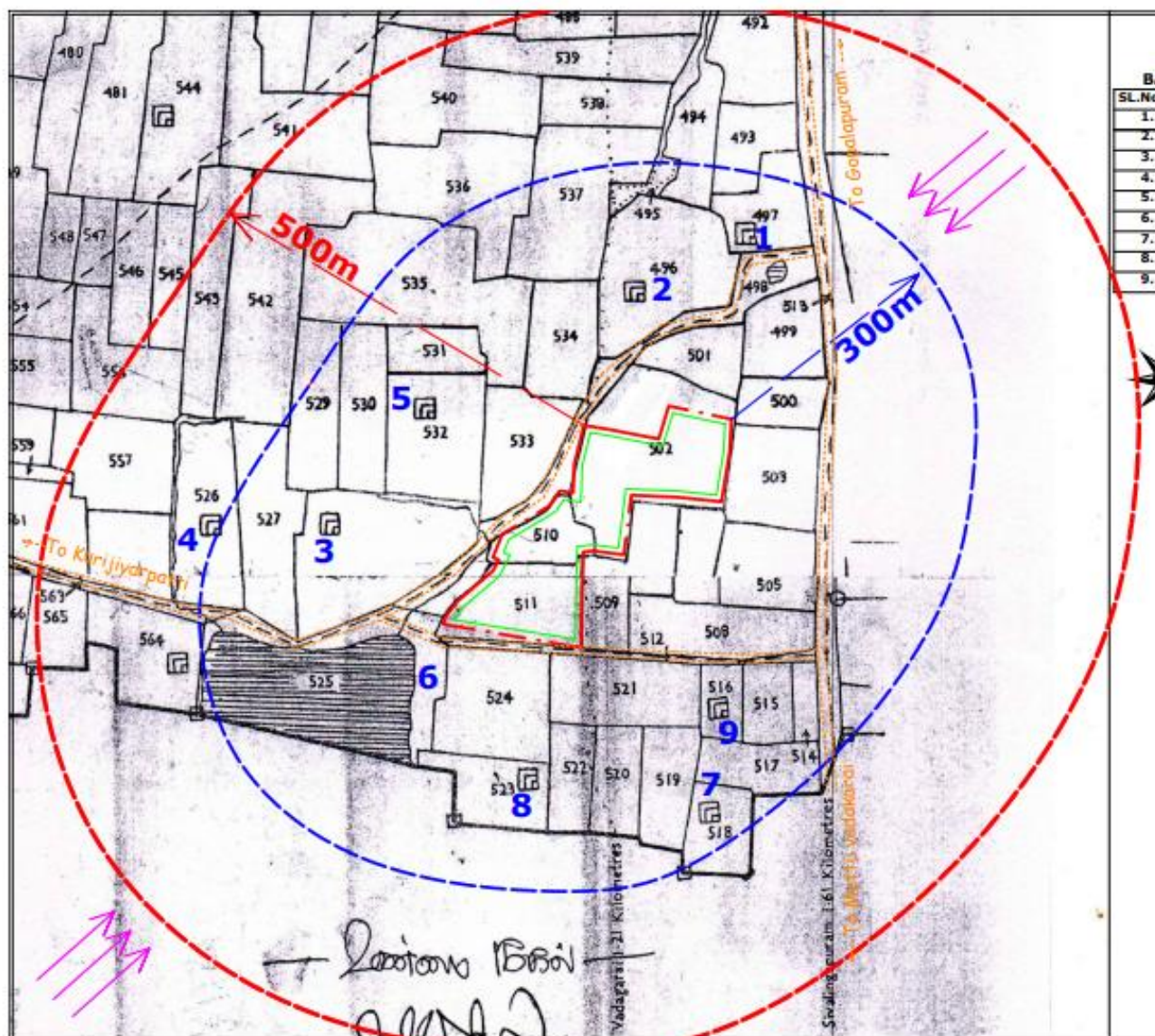
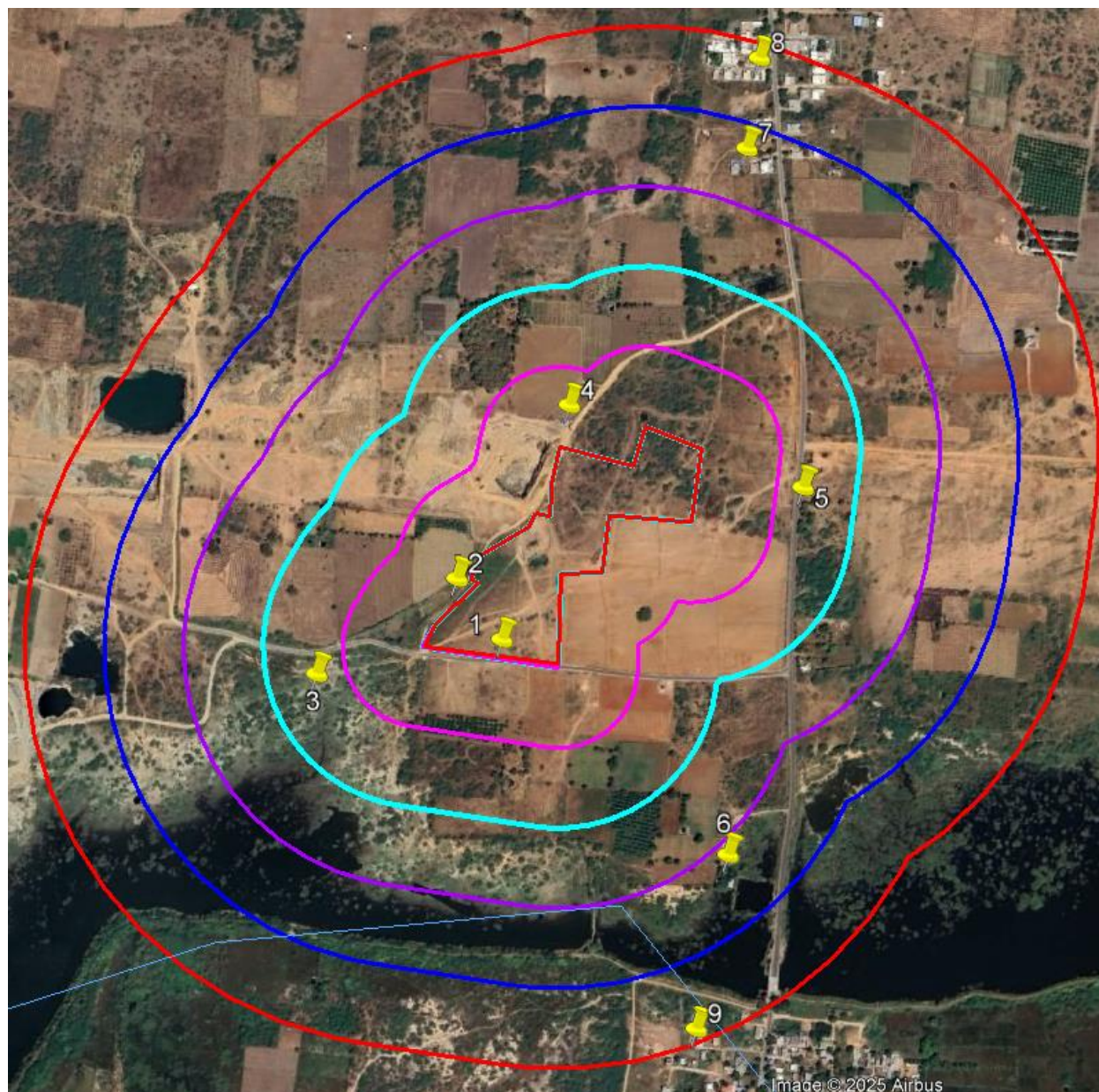


Figure 2.6: Details of features within 500m radius



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ AT SURVEY NOS. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.0 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR, TAMIL NADU.

As per the conditions of the Terms of Reference, the details of structures located within the 300m and 500m radius are provided below.

Table 2.2: Features within 500m radius

S.No	Features	Distance
0-100 M		
1	Cart Track	10m- S
2	Seasonal Drainage	10m-W
3	Kanmai	20m-SW
4	Old Shed	30m-N
101-200 M		
5	Road	125m -E
201-300 M		
	Nil	
301-400 M		
6	Small Temple	340m-SE
7	House	345m-N
401-500 M		
8	Houses	432m-N
9	Settlement	498m-S

2.4 LAND CLASSIFICATION:

The lease area of Rough stone and Gravel is a joint patta land owned by a applicant and his wife, Applicant got consent from his wife and the details of the same has been provided below:

Table 2.3: Survey Number wise Area Breakup

District	Taluk	Village	Survey No	Area in Ha	Ownership
Virudhunagar	Vembakottai	Gopalapuram	502/1,2(P), 510/1,2 & 511/1,2	4.04.0	Joint patta land owned by a applicant and his wife, Applicant got consent from his wife.
Total Area in (Hectares)				4.04.0	

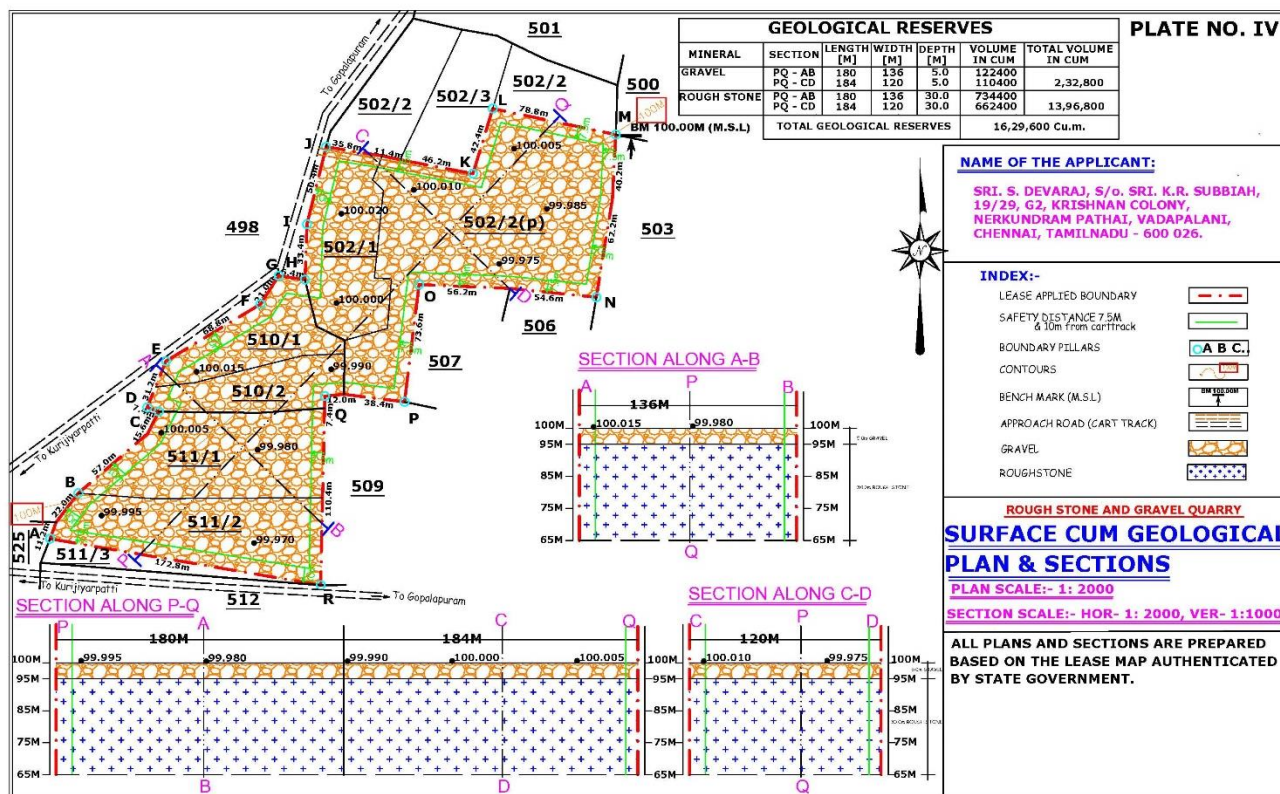


DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ AT SURVEY NOS. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.0 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR, TAMIL NADU.

2.5 GEOLOGY:

The area is underlined by the wide range of metamorphic rocks of peninsular gneissic complex.. 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 NS with almost vertical dipping.

Figure 2.7: Geological and Surface Plan Cross Section



2.6 SIZE AND MAGNITUDE OF THE OPERATION:

- The proposed mining will be done by open cast mechanized mining method.
- Life of mine will be 10 years.
- Production capacity of 7,07,060 m³ of Rough Stone & 1,90,060 m³ of Gravel up to depth of 35 m for the period of ten years. Production capacity for first 5 year is 3,43,500 m³ of Rough Stone & 1,15,600 m³ of Gravel up to depth of 30m.
- There is no waste generation anticipated in this quarry operation since the entire excavated material will be transported directly to buyers.

2.6.1 RESERVES:

Table 2.4: Geological and Mineable Reserves

Type of reserves	Rough stone and Gravel Quarry	
	Rough stone (m ³)	Gravel(m ³)
Geological Resource	13,96,800	2,32,800
Mineable reserves	7,07,060- 10 Years	1,90,060-10 Years
	3,43,500- 5 Years	1,15,600 - 5 Years

The mineable reserves is arrived after considering the safety distance as per the Precise area letter.

2.6.2 MINING METHOD:

Opencast mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers will be carried out. The top gravel is soft and can be directly excavated. The rough stone below will be blasted and then excavated. Bench height of 5.0m & 5m width is considered.

Table 2.5: Details of Equipments

EQUIPMENT	CAPACITY	Rough stone and Gravel Quarry
		REQUIREMENT
Excavator	TATA HITACHI EX200	1
Tipper	10 Tonnes	6
Tractor compressor for drilling	175 CFM	2
Dewatering pump	5 HP Diesel pump	1

2.7 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION:

The proponent propose to implement the production immediately after obtaining all the statutory approvals such as CTE, CTO, etc. The proponent will comply with the environmental clearance conditions during mining operations. The schedule of project implementation envisaged for this project is provided below. This is a tentative schedule subject to various factor, hence unforeseen variations may occur.

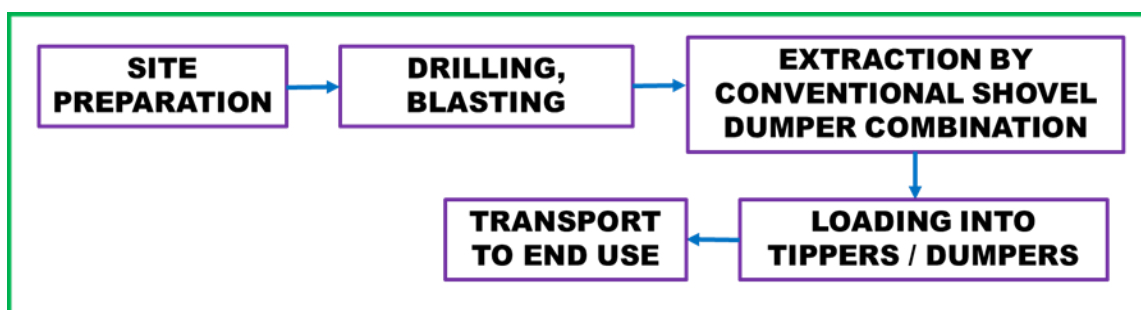
Table 2.6: Proposed Schedule of Implementation

Activities	Months					
	Zero Date	1	2	3	4	5
Obtaining Environmental Clearance						
Obtaining Consent from State Pollution Control Board						
Lease Execution						
Equipment mobilization and Commencement of Mining activity after following all the Statutory Requirements						

2.8 TECHNOLOGY AND PROCESS DESCRIPTION:

The quarry operations involve drilling, blasting, excavation, loading and transportation of rough stone to buyers. The production of Roughs tone in this quarry involves jackhammer drilling and blasting. The primary boulders 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. The process flow diagram of this project is provided below.

Figure 2.8: Process Flow Diagram



2.9 PROJECT DESCRIPTION:

Fresh Lease & no mining activity carried out in this lease so far

2.9.1 PLAN PERIOD:

Production capacity of 7,07,060 m³ of Rough Stone & 1,90,060 m³ of Gravel up to depth of 35 m for the period of ten years. Production capacity for first 5 year is 3,43,500 m³ of Rough Stone & 1,15,600 m³ of Gravel up to depth of 30m for the period of 5 years. The year wise production for the projects has been provided below:

Table 2.7: Production Schedule During Plan Period.

YEAR	ROUGH STONE IN CU.M.	GRAVEL IN CU.M
I	59300	29500
II	66600	23600
III	66600	23600
IV	66600	23600
V	84400	15300
First 5 Year Total	3,43,500	1,15,600
VI	73800	15300
VII	77500	15300
VIII	74100	15300
IX	73800	15300
X	64360	13260
2nd 5year Total	3,63,560	74,460
10Year Total	7,07,060	1,90,060

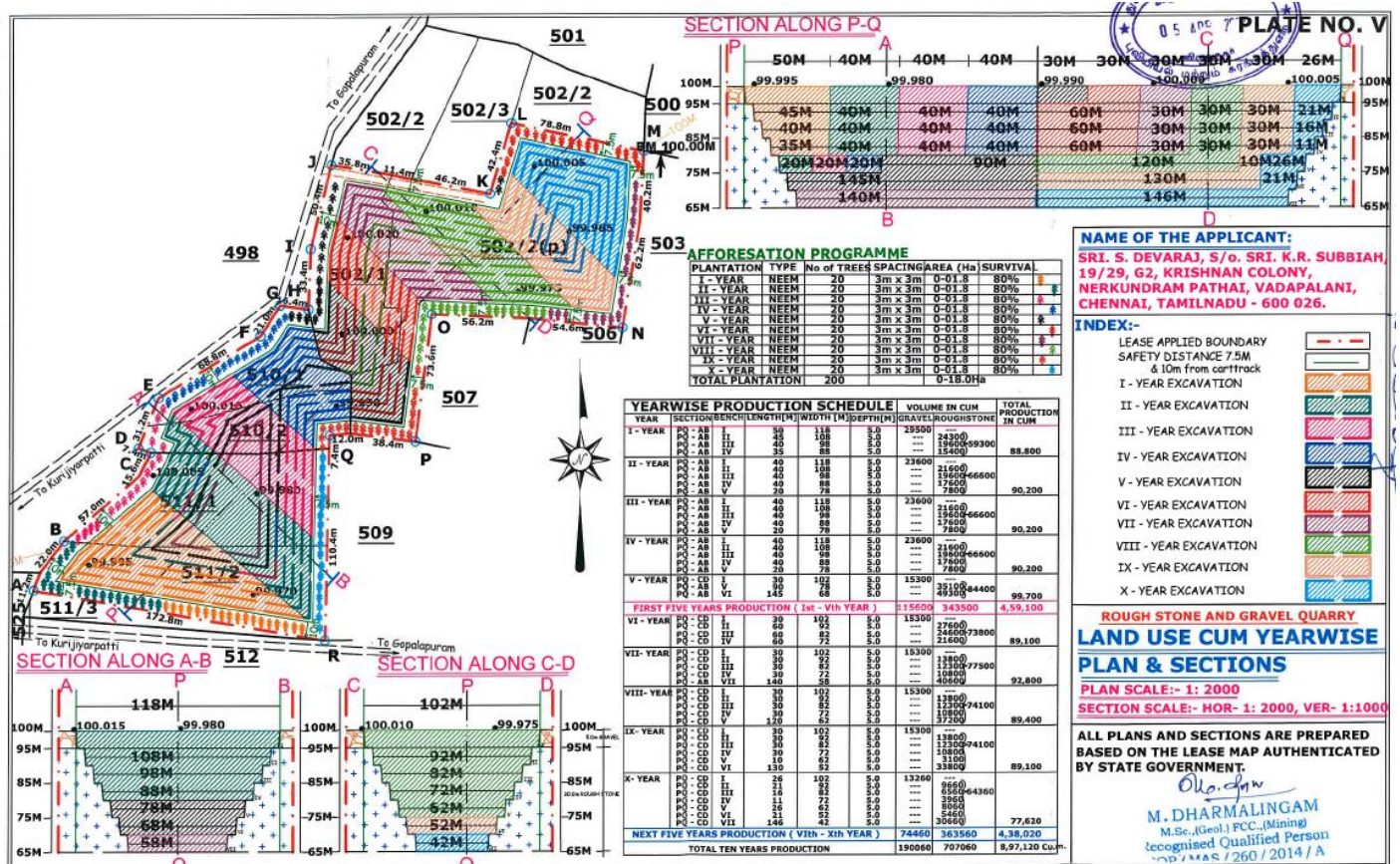
The applicant has proposed to carry out the Production capacity of 7,07,060 m³ of Rough Stone & 1,90,060 m³ of Gravel up to depth of 35 m for the period of ten years. Production capacity for first 5 year is 3,43,500 m³ of Rough Stone & 1,15,600 m³ of Gravel up to depth of 30m.

Waste Disposal during Plan Period:

There is no waste generation anticipated in these quarries since the entire excavated material will be utilized. The top overburden in the form of Gravel and weathered rock will be loaded into tipper and marketed to needy customers on payment of necessary Fees to Government. The excavated rough stone will be excavated and loaded into tipper to the needy buyers for producing crusher aggregates, M Sand.

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Figure 2.9: Year wise Plan & Section



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ AT SURVEY NOS. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.0 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR, TAMIL NADU.

2.9.2 CONCEPTUAL PERIOD:

In the post mining stage, 3.80.0 Ha will be used as mined out area up to 35m depth. Ultimately the entire mined out area will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing.

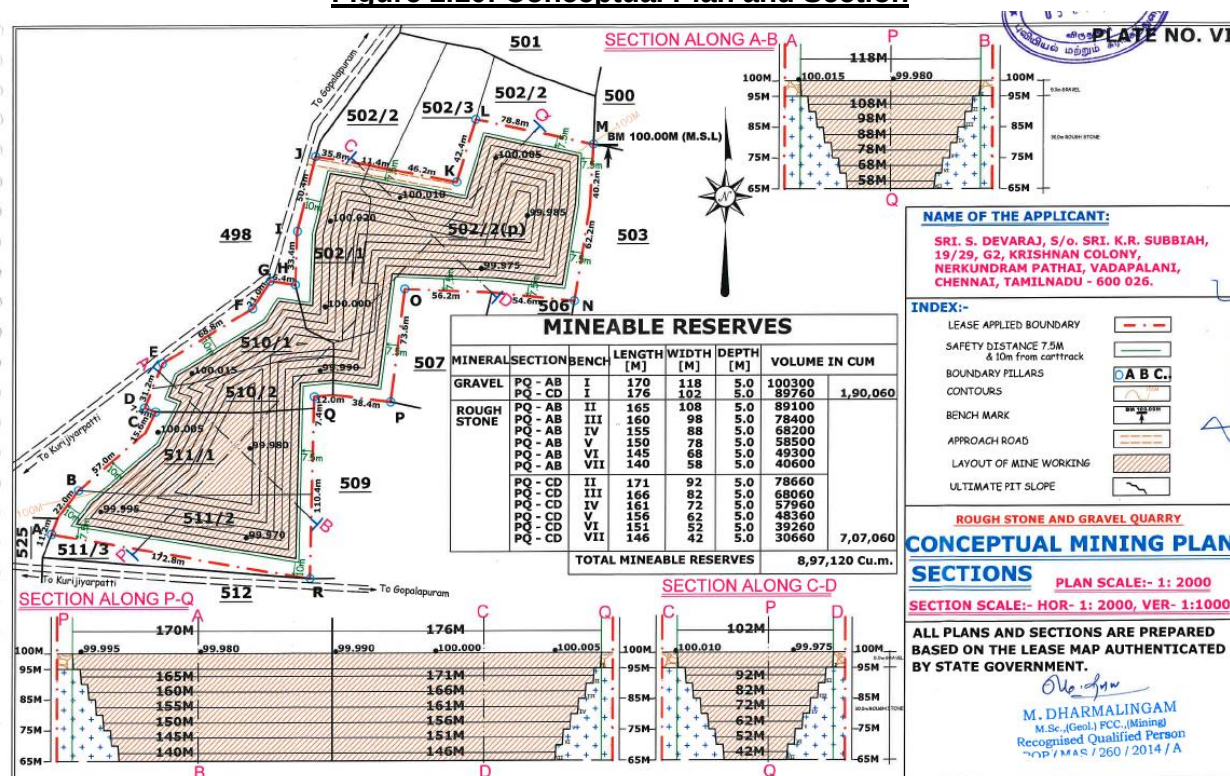
The ground water table on the surface in this area is ranging from 45 to 50m BGL Hence, ground water intersection in not envisaged

Table 2.8: Ultimate Pit Dimensions

ULTIMATE PIT SIZE			
SECTION	LENGTH(M)	WIDTH(M)	DEPTH(M)
Southern side	170	118	35
Northern side	176	102	35

The ground water table on the surface in this area is quite deeper. Hence, ground water intersection in not envisaged. The Conceptual Plan & Cross section are shown below:

Figure 2.10: Conceptual Plan and Section



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2.9.4 LAND DEGRADATION/UTILIZATION:

The land use pattern at present and at the end of the quarrying period has been provided below.

Table 2.9: Land Use

Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Mining Area	Nil	3.80
2.	Infrastructure & Roads	Nil	0.02.0
3	Green Belt	Nil	0.18.00
4	Fencing	Nil	0.04.0
5	Undisturbed area	4.04.0	0.00.0
Total		4.04.0	4.04.0

In the post mining stage, 3.80.0 Ha will be mined out area up to 35m depth. Ultimately the entire mined out area will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing.

2.9.5 PROJECT REQUIREMENTS:

Table 2.10: Project Requirements

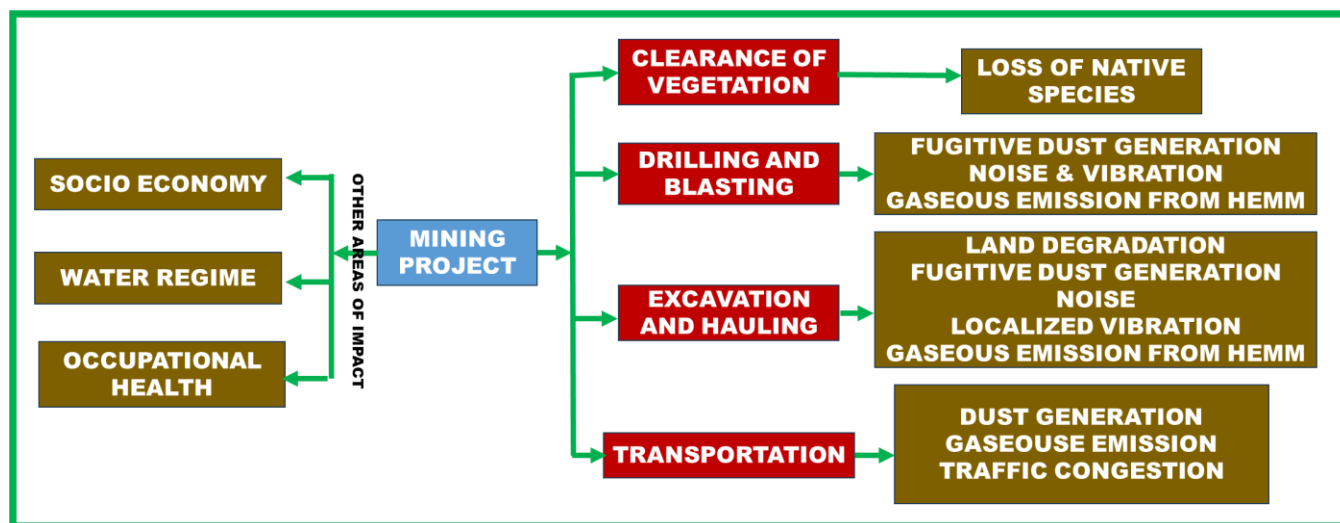
Project Name	Rough stone and Gravel Quarry	
Manpower	18 persons directly and 50 people indirectly.	
Water Requirement and Source	Water Requirement: 5 KLD	
	Details	Quantity (KLD)
	Drinking water and Domestic Use	1.0 KLD
	Dust Suppression	3.0 KLD
	Green belt	1.0 KLD
	Total	5.0KLD
Source: The required water will be procured from outside agencies. Rain water harvested in the mine sump shall also be used.		
Power Requirement	No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.	
Site Services	This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.	
Project Cost	Rs.63,17,780/-	
Funds allocated for socio-economic	Rs.5.0 Lakhs is allocated under CER budget.	



2.10 DESCRIPTION OF MITIGATION MEASURES:

Scientific and systematic development of mines will be carried out by the project authorities for preserving as well as improving the environmental conditions in and around the mining lease area. Elaborate analysis on impacts and mitigation measures to be adopted on implementation of this project and the same has been dealt in Chapter- IV.

Figure 2.11: Schematic Diagram of mining activities and associated impacts



2.11 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY:

There is no new technology that is being implemented. Opencast method of mining which is the proposed method of mining is a proven technology which is technologically and economically viable. No major technological failures are anticipated. A disaster management plan shall be put into place to take care of any unforeseen situation.

2.12 CONCLUSION:

As good environmental preservation is one of the prime motive of the project proponent. It is expected that the project activity will not have any major impact on environmental equilibrium in the study area.

CHAPTER 3

DESCRIPTION OF ENVIRONMENT

3.1 GENERAL:

The existing environmental baseline data for the various environmental components were collected in the study area for the purpose of assessing the impact on present environment due to the project activities.

Monitoring was carried out systematically and meticulously as per relevant IS codes, CPCB, MoEF&CC guidelines during **Summer Season (March 2025 to May 2025)** The details of the study are given in this chapter.

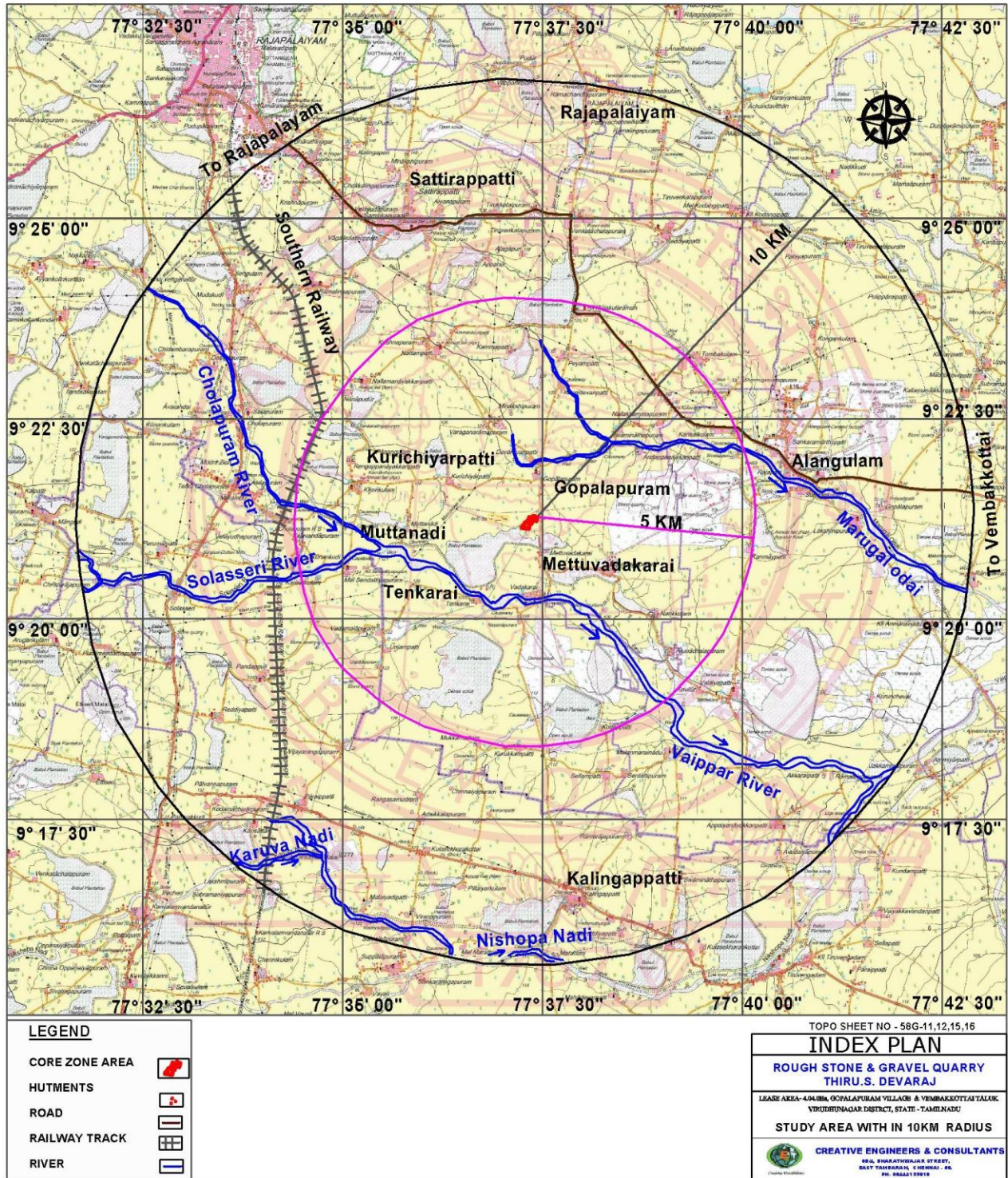
For the purposes of this study, the area has been divided into two zones, namely, core and buffer zones. The cluster area is considered to be the core zone while the buffer zone encompasses a 10km radius from the periphery of the core zone. The details of villages falling in the study area and other features are given in Index Plan in **Figure No - 3.1**. The primary data collection was done by means of field monitoring and the secondary data collection was obtained from published sources and government documents. The details of the baseline data collection which has been elaborated through the course of this chapter has been concised below:

Table 3.1: Type of Baseline Data

S.No	Studies	Parameters / Study	Location
1	Socio Economy	Demographic Data from Census 2011	Core and Buffer Zone
		Sample Survey	Buffer Zone
2	Micro Meteorology	Rainfall Data from IMD, Virudhunagar	Buffer Zone
		Temperature, Humidity, Wind Speed, Wind Direction	1 Representative Location
3	Ambient Air Quality	PM10, PM2.5, SO2, NOx, CO	1 Core Zone, 5 Buffer Zone
4	Water Quality	Physical and Chemical Parameters	1 Core Zone, 5 Buffer Zone
5	Noise Levels	Ambient Noise	1 Core Zone, 5 Buffer Zone
6	Soil Quality	Physical and Chemical Parameters	1 Core Zone, 2 Buffer Zone
7	Land Use and Land Cover	Land use pattern within 10km study area using RS Satellite	Buffer Zone
		Land use based on Census 2011	Core and Buffer Zone
8	Biological Environment	Flora and Fauna	Core Zone and Buffer Zone
9	Hydrology & Hydro Geology	Hydrogeological profile of the area	Core Zone and Buffer Zone

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Figure 3.1: Study Area Map



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. DEVARAJ AT SURVEY NOS. 502/1,2(P), 510/1,2 & 511/1,2 OVER AN AREA OF 4.04.0 HECTARES IN GOPALAPURAM VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR, TAMIL NADU.

Table 3.2:Environmental Setting of the Study Area

S.No	PARTICULARS	DETAILS
1	Nearest highway	SH-186 (Rajapalayam – Vembakottai Road) – 4.4km - NE
2	Nearest Railway station	Rajapalayam RS – 13 km - NW
3	Nearest Airport	Madurai – 74 Km – NE
4	Nearest major water bodies	➤ Kanmai -20m-SW ➤ Seasonal Drainage – 10m-W ➤ Vaippar River - 1.6km – SE ➤ Cholapuram River - 3.3km – W ➤ Solasserri River - 3.7km – W ➤ Karuva Nadi - 8.8km – SW ➤ Marugal Odai - 1.8km – NE. ➤ Nedunkulam Odai - 8.6km – NE
5	Nearest town/City	Rajapalayam – 13 km - NW
6	Nearest villages	Mettuvadakarai – 500m (S) side.
7	Hills / valleys	Nil within 10m radius
8	Notified Archaeologically important places, Monuments	Nil within 10m radius
9	Local Places of Historical and Tourism Interest	Nil within 10m radius
10	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10m radius
11	Reserved / Protected Forests	Nil within 10 km radius
12	Defence Installations	Nil within 10 km radius
13	Seismic Zone	Zone – II (Least Active)
14	Other Industries in the study area	Other than crushers, Roughstone quarries, Solar Panels, no other major industries are located in the study area.

3.2 SOCIO-ECONOMIC CONFIGURATIONS OF THE AREA:

3.2.1 GENERAL:

The Socio-Economic details of the study area are collected through:

- Identification of villages falling from the study area map with combined Taluk map.
- Collection of primary data through sample survey, village meetings and focused group discussion.
- Collection of the demographic pattern of villages falling in the area through NIC 2011 census data.
- Occupational structure of villages falling in the study area through NIC 2011 census data.
- Details of the amenities available in villages falling in the study area through NIC 2011 census data. The findings of the study are illustrated below:

3.2.2 SECONDARY DATA DESCRIPTION:

The proposed Rough stone, and gravel quarry is located in in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District. Based on 2011 census data, in the 10km radius there are 34 Rural villages from Five Taluks namely Rajapalayam, Srivilliputhur, Sivakasi, Sivagiri, and Sankarankoil and 2 urban areas of Rajapalayam Taluk namely Samusigapuram (CT), Sivakasi Taluk namely Alangulam (CT). The demographic profile of the study area is given below:

Table 3.3: Social, Economic and Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	89,852	49.90
Female Population	90,208	50.10
Total	180,060	100
B. Caste-wise population distribution		
Scheduled Caste	41483	23.04
Scheduled Tribes	311	0.17
Other	138,266	76.79
Total	180,060	100

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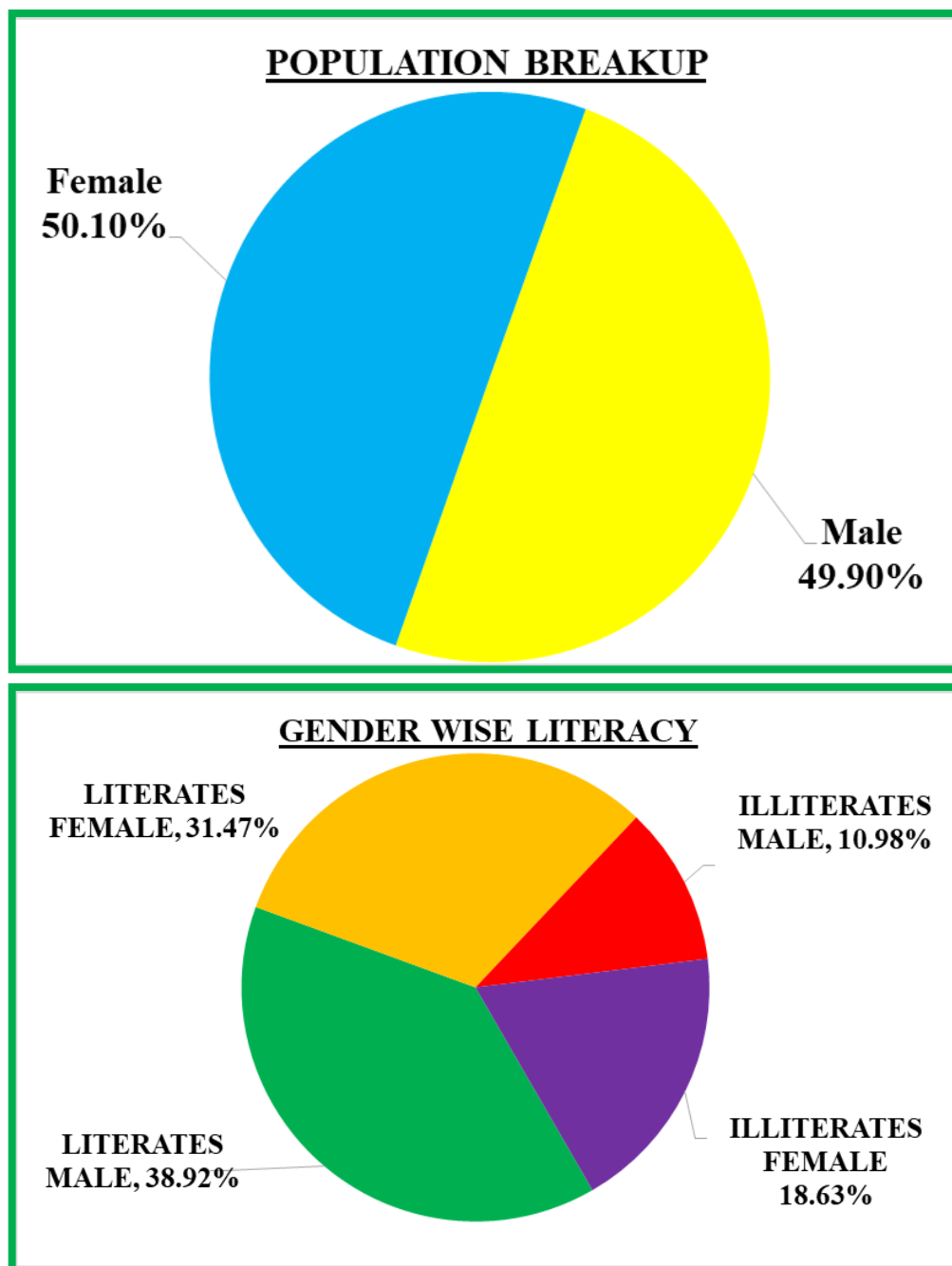
Details	Population	Percentage
C. Literate and Illiterate population		
Literate Males	70076	38.92
Literate Females	56671	31.47
Total Literate Population	126747	70.39
Others Males	19776	10.98
Others Females	33537	18.63
Others Population	53313	29.61
Total	180,060	100
D. Occupational structure		
Main workers	85582	47.53
Marginal workers	6873	3.82
Total Workers	92455	51.35
Total Non-workers	87605	48.65
Total	180,060	100

The total population of these 35 rural villages and 2 urban areas is 1,80,060 in which the male population is 89,852 (49.90%) and the female population is 90,208 (50.10%). This shows that the male and female population ratio is almost equal. Among the total population 0.17% belong to Scheduled Tribes, 23.04 % are Scheduled Caste and the balance 76.79 % people belong to other castes. Among the total population, 70.39% of the people are literate.

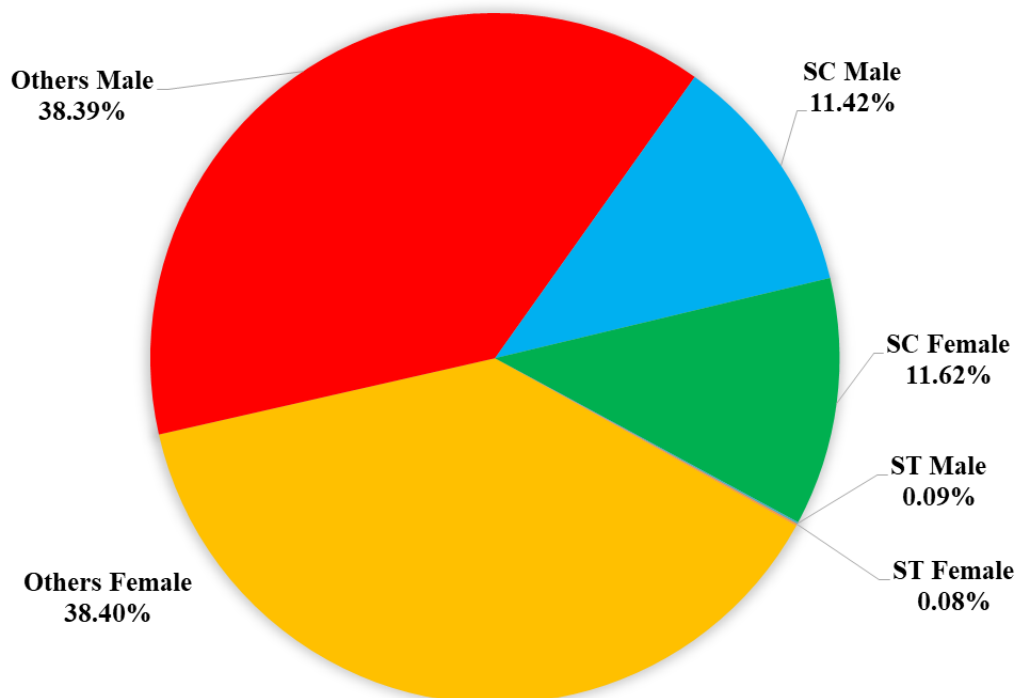
Among the total population, 38.92% are literate males and 31.47% are literate females. This shows that the male literates are slightly more than the female literates. Totally, the illiterate constitute 29.63% of which the female cover 18.63% and the male 10.98%. Illiteracy in women is more than in the male population.

The village wise population, literacy levels and occupational structure details area given in **Annexure-3 and 4**. The demographic structure within the buffer zone is shown diagrammatically in **Figure No – 3.2**.

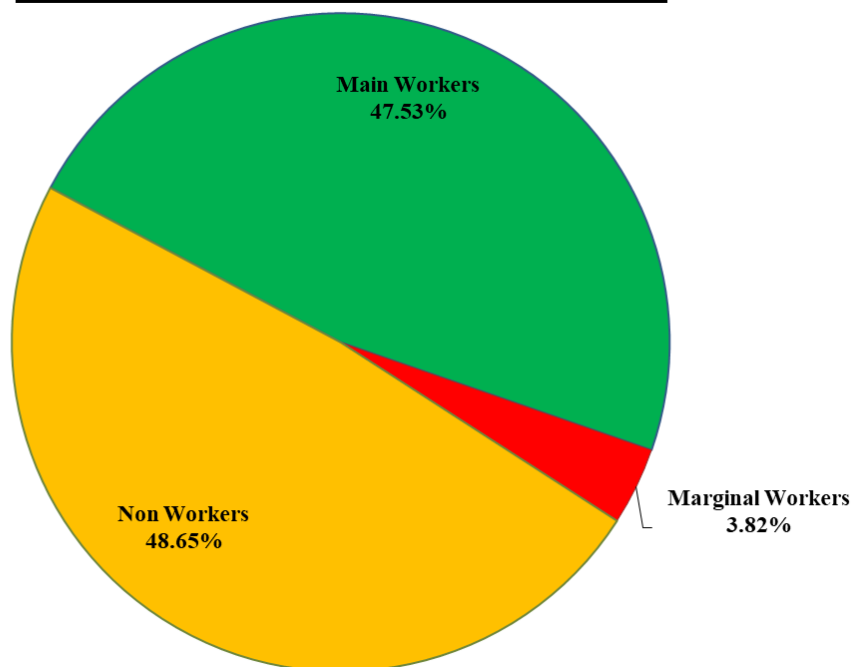
Figure 3.2: Demographic Structure in Buffer Zone



GENDER AND CASTE WISE DISTRIBUTION



OCCUPATIONAL STRUCTURE IN THE BUFFER



3.2.3 DETAILS OF AMENITIES:

Based on 2011 census data, regarding the educational facilities, there are totally 99 Primary Schools functioning in these 34 rural villages. Among them 6 villages have one primary school, 6 villages have 2 primary schools, 8 villages have 3 primary schools, 4 villages have 4 primary schools, 1 villages has 5 primary schools ,1 villages have 6 primary schools, 2 villages have 7 primary schools and 2 villages have 8 primary schools. One village has no primary school.

Table 3.4: Primary Schools in the Buffer Zone Rural Villages

S.No	No of Rural Villages	Number of primary schools	Totals
1	4	0	0
2	6	1	6
3	6	2	12
4	8	3	24
5	4	4	16
6	1	5	5
7	1	6	6
8	2	7	14
9	2	8	16
Total	34		99

Table 3.5: Education Facility Availability

PARTICULARS	Available in village
Govt Primary School	30
Govt Middle School	18
Govt Secondary School	10
Govt Senior Secondary School	7
Govt Arts and Science Degree College	0
Govt Engineering College	0
Govt Medicine College	0
Govt Management Institute	0
Govt Polytechnic	0
Govt Vocational Training School/ITI	0

Better and higher education facilities are available in nearby town like Ramalingapuram (CT), Samusigapuram (CT), Alangulam (CT) and Rajapalayam, Sivakasi city corporation.

Table 3.6: Healthcare Amenities Availability

PARTICULARS	Available in village
Community Health Centre	3
Primary Health Centre	8
Primary Health Sub Centre	27
Maternity And Child Welfare Centre	11
TB Clinic	8
Hospital Allopathic	0
Hospital Alternative Medicine	0
Dispensary	8
Veterinary Hospital	8
Mobile Health Clinic	0
Family Welfare Centre	8

Better medical facilities are available in Ramalingapuram (CT) ,Samusigapuram (CT), Alangulam (CT) and Rajapalayam ,Sivakasi city corporation.

Table 3.7: Infrastructure Facilities

Particulars	Available in village
Tap Water-Treated	34
Covered Well	12
Hand Pump	18
Tube Wells/Borehole	28
Spring	5
River/Canal	4
Post office	5
bus services	30
Commercial Bank	6
Cooperative bank	10

The details of the educational, medical and infrastructural facilities available in the buffer zone is provided in **Annexures- 5-7**.

3.2.4 SAMPLE SURVEY:

3.2.4.1 OBJECTIVE:

The objective of the study is to understand the present socio-economic condition, availability of existing infrastructure facilities in the area & to know the needs of the people in the project peripheral villages, to provide an implementable future CER proposal pertaining to specific needs addressing local requirements.

3.2.4.2 APPROACH:

Oral interview, and informal discussions were conducted in the villages to capture the overall scenario of the village including their socio-economic problems and the aspirations, desires of the community in overall terms.

Salient details of the study are given below:

Studied villages have different community people which include different religion and different castes.

- Majority of the people are small farmers and others are working in the nearby industries
- Predominantly the study area is seasonal dry, barren land.
- Crops such as red chilli, Paruththi, Valzhai, Agatthi, Kaththari, etc. are cultivated in patches based on water availability.
- Since agriculture is predominantly rainfed and the water is available only for four months, during the rest of the time they have less employment opportunities. Other occupations include construction workers, vendors, etc.
- Other allied activities livestock rearing and poultry farming are also found.
- Reasonably better amenities like approach road bus facility, electricity, mobile phone connectivity, Public Distribution System , banks etc are available.
- Bore well is the main source for drinking water. There are OHT's, Ground level tanks, public taps are available .

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VSC Gopalapuram



Water Tank - Gopalapuram



Water Tank - Kurachiyarpatti

3.3 EXISTING ENVIRONMENTAL QUALITY

3.3.1 MICRO-METEOROLOGY

3.3.1.1 General:

The meteorological conditions in an area regulate the dispersion of air pollutants being released into the atmosphere. The principal variables are horizontal convective transport i.e. wind speed and direction and vertical convective transport, i.e. mixing height, stability class and topography of the area.

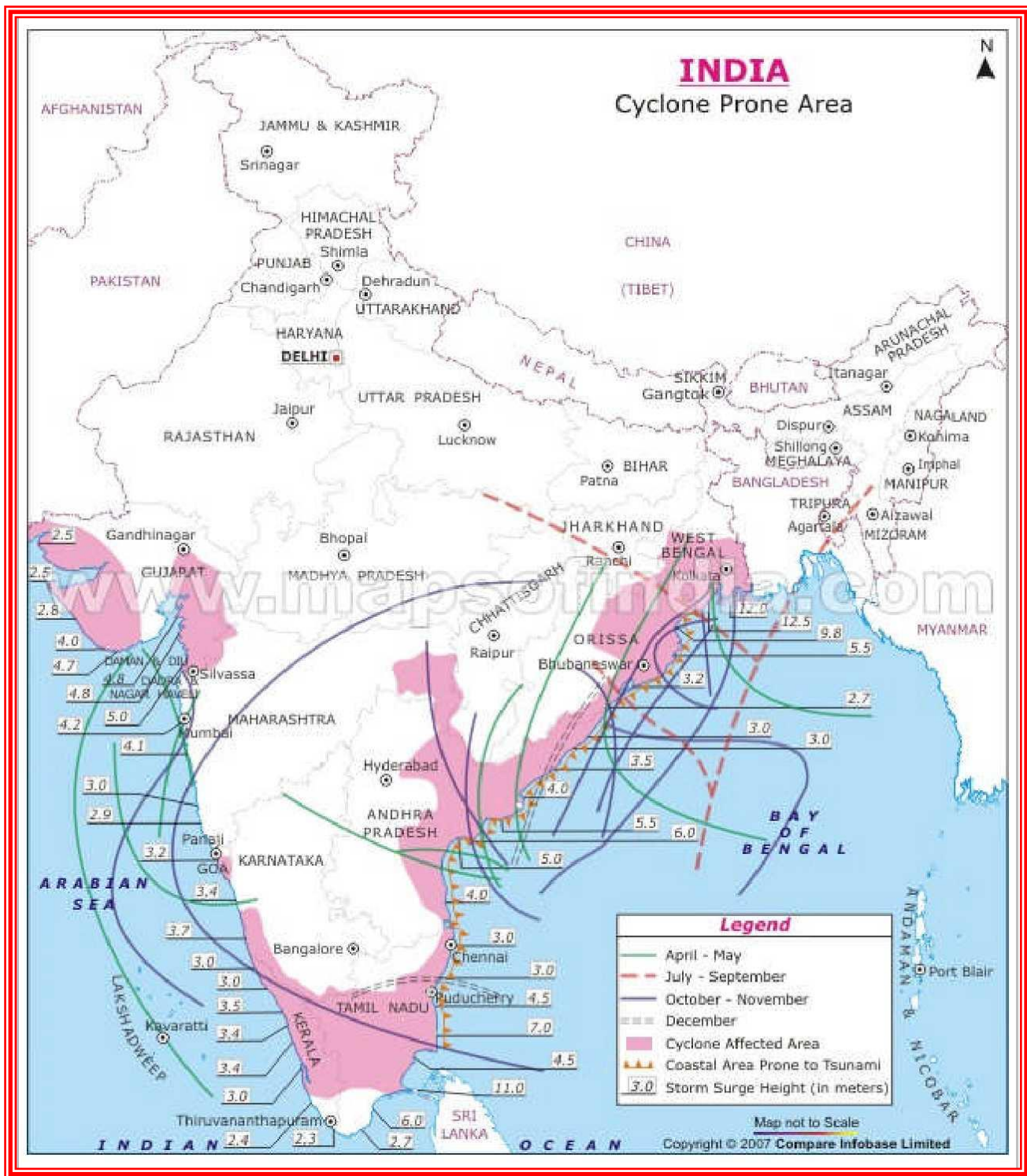
3.3.1.2 Historical Meteorological Data:

A. Cyclones And Depressions

Cyclonic storms and depressions in Bay of Bengal affect the East Coast of India. Isolated ones, forming in January to March in the South Bay of Bengal move West-North-westwards and hit Tamil Nadu coast. In April and May, cyclonic storms and depressions form in the South and adjoining Central Bay and move initially to the Northwest, then North and then recurve to the Northeast striking the Arakan coasts in April and Andhra Pradesh (AP)-Orissa-West Bengal (WB) – Bangladesh coasts in May. Most of the monsoon (June – September) storms develop in the central and in the north bay and move west – north - westwards affecting AP – Orissa – WB coasts. Post monsoon (October – December) storms form mostly in the south and central Bay, recurve between 150 and 180 N affecting Tamil Nadu – AP – Orissa – WB – Bangladesh coasts. Figure No - 3.3 depicts the history of cyclonic storms, which have struck the Indian coast during the months of October, November and December during the last 75 years. (Source: Vulnerability Atlas of India series, above figure accessed from www.maps of india.com). East coast is prone to cyclonic storms round the year but mostly these occur prior to SW i.e., in May and after SW monsoon i.e., in October and November.

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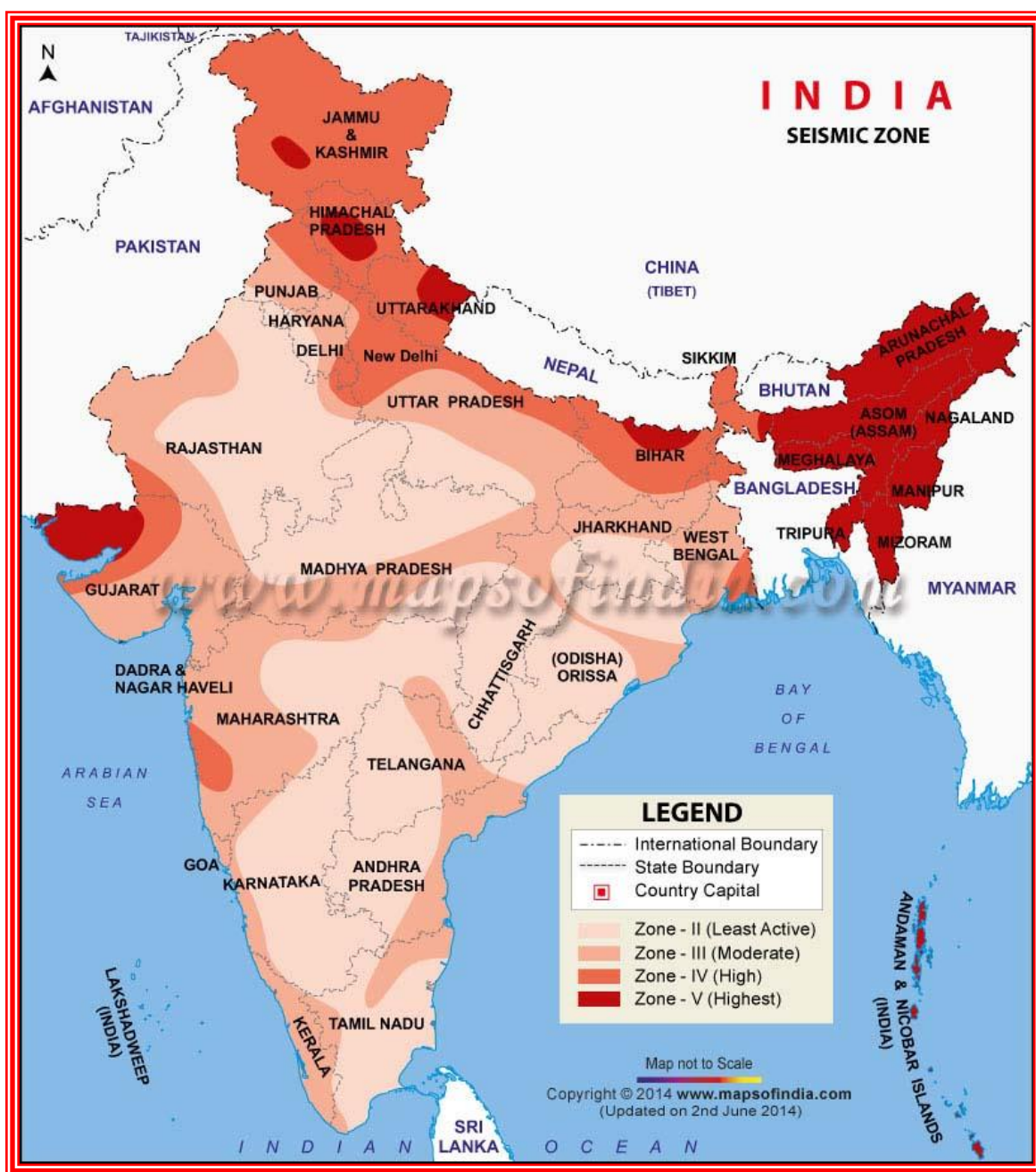
Figure 3.3: History of Cyclonic Storms



B. SEISMIC DATA

From the seismic zone map of India as depicted in the **Figure No - 3.4**, it can be seen that the project site and study area falls in the Zone – II and is described as least active zone.

Figure 3.4: Seismic Zone Map of India



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C. Climate and Rainfall Data:

Temperature: From the middle of February, temperature increases steadily. The weather is quite hot in May and June and the maximum temperature sometimes reaches 40°Celsius. With the onset of the southwest monsoon by the end of May or beginning of June, there is some drop in temperature.

Cloudiness: During the months of April and May, the skies become heavily clouded and threatening in the afternoons on many days when thunderstorms follow. In the southwest and northeast monsoon seasons, the sky is heavily clouded or overcast.

Winds: Generally light to moderate in strength and NW-SW and vice-versa. Between May and September winds are mainly north westerly or westerly. From October to February winds are mainly north easterly or northerly.

Rainfall: Main rainy season is from October to the middle of January. November is generally the rainiest month. The average annual rainfall data from 2011 – 2020 is given in Table No – 3.8.

Rainfall data collected by Virudhu Nagar , IMD station for the period of 2011 to 2020 is given in **Table No.3.8** Rainfall histograms are presented in **Figure No - 3.5 and 3.6.**

Table 3.8: Average Annual Rainfall Data (2011-2020)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Rainfall
2011	85.49	162.8	109.57	201.3	119.75	392.46	313.13	227.99	199.02	146.11	190.62	197.52	2345.76
2012	16.29	18.37	76.82	297.85	81.31	192.98	223.09	287.28	155.75	234.49	127.34	14.38	1725.95
2013	10.22	43.85	46.9	14.44	27.26	15.48	2.4	115.17	43.3	118.37	68.61	84.27	590.27
2014	11.2	2.25	7.42	14.03	187.33	9.68	9	78.69	65.2	217.23	146.17	55.08	803.28
2015	4.45	3.43	31.39	95.62	114.89	17.83	28.19	53.96	84.73	103.78	279.24	140.03	957.54
2016	0.24	0.03	1.71	5.88	85.2	16.88	69.79	39.75	47.21	66.65	49.6	60.33	443.27
2017	20.72	2.81	15.1	3.18	32.84	7.88	27.54	42.11	62.59	40.74	42.35	17	314.86
2018	0.74	1.28	11.62	21.13	66.02	14.49	33.67	41.94	47.92	134.91	68.92	7.28	449.92
2019	5.08	2.26	3.23	2.33	4.5	17.83	18.5	71.16	163.58	251.1	109.63	88.91	738.11
2020	3.87	0.48	0.11	24.2	69.81	32.41	40.51	45.93	94.14	138.83	241.45	139.88	831.62
NORMAL	18.5	23.5	37.6	76.8	60.2	18.3	31.1	51.6	80.8	191	175.5	64.7	829.6

Source – Virudhunagar District, IMD



Figure 3.5: Total Rainfall

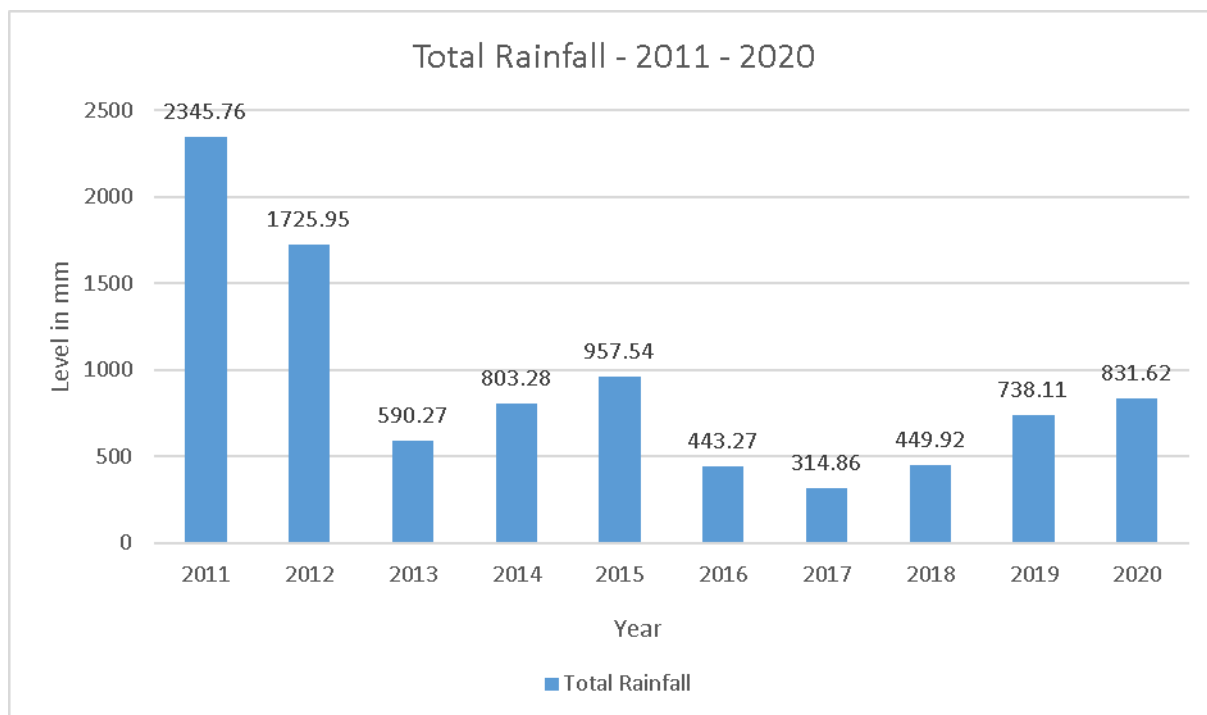
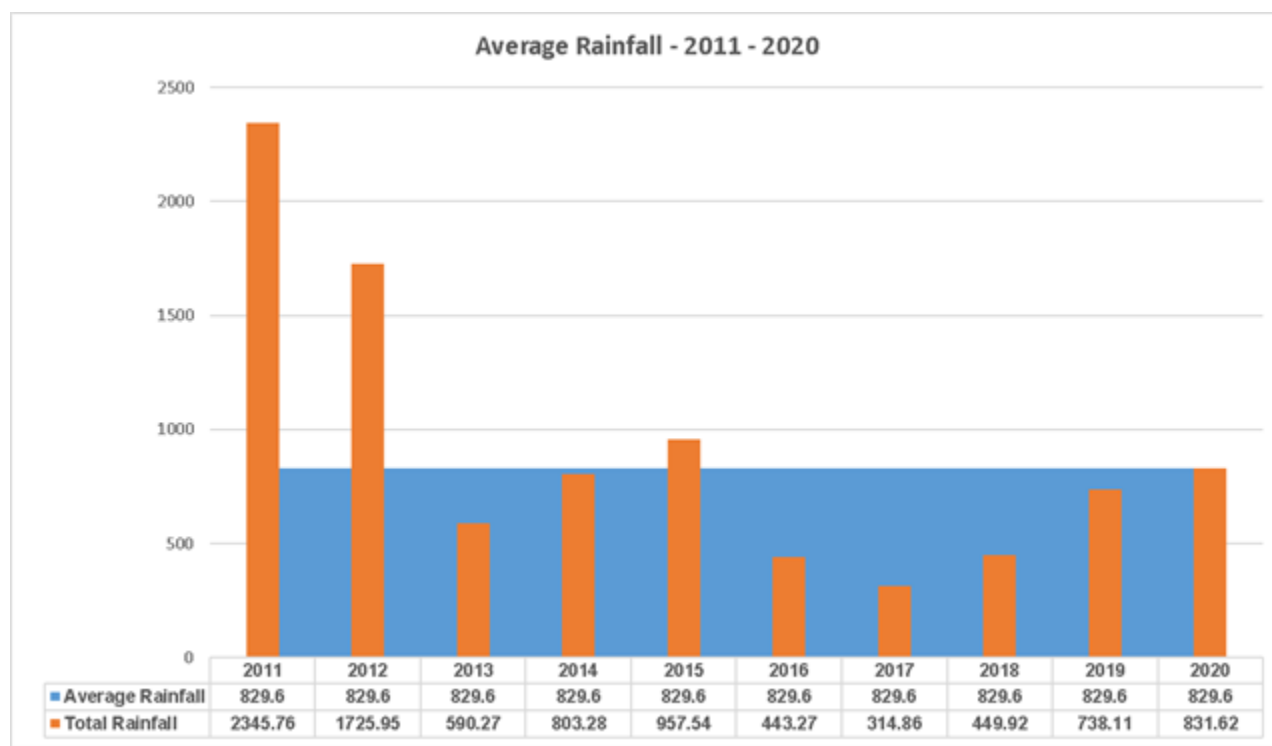


Figure 3.6: Average Annual Rainfall



3.3.1.3 SITE SPECIFIC METEOROLOGICAL DATA:

Micrometeorology and microclimatic parameters were recorded by installing a weather monitoring station near mine lease area. Data of wind velocity, wind direction, ambient temperature, relative humidity, were recorded throughout the monitoring period.

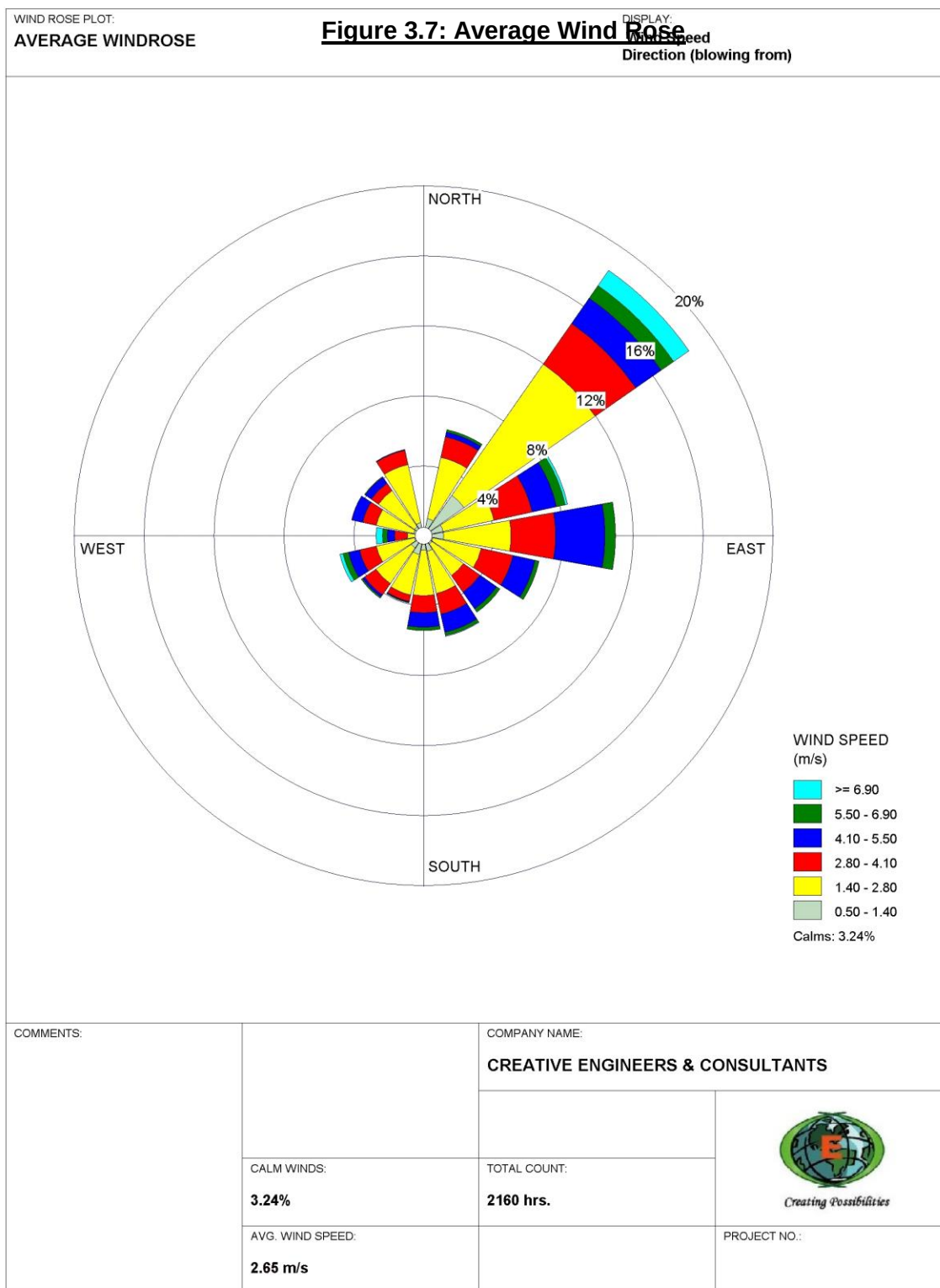
DATA ANALYSIS:

The temperature in the area during the study period ranged from 22.0°C to 39.0°C while the relative humidity varied between 19.7 - 97%. The wind speed during the study period ranged from <1.8 to 37.1 km/h. The predominant wind direction is from NE. The meteorological data are presented in **Table no – 3.9**. The average wind rose is depicted in **Figure No - 3.7**.

Table 3.9: Meteorological Data

Season: Summer Season, March 2025 to May 2025)			
S.NO	PARAMETERS	MIN	MAX
1	Temperature In °c	22.0	39.0
2	Humidity in %	19.7	97.0
3	Wind speed in km/hr	<1.8	37.1
4	Predominant wind direction from	NE	

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3.3.2 AMBIENT AIR QUALITY (AAQ):

Ambient Air quality has been assessed through a network of 6 ambient air quality stations. The following methodology has been considered for design of ambient air quality monitoring network in the area. Based on these criteria, 6 numbers of air sampling stations were selected in the area as shown below in Table No.3.10.

- ❖ Topography / terrain of study area.
- ❖ Populated areas within study area.
- ❖ Residential /sensitive areas within study area.
- ❖ Magnitude of surrounding industries.
- ❖ Representation of regional background levels.
- ❖ Representation of cross sectional distribution in down wind direction.
- ❖ Predominant wind direction and wind pattern.

Table 3.10: Air Quality Monitoring

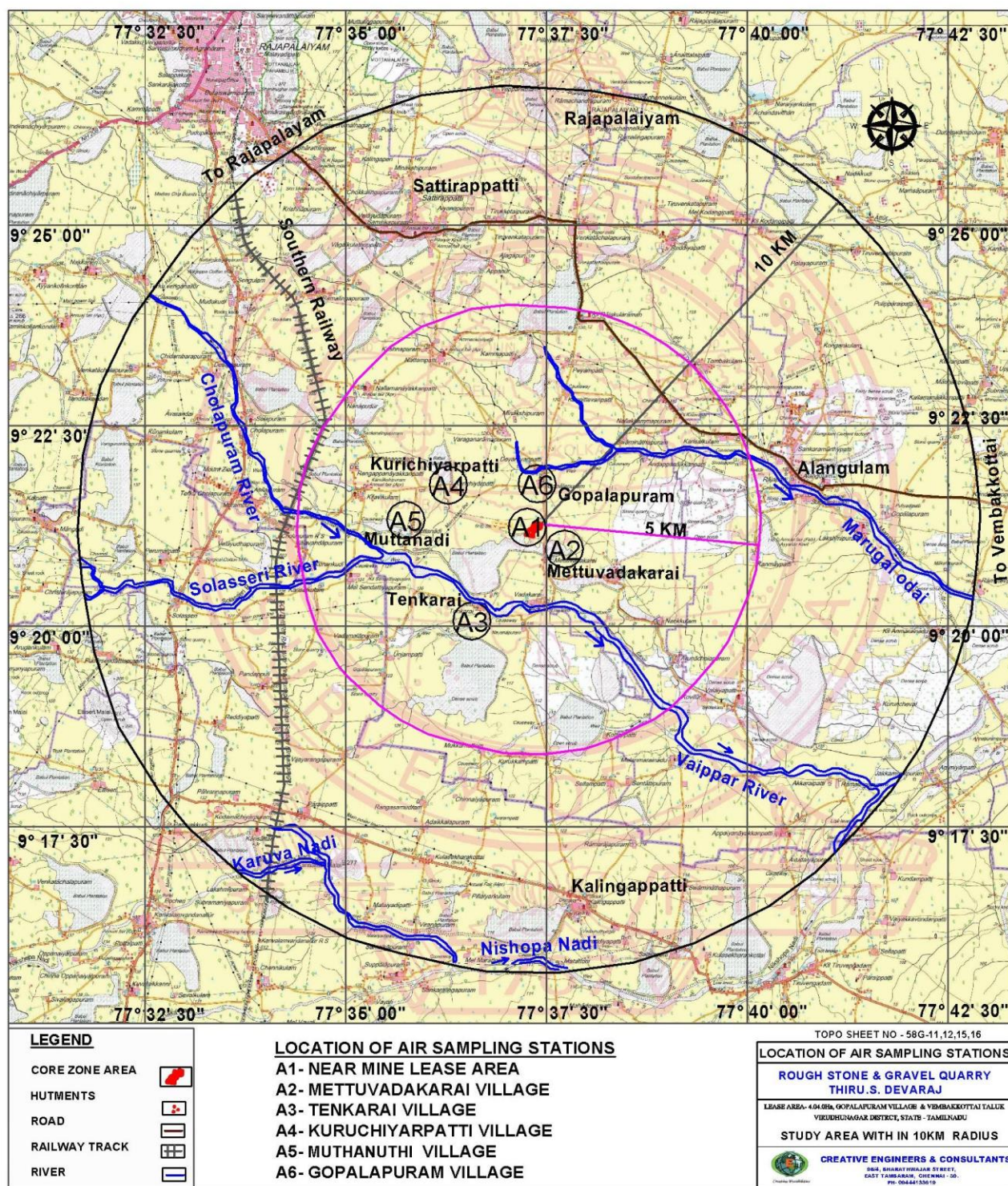
1.	Monitoring Period	Summer Season (Mar 2025 – May 2025)
2.	Monitoring Location	The location map showing Ambient Air Quality study stations are shown in Figure No- 3.9 .
3.	Methodology	
	Parameter	Protocol
	a. Particulate Matter (PM10)	Gravimetric (IS 5182: Part 23:2017)
	b. Particulate Matter PM2.5	Gravimetric (IS 5182: Part 24:2019)
	c. Sulphur Dioxide	Colorimetric (West & Gaeke Method) (IS 5182: Part 02: 2017)
	d. Nitrogen Dioxide	Colorimetric(Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2017)
	e. Carbon Monoxide	CO Monitor
4.	f. Silica	Colorimetric (Molybdate Method) NIOSH 7601 -2003
	Monitoring Frequency	2 days in a week, 4 weeks in a month for 3 months in a season.

Table 3.11: Air Quality Monitoring Locations

S.NO	LOCATION CODE	LOCATION	DISTANCE FROM CORE ZONE (KM)	DIRECTION
1	A1	Near Mine Lease Area	-	-
2	A2	Mettu Vadakarai Village	550m	SE
3	A3	Tenkarai Village	1.9km	SW
4	A4	Kuruchiyarpatti Village	1.9km	NW
5	A5	Muthanuthi Village	2.6km	W
6	A6	Gopalapuram Village	8.6km	N

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Figure 3.8: Ambient Air Quality Study Stations



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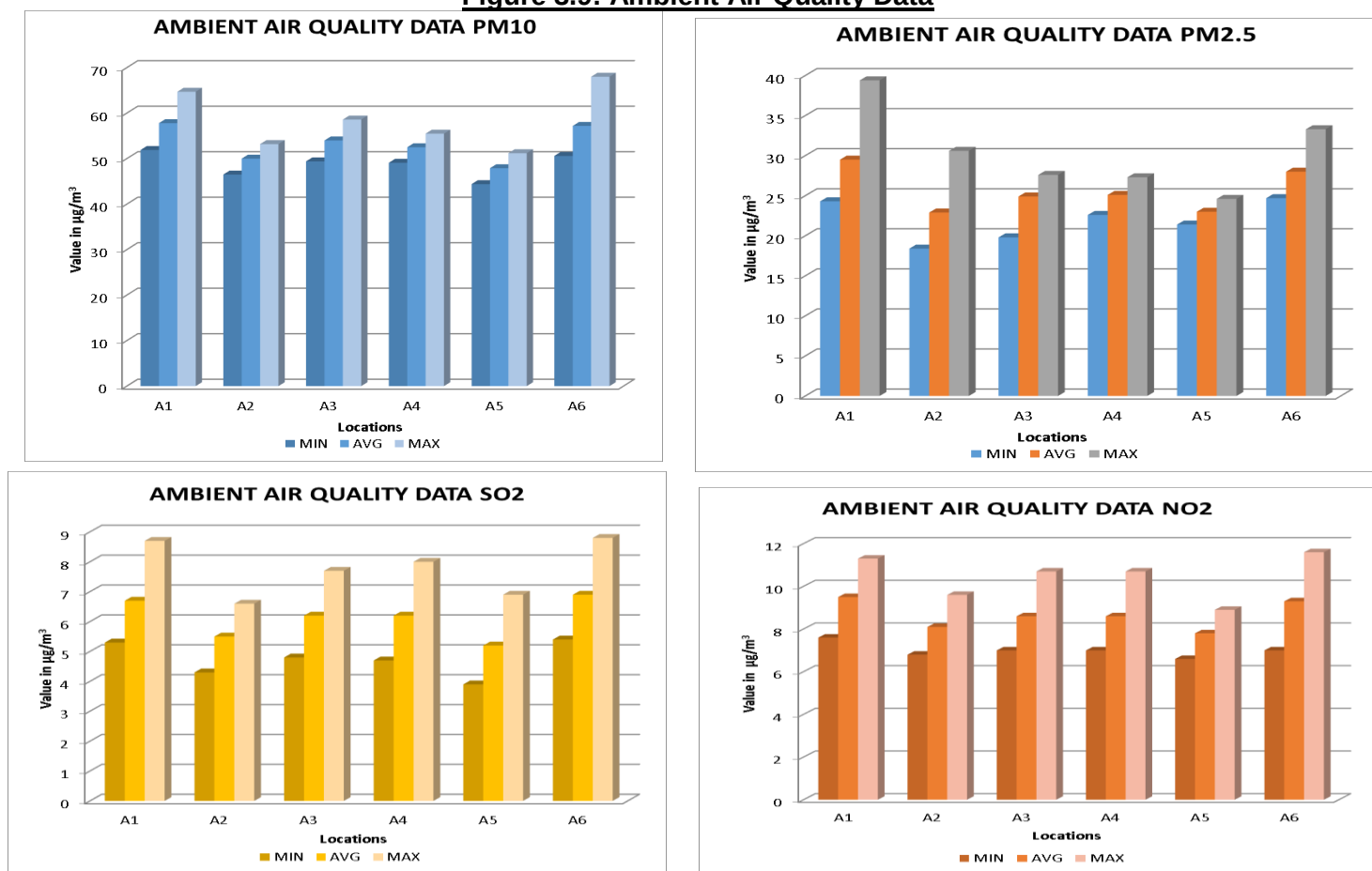
Table 3.12: Ambient Air Quality Data

All Value in $\mu\text{g}/\text{m}^3$

PARAMETERS	Cat.*	PM ₁₀			PM _{2.5}			SO ₂			NO ₂		
LOCATIONS		MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX
A1-Near Mine Lease Area	I	51.9	57.8	64.7	24.3	29.5	39.4	5.3	6.7	8.7	7.6	9.5	11.3
A2-Mettu Vadakarai Village	R	46.5	50	53.2	18.4	22.9	30.6	4.3	5.5	6.6	6.8	8.1	9.6
A3-Tenkarai Village	R	49.4	54	58.6	19.8	24.9	27.6	4.8	6.2	7.7	7	8.6	10.7
A4-Kuruchiarpatti Village	R	49.1	52.5	55.5	22.6	25.1	27.3	4.7	6.2	8	7	8.6	10.7
A5-Muthanuthi Village	R	44.4	47.9	51.2	21.4	23	24.6	3.9	5.2	6.9	6.6	7.8	8.9
A6-Gopalapuram Village	R	50.6	57.2	68.0	24.7	28	33.3	5.4	6.9	8.8	7	9.3	11.6
NAAQ Limits		PM ₁₀			PM _{2.5}			SO ₂			NO ₂		
	*	100			60			80			80		
	**	100			60			80			80		

***Note:** Category: * - Industrial, Residential, Rural and other area, ** – Ecologically Sensitive Area (notified by Central Government)

Figure 3.9: Ambient Air Quality Data



3.3.2.1 Results and Discussion:

The AAQ monitored data for all locations for above parameters are shown in **Table No - 3.12** and in **Figure No - 3.9**. Ambient Air Quality data during the study period is given in **Annexure – 9**. From the table it is seen that, in the ambient air, the PM₁₀ values were in the range of 44.4-68.0 µg/m³. PM_{2.5} values were in the range of 18.4-39.4 µg/m³. SO₂ levels were ranging from 3.9– 8.8 µg/m³. NO₂ levels were ranging from 6.6-11.6 µg/m³.

The existing Ambient Air Quality levels for PM₁₀, PM_{2.5}, SO₂ and NO₂, are within the NAAQ standards prescribed CPCB limits of 100 µg/m³, 60 µg/m³, 80 µg/m³ & 80 µg/m³. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m³)

3.3.3 WATER ENVIRONMENT:

Assessment of baseline data on water environment includes Identification of water resources, Collection of water samples and Analyzing water samples collected for physico-chemical parameters as per standards. The water sampling was carried out for 6 locations. Details of the same has been provided below:

Table 3.13: Water Quality Monitoring

1.	Monitoring Period		Summer Season (Mar 2025 – May 2025)		
2.	Monitoring Location		The location map showing water sampling locations are given in Figure No.3.11 .		
	Code	Location	Sample Type	Distance	Direction
	W1	Near Mine Lease Area	Bore Well	-	-
	W2	Mettu Vadakarai	Tap Water*	550m	SE
	W3	Tenkarai	Borewell	1.9km	SW
	W4	Kuruchiyarpatti	Borewell	1.9km	NW
	W5	Muthanuthi	Borewell	2.6km	W
	W6	Gopalapuram	Borewell	8.6km	N
3.	Methodology		Sampling - IS 3025 Part - I		
			Analysis – IS 3025 relevant parts / APHA 23rd Edition		

*Since bore well water in mettu vadakara and in some other parts are not directly potable, tap water is also sampled.

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Figure 3.10: Location of Water Sampling Stations

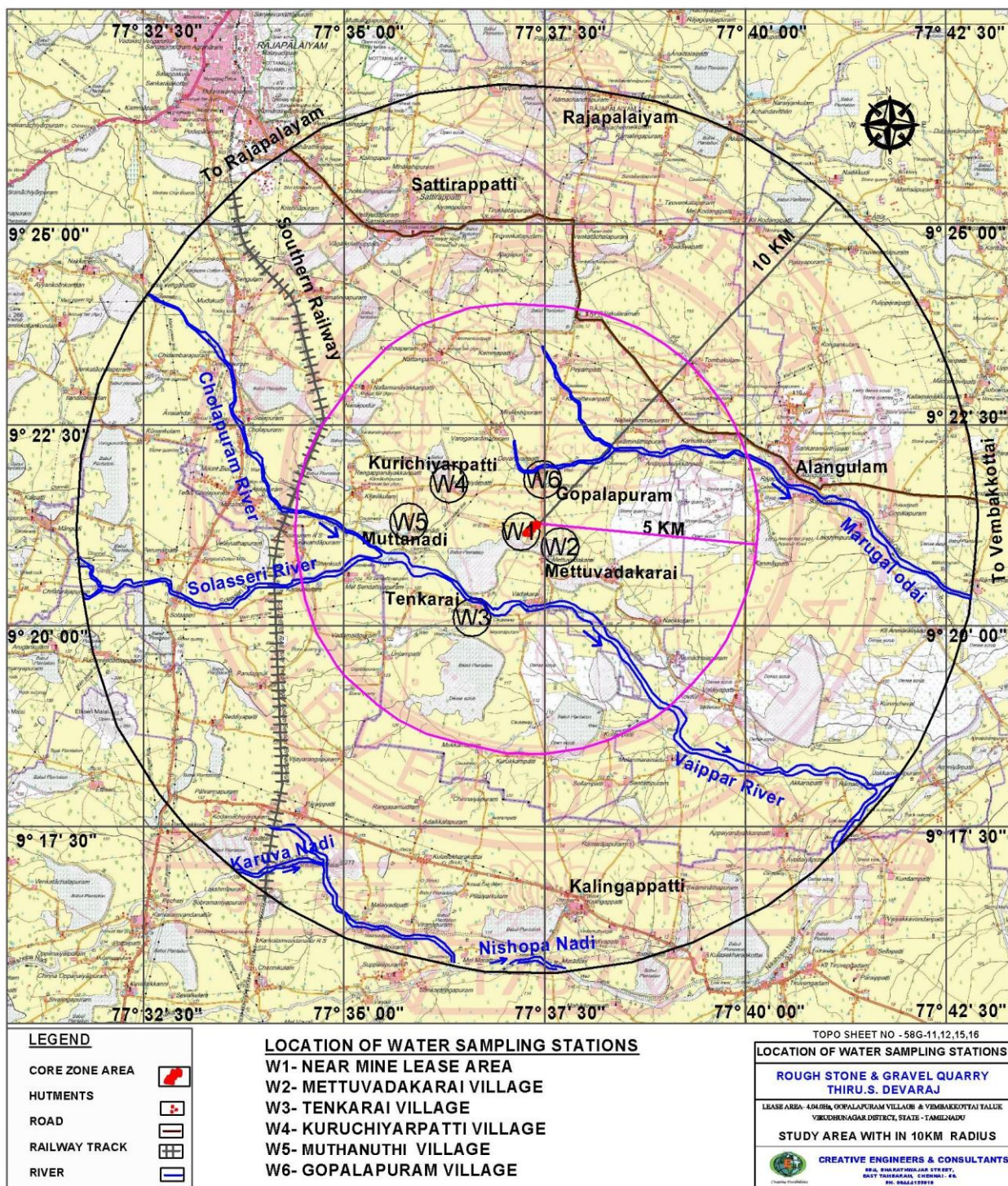


Table 3.14: Summary of Water Quality Data

Season	Summer Season (Mar 2025 – May 2025)	
Monitoring Locations	6 locations	
Parameters	Range of values	Limits*
pH at 25 °C	7.24 – 7.72	6.5-8.5
Total Dissolved Solids, mg/L	250 – 590	2000
Chloride as Cl-, mg/L	22.3 – 102	1000
Total Hardness (as CaCO ₃), mg/L	184 – 312	600
Total Alkalinity (as CaCO ₃), mg/L	125– 292	600
Sulphates as SO ₄ ²⁻ , mg/L	12.1 – 186	400
Iron as Fe, mg/L	0.03 – 0.07	0.3
Nitrate as NO ₃ , mg/L	2.34 – 7.21	45
Fluoride as F, mg/L	0.22 – 0.63	1.5

3.3.3.1 Results and Discussion:

The results of the water sample analysis are shown in **Table No - 3.14**. The pH values were ranging in between 7.24 – 7.72 TDS values were in the range of 250 – 590mg/L. Chloride values were ranging from 22.3 – 102mg/L. Iron content was found to be in the range 0.03 – 0.07mg/L. The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications. The water quality data is provided in **Annexure-10**.

3.3.4 NOISE ENVIRONMENT:

Opearional phase of this project may lead to increase noise levels from the existing levels at least in and around the project area. As noise level beyond permissible limits will cause adverse impacts on the environment, it has become imperative to assess the noise levels in and around the mine area. Noise level measurements were taken at the 6 locations during the monitoring period. Details of the same are provided below:

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Table 3.15: Noise Level Monitoring

1.	Monitoring Period	Summer Season (Mar 2025 – May 2025)		
2.	Monitoring Location	The location map showing noise monitoring locations are given in Figure No.3.12.		
	Code	Location	Distance	Direction
	N1	Near Mine Lease Area	-	-
	N2	Mettu Vadakarai	550m	SE
	N3	Tenkarai	1.9km	SW
	N4	Kuruchiyarpatti	1.9km	NW
	N5	Muthanuthi	2.6km	W
	N6	Gopalapuram	8.6km	N
3.	Methodology	Noise levels were measured using sound level meter manufactured by (Model No - SL- 4001, Make - Lutron). Sound Pressure Level (SPL) measurements were measured at all locations where ambient air quality monitored; one reading for every hour was taken for 24 hours.		
4.	Monitoring Frequency	Once during monitoring period		

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Figure 3.11: Location of Noise Sampling Stations

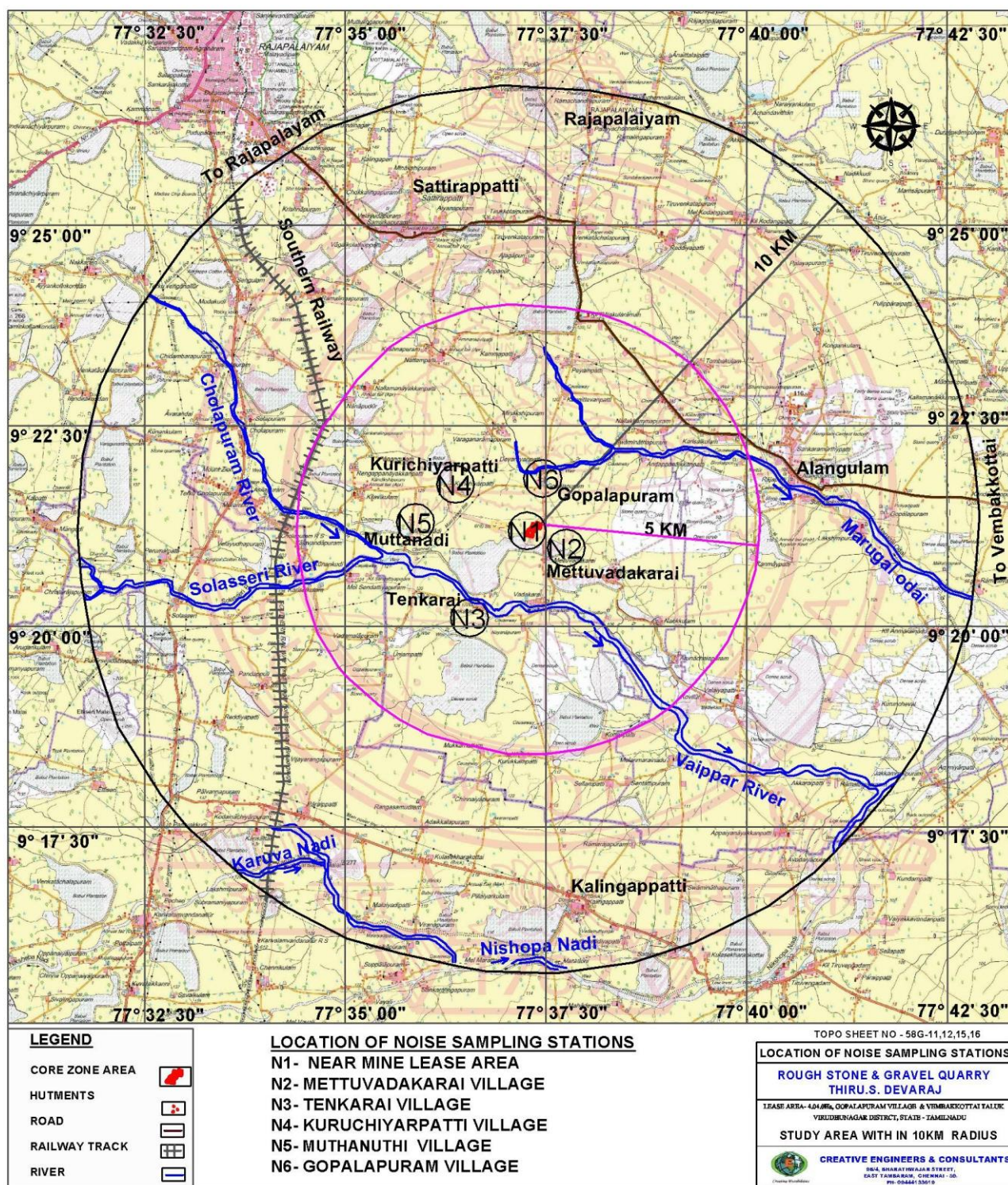
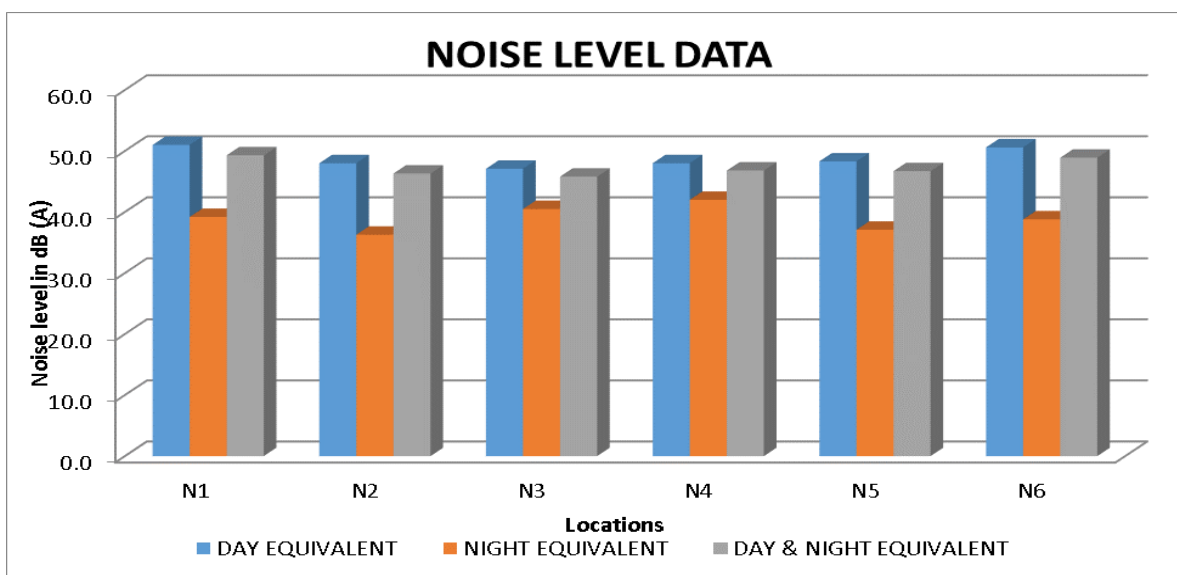


Table No – 3.15: Ambient Noise Level in dB (A)

Date and time of monitoring	N1	N2	N3	N4	N5	N6
Day Equivalent	51.0	48.0	47.1	48.0	48.3	50.6
Night Equivalent	39.2	36.3	40.5	42.0	37.1	38.8
Day & Night Equivalent	49.3	46.3	45.8	46.8	46.7	48.9
Limits: As per CPCB: Work zone Exposure in 8 hr - 90 dB(A)						
As per MoEF&CC: Residential: Day equivalent - 55 dB(A); Night equivalent - 45 dB(A)						

Figure 3.12: Noise Level Data



3.3.4.1 Results and Discussion:

The results of noise levels for all locations are given in **Table No-3.15**. The noise values for all above locations are shown in a comparative chart given in **Figure No - 3.13**. In the buffer zone, day Equivalent Noise (Leq-d) noise levels were ranging from 47.1 dB(A) to 51.0 dB(A) and night Equivalent Noise (Leq-d) levels ranged between 36.3 dB(A) to 42.0 dB(A). While comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.

3.3.5 SOIL CHARACTERISTICS:

Soil samples were collected in 3 locations in the core and buffer zone to analyse the physiochemical characteristics of the soil in the area. Elaborate details of the same has been provided below.

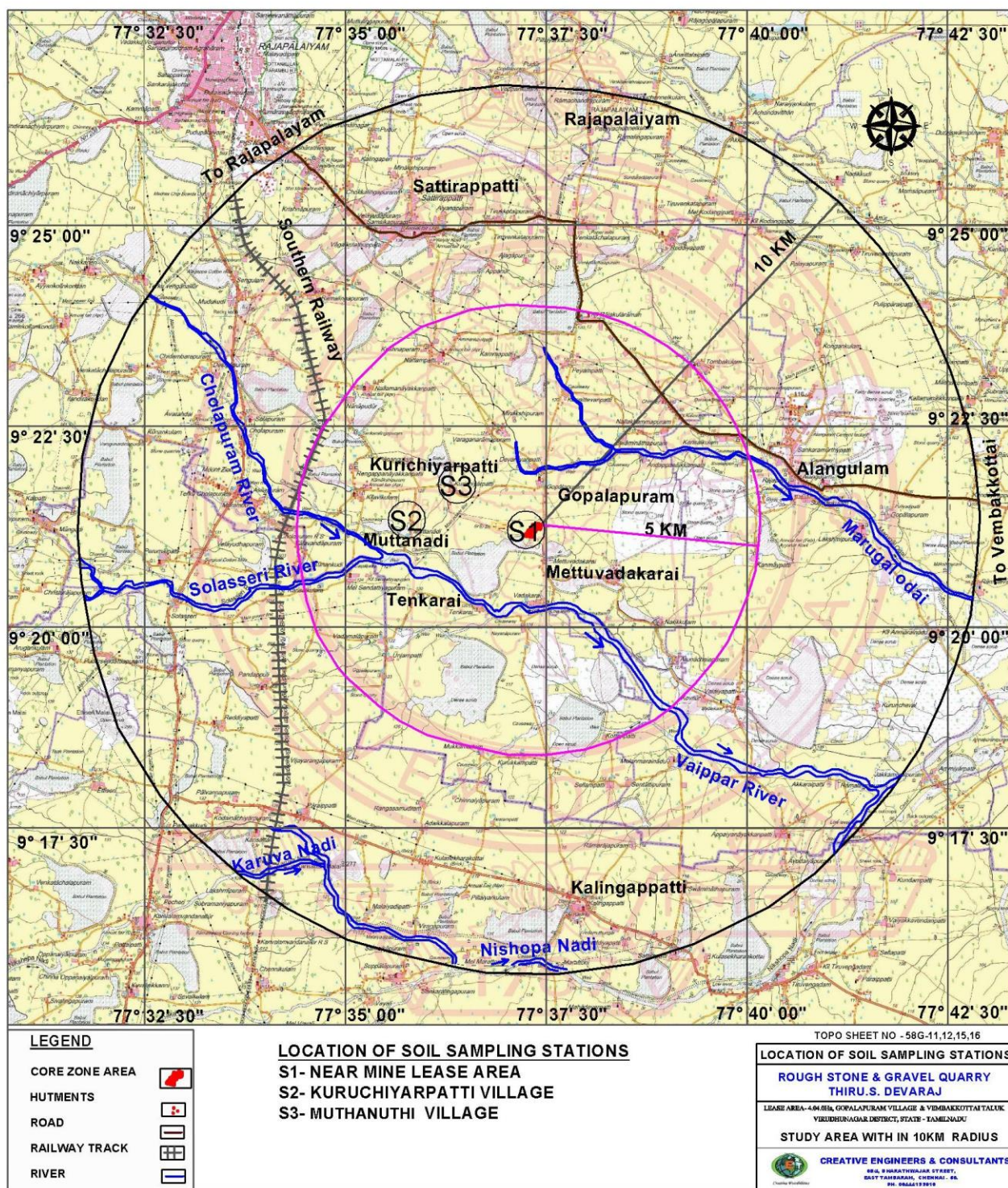
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Table 3.16: Soil Quality Monitoring

1.	Monitoring Period	Summer Season (Mar 2025 – May 2025)		
2.	Monitoring Location	The location map showing soil sampling locations are given in Figure No.3.14.		
	Code	Location	Distance	Direction
	S1	Near Mine Lease Area	-	-
	S2	Muthanuthi Village	2.6km	W
	S3	Kuruchiarpatti Village	1.9km	NW
3.	Methodology	Composite soil samples using sampling augers and field capacity apparatus.		
4.	Monitoring Frequency	Once during monitoring period		

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Figure 3.13: Location of Soil Sampling Stations



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Table 3.17: Soil Quality Data

S.No	Parameters	Unit	S1	S2	S3
1	pH at 25°C	-	6.58	6.71	7.57
2	Electrical Conductivity	(µmhos/cm)	106.5	101.3	89.74
3	Dry matter content	%	97.32	95.86	99.54
4	Water Content	%	2.68	4.14	0.46
5	Organic Matter	%	2.92	2.54	3.12
6	Soil texture	-	Clay Loam	Sandy Clay Loam	Clay Loam
7	Grain Size Distribution i. Sand	%	38.92	48.16	24.78
8	ii. Silt	%	33.54	17.96	43.44
9	iii. Clay	%	27.54	33.88	31.78
10	Phosphorous	µg/g	2.9	3.5	2.2
11	Sodium	mg/kg	1036	765	975
12	Potassium	mg/kg	775	570	665
13	Total Nitrogen	mg/kg	842	606	1125
14	Total Sulphur	%	BDL(D.L - 0.02)	BDL(D.L - 0.02)	BDL(D.L - 0.02)

3.3.5.1 Results and Discussion:

Results of the soil samples show that the pH values were ranging between 6.58 to 7.57 and Electrical Conductivity values were ranging between 89.74 – 106.5 µmhos/cm. Soils are generally silt loam and loam type. Organic matter values were ranging between 2.54 – 3.12 %.

Total Nitrogen values were ranging between 606 - 1125 mg/kg. Phosphorus values were ranging between 2.2 – 3.5µg/g. Potassium values were ranging between 570 -775 mg/kg. Sodium values were ranging between 765 -1036 mg/kg. Total Sulphur values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in **Table No – 3.16.**

3.4 LAND ENVIRONMENT - LANDUSE & LAND COVER

For preparing an impact statement, aspects of the land conditions are covered under land use. An industrial project / mine can cause changes in land use, soil process in different intensities depending upon the size of the project and distance involved between the industries and the area. Here, land use status for a radius of 10 km has been studied.

3.4.1 DATA USED AND METHODOLOGY

For the present study on land use pattern of buffer area around the proposed stone and gravel quarry, an archived historical data of Landsat 8 data shas been used as base data acquired on May 2025 (Figure No.3.13) has been used to generate the require landuse map showing their spatial pattern within the buffer area. The table showing data used for generation of information on landuse and subsequent GIS analysis is given below

Table 3.18: RS satellite image used for the present study

S.No	Type of Data	Date	Generated Map
1.	Landsat 8	May 2025	Landuse (LU) Map showing 10 Km around the ML area

Interpretation of satellite image requires understanding of relationship between image elements and their respective terrain elements. Since, in the present study, the landuse information is obtained using visual interpretation, an interpretation key is generated. The image elements such as color, tone, texture, size, shape and associated elements have been used to delineate various landuse categories. The landuse categorization and nomenclature used in the present study is based on the national level landuse classification system, which is adopted for the entire country as recommended by National Remote Sensing Centre (NRSC), Department of Space, Government of India.

Figure 3.14 : Landsat 8 Satellite Data of the Study Area

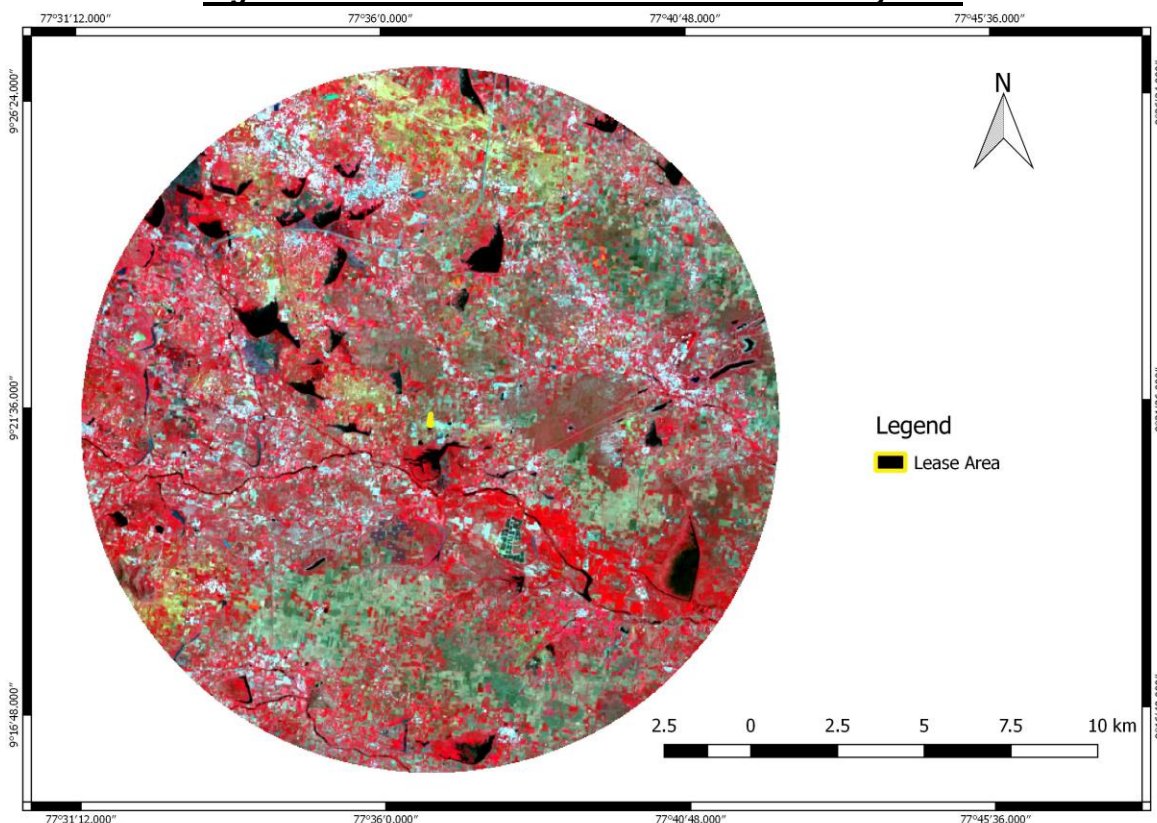


Table 3.19: Major Landuse Units of the Study Area

S.No	Major Category	Landuse unit
1	Built-Up Land	Village, Town, Industrial / Vacant Area
2	Agricultural Land	Crop Land Fallow Land Plantation Farm Land
3	Forest Land	Open Scrub Forest
4	Waste Land Mining Area	Land With Scrub/ Land Without Scrub Barren Rocky/ Stony Waste Quarries / Abandoned Quarries
5	Waterbodies	Tanks/ Rivers / Streams

Such LandUse and Land cover (LULC) categories have been verified using field check and identified sample sites within the buffer area, verified on field and transferred into gis geo-coordinates using observation coordinates received from hand held GPS (global positioning system) instrument. Thus, an interpreted final landuse map has been generated (Figure No. 3.14) using above such elaborate procedure and transformed into GIS environment for its spatial distribution and area estimation. Spatial nature and extent of various landuse categories within the buffer area is discussed is given below:

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Figure 3.15: Map Showing Land Use Categories around 10km Buffer

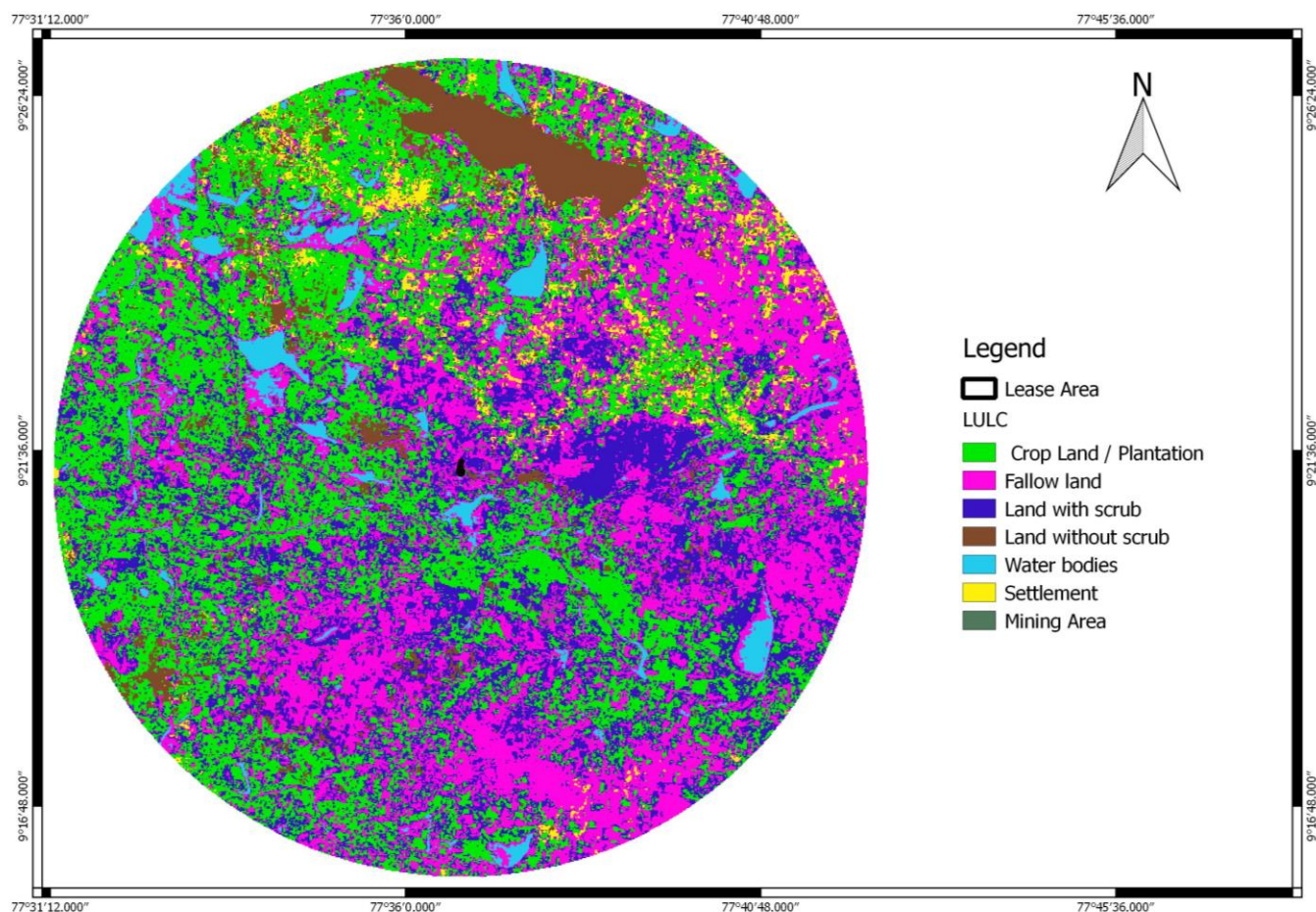


Table 3.20: Area Estimation of Landuse Categories in Buffer Zone

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	106.23	32.89
2	Fallow Land	97.77	30.27
3	Land With Scrub	76.96	23.83
4	Land Without Scrub	20.06	6.21
5	Water bodies	10.40	3.22
6	Settlement	10.82	3.35
7	Mining Area/ Industries	6.58	0.23
	Total	328.82	100

From the above table it is seen that 32.89 % of the study area is agriculture land and 30.27 % are fallow land. Land with scrub constitutes 23.83 %, lands without scrub constitute 6.21%, and waterbodies constitute 3.22%.

3.4.2 LAND USED BASED ON REVENUE RECORDS:

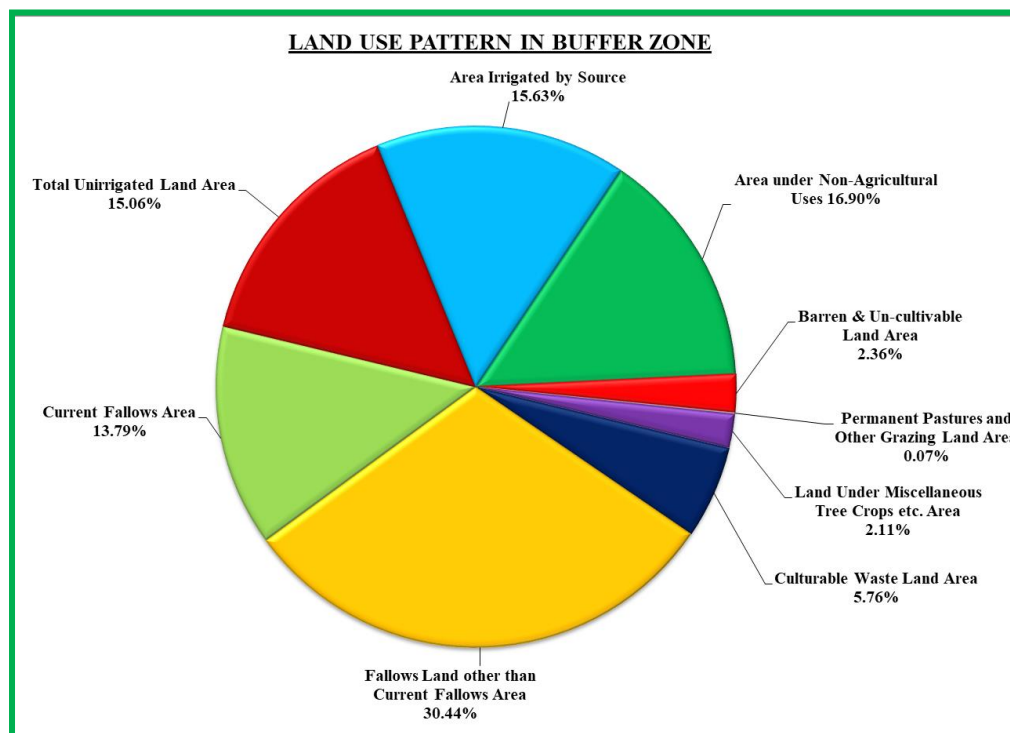
The lease area falls in Gopalapuram Villae, Vembakottai Taluk, Virudhunagar District, Tamil Nadu state and the study area for the land use pattern (10 km radius) has been divided into four zones viz. Zone-I (0-2 km), Zone-II (2-5 km), Zone-III (5-10 km) and Zone-IV (0-10 km) respectively. The land use pattern of the study area falling within 10 km radius around the proposed project area is presented in Table no - 3.10. Village wise land use pattern is provided in **Annexure-X**.

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Table no – 3.10: Land Use Pattern of the Study Area Falling Within 10 Km Area in (Ha)

VILLAGE NAME	Total Geographical Area	Forest Area	Area under Non-Agricultural Uses	Barren & Un-cultivable Land Area	Permanent Pastures and Other Grazing Land Area	Land Under Miscellaneous Tree Crops etc. Area	Culturable Waste Land Area	Fallows Land other than Current Fallows Area	Current Fallows Area	Total Un irrigated Land Area	Area Irrigated by Source
0- 2 KM	1557.5	0	175.38	0	0	265.35	0.94	430.09	237.17	244.13	204.44
2 - 5 KM	4849.13	0	944.55	0.6	0	241.35	2.42	1745.83	366.23	362.44	1185.71
5-10 KM	38229.27	0	5476.18	1052.64	32.43	434.15	2567.41	11411.52	5549.8	6117.47	5587.67
Total	44635.9	0	6596.11	1053.24	32.43	940.85	2570.77	13587.44	6153.2	6724.04	6977.82

Figure 3.16: Landuse within the Buffer Zone Area



3.5 BIOLOGICAL ENVIRONMENT:

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

3.5.1 FLORA:

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

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

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

3.5.1.1 Sampling Methodology:

In order to provide representative ecological status for the study area, the 10-km radius buffer area has been divided into four quartiles for biodiversity sampling, i.e., NE (Q-1), NW (Q-2) SW (Q-3) and SE (Q-4). Each of the quartiles have been examined for representative flora on randomly sampled quadrats for trees (10x10 m), shrubs (5x5 m) and herbs (1x1 m) depending upon prevailing geographical conditions and bio-diversity aspects of study area.

Phyto-sociological Survey: Phyto-sociological parameters, viz., Abundance (i.e., density), average and minimum stems were measured to determine the distribution and ecological aspects of the species. Abundance is a measure of the density of distribution of an individual species within a given area. It is calculated by summed individuals of a species. Average species number is calculated for all quadrates; similarly, minimum number of individuals

represented is recorded at quadrats level. A total of 10 quadrats were laid down in core area and a total of 20 quadrats were laid out in four quartiles (5 each) of buffer area.

Quadrats method for flora : Quadrats of 10 × 10m were laid down randomly within core and 10kms buffer area; each quadrat was laid to assess the trees (>5 cm GBH) and 5 × 5 m sub-quadrat nested within the quadrat for shrubs and two plot 1 × 1 m for herbs . The quadrats were laid at a minimum distance of a kilometer apart to maximize the sampling efforts and minimize the species homogeneity, such as small stream area, trees in agricultural bunds, tank bunds, farm forestry plantations, natural forest area, avenue plantations, house backyards, etc. In each sample quadrat, individuals belonging to tree, shrub and herb species were recorded separately, and have been identified on the field. The prevailing land use and habitat quality has been noted down for each location on the field.

Vegetation Analysis using index: Species diversity will be calculated by using Shannon and Wiener (1963) formula as follows:

$$H' = - \sum_{i=1}^R p_i \ln p_i$$

Whereas,

H' is Shannon index of general diversity,

p_i is often the proportion of individuals belonging to the i th species in the dataset of interest.

Evenness index was calculated as: $E = H'/H_{max}$,

Whereas $H_{max} = \log_2$ (number of species in the plot)

A.CORE ZONE:

The lease area is a non forest, private land with scrub and thorny bushes. The lease is barren area with thorny bushes. The detailed list of plants found in the core zone are given in Table no – 3.21.

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PHOTOGRAPH SHOWING THE LEASE AREA



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Table 3.21: List of Floristic Species in the Core Zone

Sl.No	Species Name	Common Name	Family
Trees			
1	Prosopis juliflora	Fabaceae	Seemai karuvel
2	Acacia nilotica	Fabaceae	Karuvelan
Shrubs			
1	Cassia auriculata	Fabaceae	Aavarampoo
2	Calotropis gigantea	Apocynaceae	Earukku
3	Lantana camara	Verbenaceae	Unji
Herbs			
1	Leucas aspera	Lamiaceae	Thumbai
2	Solanum xanthocarpum	Solanaceae	Kandangkattari
3	Tridax procumbens	Asteraceae	Vettukai poondu
4	Achyranthes aspera	Amaranthaceae	Nayuruvi
Grasses			
1	Cyperus rotundus	Korai pullu	Cyperaceae
2	Cynodon dactylon	Arugampillu	Poaceae

B.BUFFER ZONE:

The Dominated species are Azadirachta indica, Albizia lebbeck, Acacia leucophloea, Acacia auriculiformis, Acacia nilotica, Prosopis juliflora, Borassus flabellifer, etc. Patches of coconut and casurina farms are also observed.

Table 3.22: List of Floristic Species in the Buffer Zone

Sl.No	Species Name	Family	Local Name
Trees			
1	Thespesia populnea	Malvaceae	Puvarasu
2	Saraca asoca	Caesalpiniaceae	Asogam
3	Polyalthia longifolia	Annonaceae	Nietilingam
4	Musa paradisiaca	Musaceae	Valzhlai
5	Morinda pubescens	Rubiaceae	Manjanathi
6	Mangifera indica	Anacardiaceae	Maamaram
7	Delonix regia	Fabaceae	Gulmohar
8	Delonix elata	Fabaceae	Perungondrai
9	Casuarina equisetifolia	Casuarinaceae	Savukku
10	Anacardium occidentale	Anacardiaceae	Munthiri
11	Acacia auriculiformis	Fabaceae	Pencile tree
12	Bobax ceiba	Malvaceae	Ilavu
13	Terminalia arjuna	Combretaceae	Marudha Maram

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Sl.No	Species Name	Family	Local Name
14	Psidium guava	Myrtaceae	Koyya
15	Phyllanthus emblica	Euphorbiaceae	Nelli
16	Moringa oleifera	Moringaceae	Murungai
17	Leucaena leucocephala	Fabaceae	Subabul
18	Gmelina arborea	Lamiaceae	Kumalaamaram
19	Carica papaya	Caricaceae	Pappali
20	Bauhinia purpurea	Caesalpiniaceae	Mantharai
21	Albizia amara	Fabaceae	Vagai
23	Acacia nilotica	Fabaceae	Karuvelan
25	Azadirachta indica	Meliaceae	Vembu
28	Annona squamosa	Annonaceae	Siththa
29	Tectona grandis	Verbenaceae	Tekku
40	Samanea saman	Fabaceae	Amaivagai
41	Tamarindus indica	Fabaceae	Puli
42	Prosopis juliflora	Fabaceae	Seemai karuvel
43	Morinda tinctoria	Rubiaceae	Nuna
44	Madhuca longifolia	Sapotaceae	Iluppai
45	Lannea coromandelica	Anacardiaceae	Oti
46	Ficus religiosa	Moraceae	Poarasamaram
47	Ficus benghalensis	Moraceae	Aalamaram
48	Cocus nucifera	Arecaceae	Tennai
49	Caesalpinia pulcherrima	Fabaceae	Mayilkondrai
50	Atalantia monophylla	Rutaceae	Kattu Elumeachi
51	Albizia lebeck	Fabaceae	Vagai
52	Acacia leucophloea	Fabaceae	Valvelam
53	Aegle marmelos	Rutaceae	Vilvamaran
54	Borassus flabelliformis	Arecaceae	Panna-maram
55	Cassia fistula	Fabaceae	Konrai
56	Citrus limon	Rutaceae	Lemon
57	Ipomoea carnea	Convolvulaceae	Pink morning glory
58	Ficus hispida	Moraceae	Aarasu
59	Manilkara zapota	Sapotaceae	Sappota
60	Mimusops elengi	Sapotaceae	Magizhamboo
61	Murraya koenigii	Rutaceae	Curry leaf
62	Peltophorum pterocarpum	Fabaceae	Kilukiluppai
63	Pongamia pinnata	Fabaceae	Pungai
64	Pithecellobium dulce	Fabaceae	Kodukkapuli
65	Phoenix sylvestris	Arecaceae	Eeachamaram



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Sl.No	Species Name	Family	Local Name
66	Syzygium cumuni	Myrtaceae	Naval
67	Senna siamea	Fabaceae	Manjal konrai
Shrubs			
1	Sida cordifolia	Malvaceae	Sida plant
2	Lantana camara	Verbenaceae	Putus
3	Jatropha glandulifera	Euphorbiaceae	Vellaikattukottai
4	Datura metel	Solanaceae	Umatai
5	Cassia auriculata	Fabaceae	Aavarampoo
6	Calotropis gigantea	Apocynaceae	Earukku
7	Aloe vera	Asphodelaceae	Chotthu kathalai
8	Ziziphus jujuba	Rhamnaceae	Elanthai
9	Nerium indicum	Apocynaceae	Arali
10	Hibiscus rosa-sinensis	Malvaceae	Semparuthi
11	Boerhaavia diffusa	Nyctaginaceae	Kagithapoo
12	Plumeria acuminata	Apocyanaceae	Alari
13	Vitex negundo	Verbinaceae	Vanili
14	Tecoma stans	Bignoniaceae	Yellow trumpetbush
15	Ricinus communis	Euphorbiaceae	Amanakku
16	Lawsonia inermis	Lythraceae	Maruthani
17	Justicia adhatoda	Acanthaceae	Adathoda
18	Ixora casei	Rubiaceae	Idlipoo
19	Rosa indica	Rosaceae	Rose
Herbs			
1	Achyranthes aspera	Amaranthaceae	Nayuruvi
2	Tridax procumbens	Asteraceae	Vettukai poondu
3	Solanum xanthocarpum	Solanaceae	Kandangkattari
4	Leucas aspera	Lamiaceae	Thumbai
5	Amaranthus viridis	Amaranthaceae	Creen amaranth
6	Acalypha indica	Amaranthaceae	Kupaimeni keeri
7	Ocimum tenuiflorum	Lamiaceae	Thulasi
8	Sida acuta	Malvaceae	Palambasi
9	Andrographis paniculata	Acanthaceae	Kirayt
10	Sida rhombifolia	Malvaceae	Kurundotti
11	Solanum nigrum	Solanaceae	Manatthakalli
12	Vinca rosea	Apocynaceae	Nithiyakalyani
13	Acanthospermum hispidum	Asteraceae	Gokul kanta
14	Anisomeles indica	Lamiaceae	marutti
15	Argemone mexicana	Papaveraceae	Mexican poppy

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Sl.No	Species Name	Family	Local Name
16	Solanum incanum	Solanaceae	Karimulli
17	Anisomeles malabarica	Lamiaceae	Peyimarutti
18	Cleome viscosa	Cleomaceae	Naai velai
19	Parthenium hysterophorus	Asteraceae	Parthenium
20	Phyllanthus niruri	Phyllanthaceae	Keelzhaneeli
Climber			
1	Coccinia indica	Cucubitaceae	Kovai
2	Convolvulus arvensis	Covolvulaceae	Bhoomi Chakra Poondur
3	Cissus quadrangularis	Vitaceae	Pirandai
4	Abrus precatorius	Fabaceae	Kundumani
5	Asparagus racemosus	Asparagaceae	Tannir-vittan
Agricultures Crops			
1	Sesbania grandiflora	Fabaceae	Agati
2	Solanum melongena	Solanaceae	Kaththarii
3	Musa paradisiaca	Musaceae	Valzhai
4	Capsicum annuum	Solanaceae	Red chilli
5	Gossypium hirsutum	Malvaceae	Paruththi
Grasses			
1	Kyllinga nemoralis	Cyperaceae	Velutta nirbasi
2	Cyperus rotundus	Cyperaceae	korai pullu
4	Cynodon dactylon	Poaceae	Arugampillu
5	Chloris barbata	Poaceae	Kodai pullu

3.5.2 FAUNA:

Methodology: Both direct and indirect observation methods were used to survey the fauna. Point Survey Method was used to study the Bird diversity. Besides, discussion with local villagers Collection secondary data from Government records, published reports as well as through discussion with Forest officials, knowledgeable public were used for the study.

Observation: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals are commonly found. The lease and 10 Km buffer zone does not fall in the Western Ghats ESA boundary. No wild mammalian species was directly sighted during the field survey. There is no Sehedule I animals in the buffer zone area. The list of fauna within the study area is given in Table No – 3.29.

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Table 3.23: List of Fauna in the Buffer Zone

S.No	Common Name	Scientific name	IUCN
Mammals			
1	Common Indian Hare	Lepus ruficaudatus	LC
2	Indian Palm squirrel	Funambus palmarum	LC
3	Indian Grey Mongoose	Herpestes edwardsii	LC
Birds			
1	Black Drongo	Dicrurus macrocercus	LC
2	Cattle Egret	Bubulcus ibis	LC
3	Common Babbler	Turdoides caudatus	LC
4	Common Crow	Corvus splendens	LC
5	Common Kingfisher	Alcedo atthis	LC
6	Common Myna	Acridotheres tristis	LC
7	Common Quail	Coturnix coturnix	LC
8	House Sparrow	Passer domesticus	LC
9	Indian Cuckoo	Cuculus micropterus	LC
10	Little Cormorant	Phalacrocorax niger	LC
11	Little Egret	Egretta garzetta	LC
12	Purple-rumped Sunbird	Nectarinia zeylonica	LC
13	Red-vented Bulbul	Pycnonotus cafer	LC
14	Rose-ringed Parakeet	Psittacula krameri	LC
15	Spotted Dove	Streptopelia chinensis	LC
Reptiles			
1	Common Indian krait	Bungarus caeruleus	LC
2	Rat Snake	Ptyas mucosa	LC
3	Garden Lizard	Calotes versicolor	LC
Amphibians			
1	Common Indian toad	Bufo melanostictus	LC
Butterfly			
1	Lime butterfly	Papilio demoleus	LC
2	Common crow	Euploea core	LC
3	Small grass yellow	Eurema brigitta	LC

3.6 HYDROGEOLOGICAL STUDY:

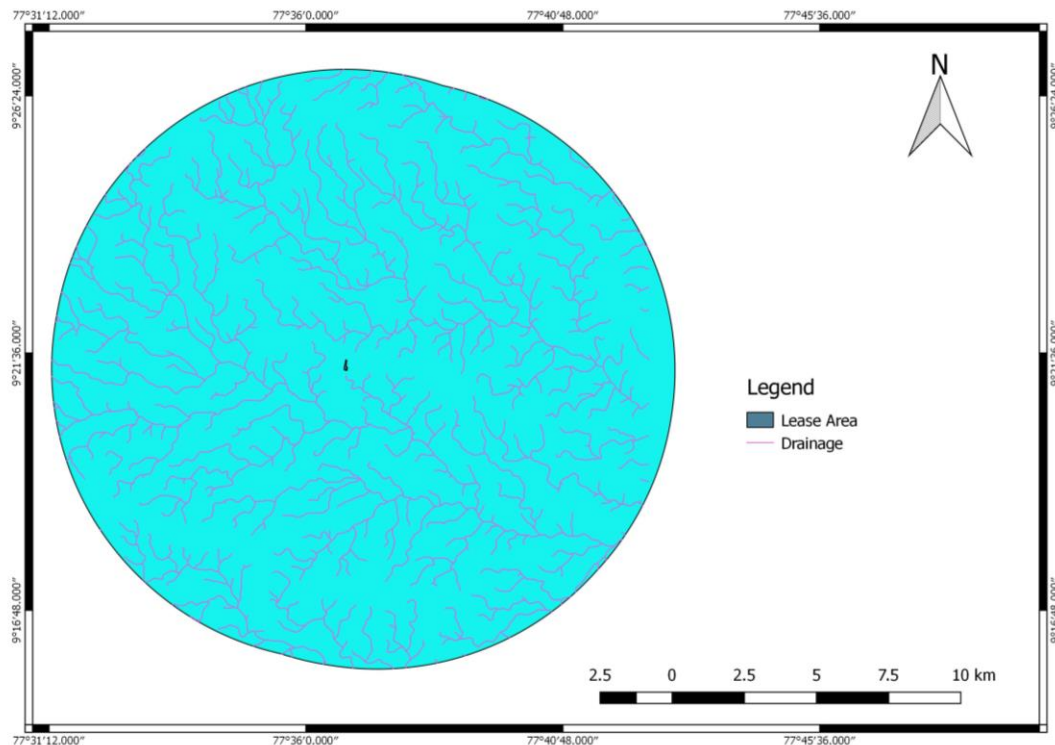
This section delves into the study of the hydrogeological scenario of the study area to evaluate the impact of mining activities on the nearby areas. The study area is located in Gopalapuram village, Vembakottai Taluk is considered to understand the nature of the general hydrogeological conditions of the area.

3.6.1 PHYSIOGRAPHY AND DRAINAGE:

Physiography: The area applied for mining lease is a gentle plain terrain. The area applied for quarry lease is dry lands without any vegetation.

- **Drainage:** There is no major water body in the core zone. There is a Sesonal Drainage in West adjacent to the lease safety distance 10m has been left left, Besides, there is a Kanmai on the southwest side at a distance of 20m. The drainage map prepared from the survey of India topographic maps shows the presence of few streams running in a dendritic pattern.

Figure 3.17: Drainage Map

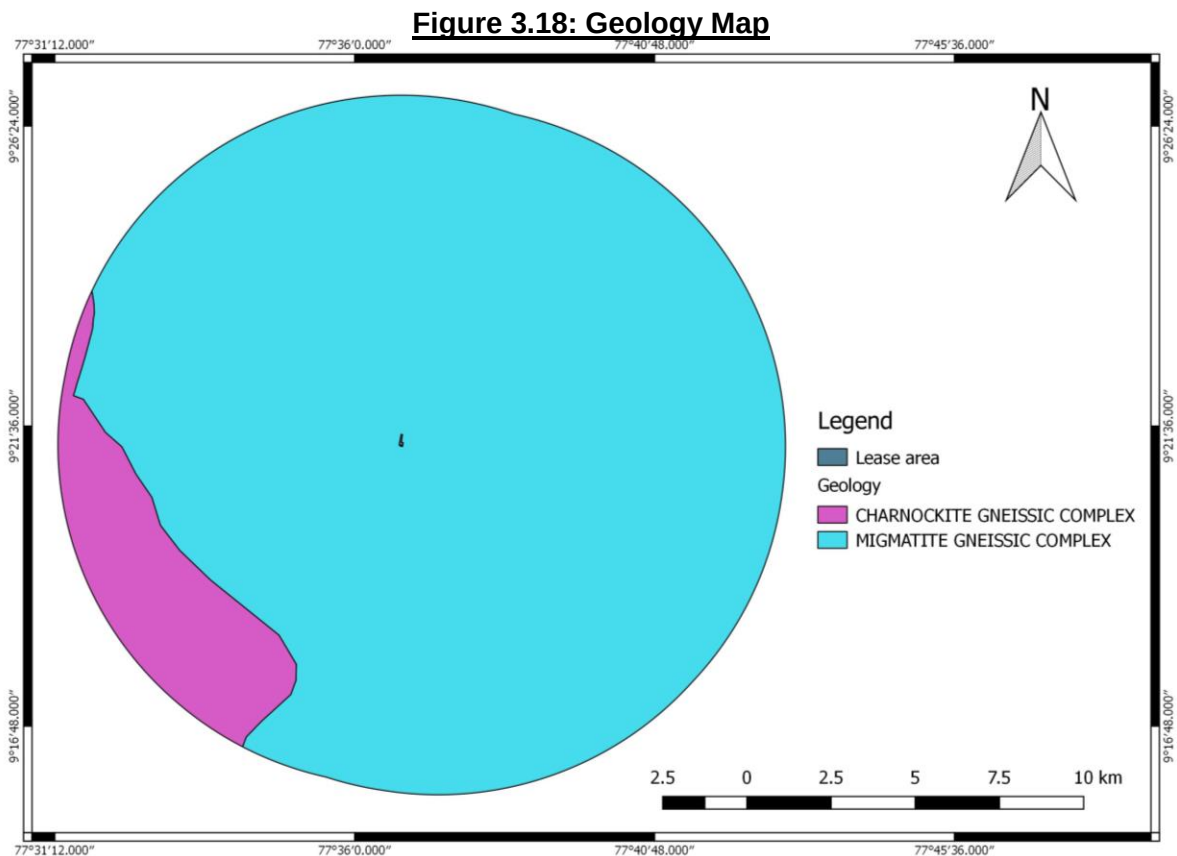


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The drainage on the west and the kanmai on the south are mainly rainwater drainage arrangements. It remains dry for most of the period.

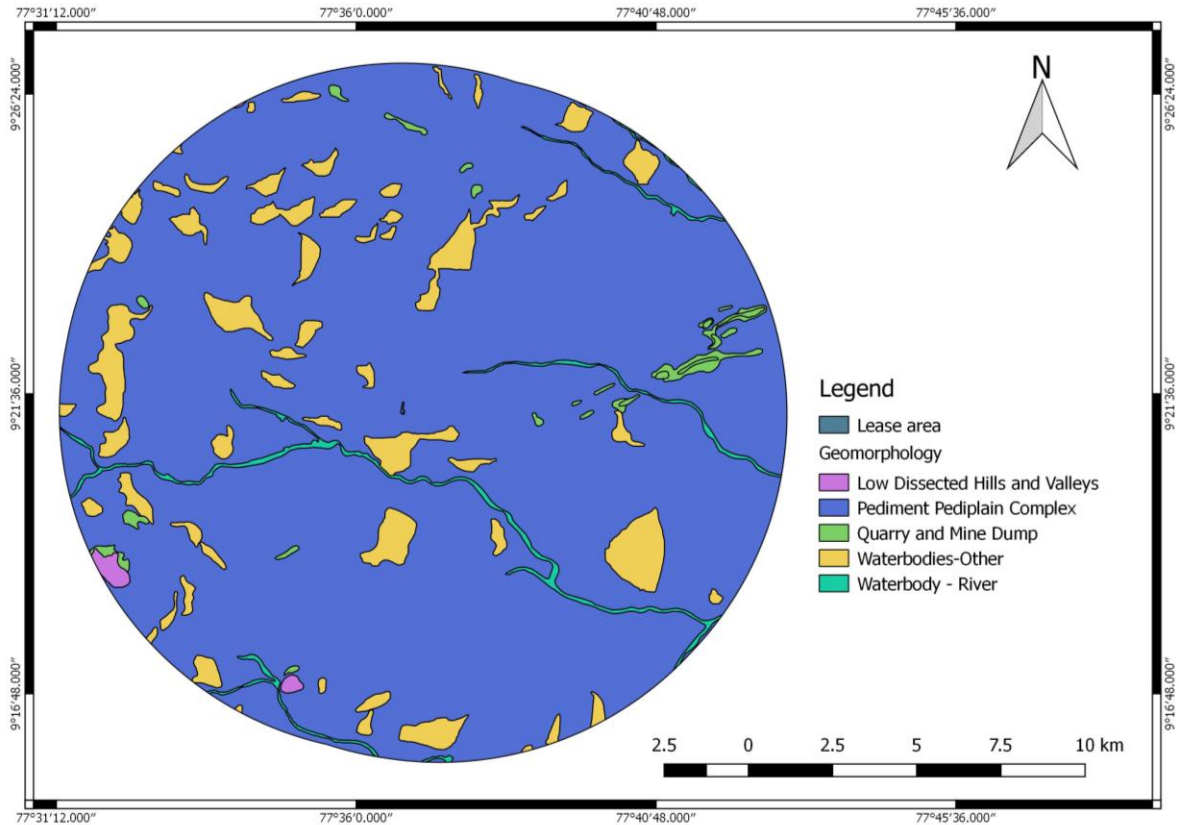
3.6.2 GEOLOGY AND GEOMORPHOLOGY

Geology: The type of rock formation in the core and buffered zone is composed majorly of Migmatite Gneissic complex. The lease area falls under Migmatite Gneissic complex category.



Geomorphology: The geomorphology map of the study derived from the satellite imagery using remote sensing and GIS technique. Predominantly the buffer zone is dominated by Pediment Plain complex, and it is the same category that the lease area also falls under.

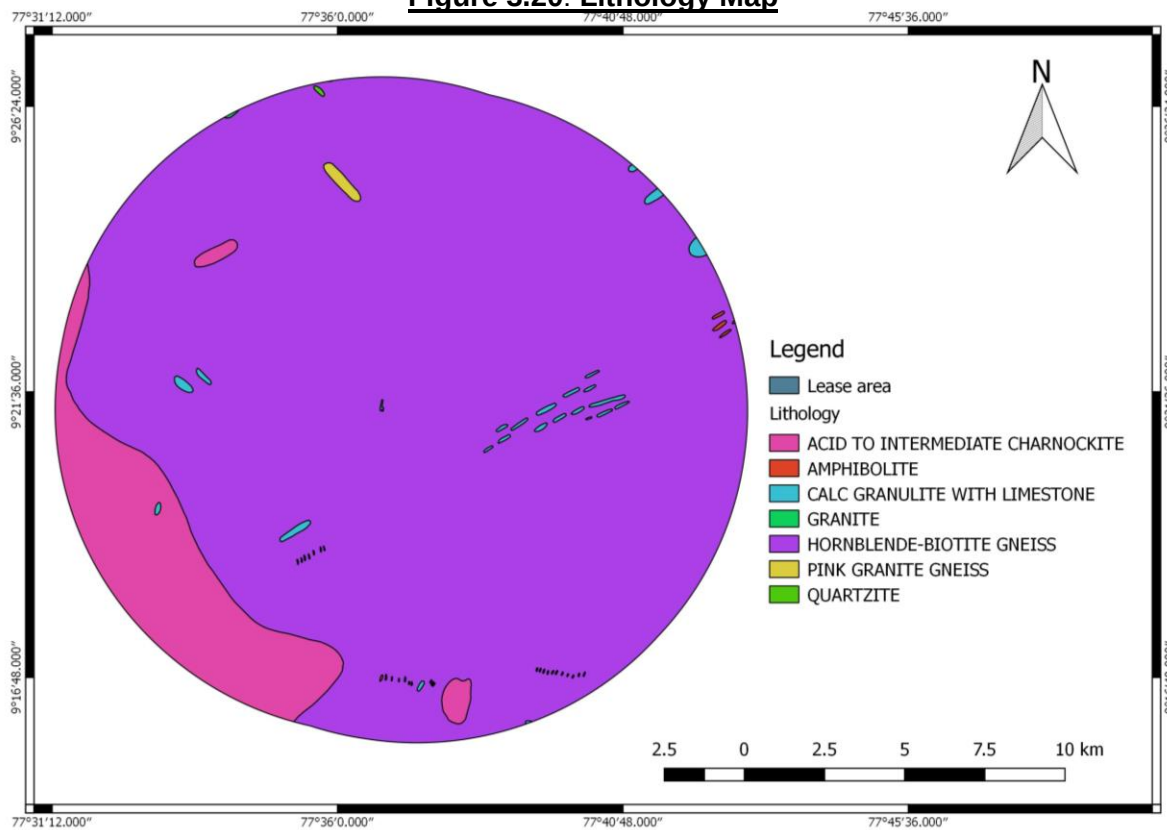
Figure 3.19: Geomorphology Map



Lithology: The study area is mainly dominated by Hornblende-Biotite Gneiss. The lithology map has been provided below.

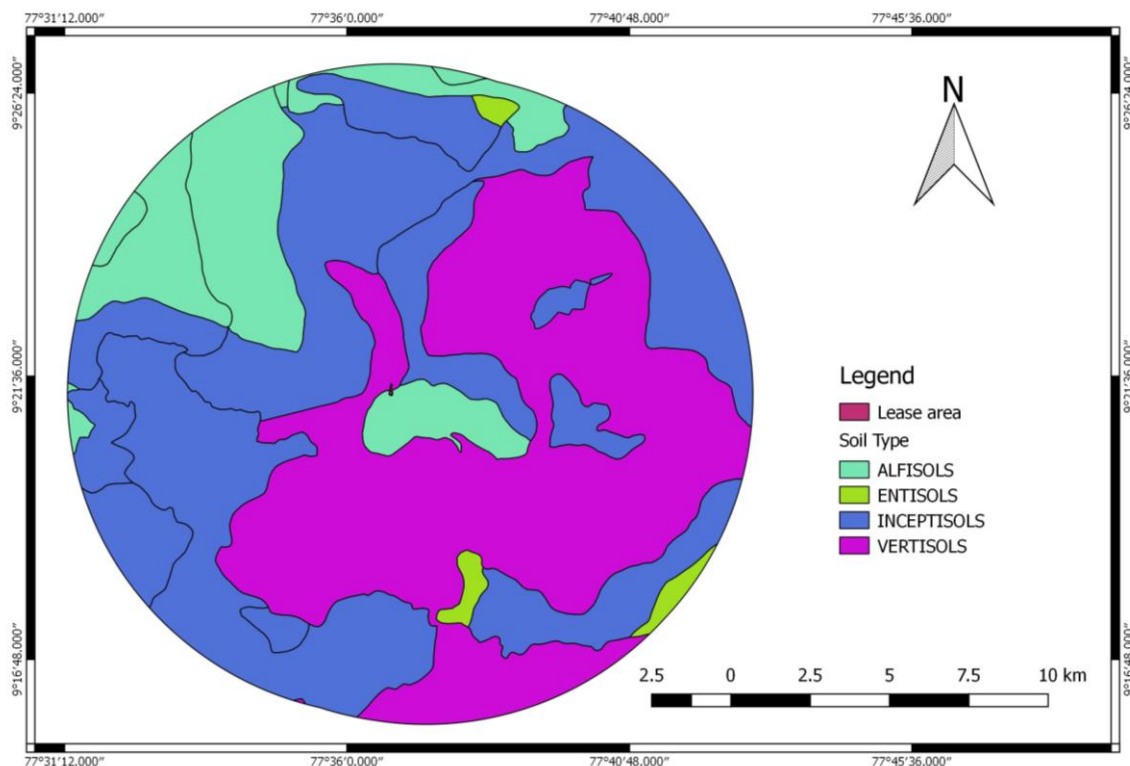
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Figure 3.20: Lithology Map



Soil: The study area is characterized by Alfisols, Vertisols, Inceptisol and Entisols. The project area is dominated with Alfisols & Vertisols type of soil.

Figure 3.21: Soil Map



3.6.3 WATER TABLE OF THE AREA:

The hydrological regime of the area is studied through various published documents, study of well and borewells in the area and discussion with the locals. Based on the depth to water level data obtained from the India-WRIS, Department of Water Resources, Ministry of Jal Shakti for Vembakottai Block, Viruthunagar District, Tamil Nadu the following is observed.

Table 3.24: General Trend of Depth to Water Level for Vembakottai Block

Year	Depth to Water Level (m bgl)		Wells Monitored	
	Pre-Monsoon	Post-Monsoon	Pre-Monsoon	Post-Monsoon
2015	2.225	4.89	2	2
2016	5.49	8.03	3	3
2017	-	7.09	-	2
2018	7.19	4.7	3	2

The premonsoon and post monsoon water levels are depicted in Figure No.3.29, and 3.30 and they indicate that the depth to water level in project area ranges between 2.0 to 10.0 m bgl

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during the pre-monsoon season(April) and 2.0 to 5.0 m bgl during the post monsoon season (November).

Figure 3.22: Pre-Monsoon Water Level

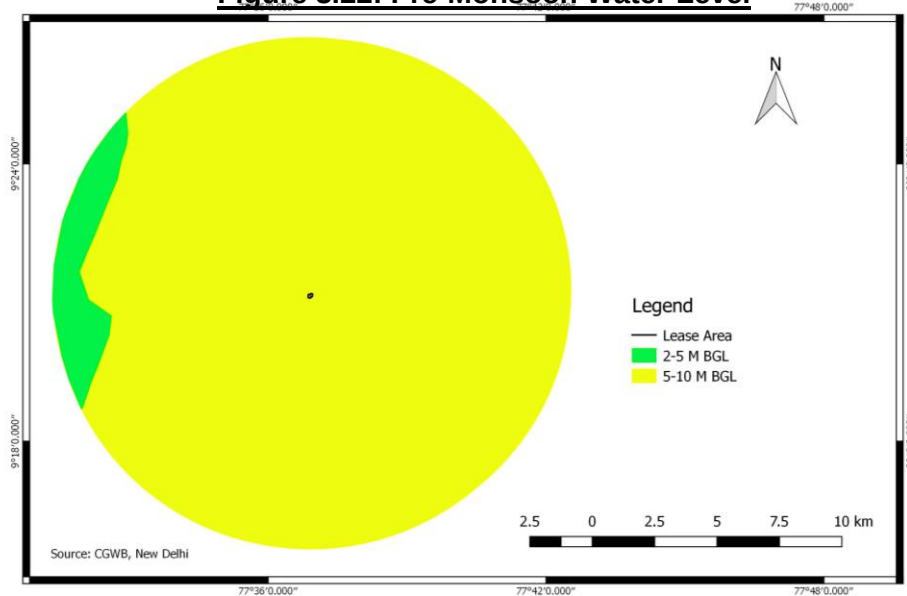
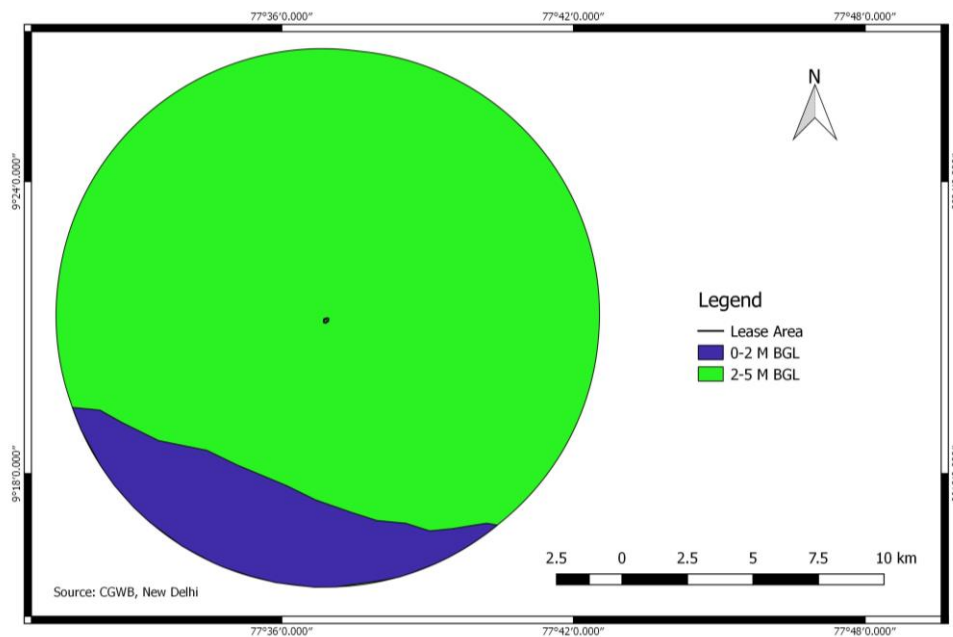


Figure 3.23: Post Monsoon Water Level

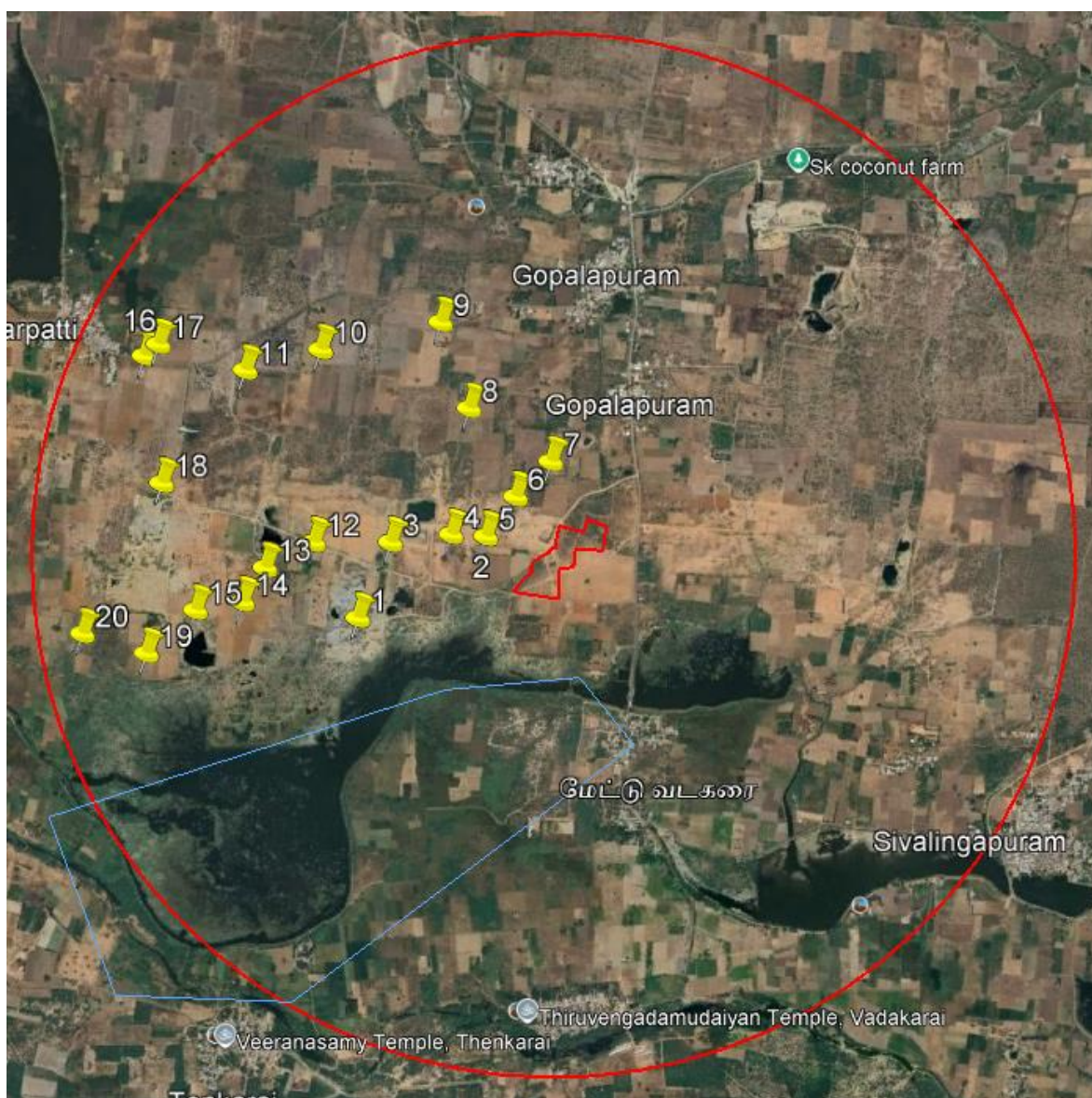


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Well Inventory Data:

The water levels were studied in a total of 20 locations comprising 2 borewells and 18 wells. The map showing the location of these 20 study locations near the lease area has been depicted below in Figure No.3.30. The details of the depth of these wells and borewells, has been provided below in Table No.3.31.

Figure 3.24: Well Inventory Locations



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Table 3.25: Well Inventory Data

ID No.	Well/Borewell	Coordinates		Depth of Well / Borewell (ft)
		Latitude	Longitude	
1	Bore Well	9°21'2.66"N	77°36'54.35"E	300
2	Well	9°21'12.72"N	77°37'10.25"E	12
3	Well	9°21'11.92"N	77°36'58.41"E	18
4	Well	9°21'12.88"N	77°37'5.96"E	15
5	Well	9°21'12.69"N	77°37'10.27"E	21
6	Well	9°21'17.50"N	77°37'13.97"E	9
7	Well	9°21'21.86"N	77°37'18.35"E	22
8	Well	9°21'28.37"N	77°37'8.18"E	10
9	Well	9°21'38.96"N	77°37'4.64"E	25
10	Well	9°21'35.56"N	77°36'49.72"E	18
11	Well	9°21'33.06"N	77°36'40.34"E	22
12	Well	9°21'11.94"N	77°36'48.85"	16
13	Well	9°21'8.84"N	77°36'42.81"E	18
14	Well	9°21'4.61"N	77°36'40.01"E	10
15	Well	9°21'3.63"N	77°36'34.16"E	15
16	Well	9°21'34.77"N	77°36'27.76"E	12
17	Well	9°21'36.25"N	77°36'29.54"E	21
18	Bore Well	9°21'19.19"N	77°36'29.95"E	360
19	Well	9°20'58.33"N	77°36'28.05"E	22
20	Well	9°21'0.71"N	77°36'20.10"E	25

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The groundwater has revealed that potential fractures are encountered at deeper levels. Rain water collected in the tanks in the region acts as a good source of water during post monsoon. The water in the wells are available mainly after post monsoon and it reduces during summer. Bore wells are as deep as 380 ft also and it reflects that the yield is only better at deeper water levels

The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. From the nearby working mines, no such seepage is also observed.

* * * * *



CHAPTER 4

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

In this project Mechanized Open Cast mining will be carried out to quarry out Rough Stone & Gravel. The identified impacts due to the mining operation in the leases individually as well as cumulatively during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc., and the details of the same are elaborated in this chapter.

4.2 AIR ENVIRONMENT:

4.2.1 IMPACTS DUE TO PROJECT OPERATION:

The existing ambient air quality in the area has been described in Chapter-III. The proposed mining and allied operations may cause deterioration of air quality due to pollution arising from the project operation if prompt care is not taken. The principal sources of air pollution in general due to mining and allied activities will be:

- ❖ Excavation of material.
- ❖ Movement of HEMM such as Excavators, tippers etc.
- ❖ Loading and unloading operation
- ❖ Transportation

Besides, Gas emission will occur as a result of operation of diesel driven mining equipment, compressors, transporting vehicles, etc.

Particulate matter smaller than 10 microns, referred to as PM₁₀, can settle in the bronchi and lungs and cause health problems like Bronchitis, Emphysema, Bronchial Asthma, Irritation of mucus membranes of eyes, etc. Particles smaller than 2.5 micrometers (PM_{2.5}), tend to penetrate into the lungs and very small particles (<100 nanometers) may pass through the lungs to affect other organs.

Besides the above mentioned fugitive dust emissions, atmospheric pollution can occur as a result of emission of SO₂, NO_x, CO etc., from diesel driven mining equipment, generator sets, etc. Larger suspended particles are generally filtered in the nose and throat and do not cause problems. Higher concentration of SO₂, NO_x, CO may cause some health effect on the human

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beings exposed to it. In case of this mine, the following measures will be adopted in the quarry to control impact on the air quality due to mining operations in the lease area:

Table 4.1: Impact and Mitigation Measures – Air Environment

S.No	Activity	Consequence	Mitigation Measures
1	Drilling	Dust Emanation	Usage of Drill bits in good condition
			Covering of drill holes with wet cloth
			Usage of sharp drill bits for drilling of holes.
			Provision of dust filters / mask to workers working at highly dust prone and affected areas.
2	Blasting	Instantaneous dust emanation	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
			Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
			Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
			Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Dust emanation, Gaseous Emission	HEMM will be operated as per the manufacturer's guidelines
			Enclosures for operator cabin.
			Imparting sufficient training to operators on safety and environmental parameters.
			Proper maintenance of hauling equipments.
4	Transportation	Dust emanation, Gaseous Emission	Avoiding overloading of dumpers.
			Regular wetting of transport road using mobile water tanker.
			Proper maintenance of haul road and other roads
			Setting up of tyre wash facility in the transport road.
			Avoiding overloading of tippers
			Covering of loaded tippers with tarpaulins during transportation
5	Others	Dust emanation, Gaseous Emission	Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
			Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
			Fencing with green net as necessary will be carried out around the lease periphery on all sides.

Due to adoption of all these measures, no major impact on air quality is envisaged due to the proposed opencast mining operations in the leases.



The impact on air quality due to the proposed projects is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. Details of the modeling study / estimation including the modeling technique and post project air quality values are elaborated in the following paras.

4.2.2 AIR QUALITY IMPACT PREDICTION:

The model simulations are done for the air pollutant arising from the mining operations, namely, PM₁₀, PM_{2.5}. Ground Level Concentration (GLC) have been computed using hourly meteorological data.

Table 4.2: Emission Sources

ACTIVITY	SOURCE TYPE
A. Mining operations	Open pit
B. Transportation	Line

4.2.2.1 Emission Factors

Quantification of particulate emissions has been carried out by the emission factor technique. Emission factor is a statistical average of the rate at which a pollutant is released during an activity. This factor when multiplied by the level of that activity in a given situation will give the overall effect. Fugitive emissions have been predicted by using standard equations given and suggested by AP-42, USEPA(1998), Coal S&T Project and for mining & allied activities and other factors. The modeling is done for the peak production to know the worst case scenario on individual basis as well as cumulative basis. The details of the emission factors used for the same is provided below:

Table 4.3: Emission Factors

S.No	Activity	PM10	PM2.5	Unit
1	Ore Loading	1.5×10^{-3}	2.1×10^{-4}	Kg/T
2	OB Loading	1.4×10^{-4}	1.5×10^{-5}	Kg/T
3	Hauling inside lease area	0.19	0.019	g/VKT
4	Drilling	0.1	0.04	Kg/hole

4.2.2.2 Emission Rates:

Based on the emission factors for the peak production capacity, after adopting necessary control measures like dust suppression, Proper maintenance of HEMM, using better quality

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diesel, using latest equipment, proper maintenance of roads, etc. the expected emission rate due to various operations in this project is calculated and is given below:

Table 4.4: Emission Rate

ACTIVITIES	PM ₁₀ (g/sec)	PM _{2.5} (g/sec)
Excavation	0.04	0.01
Drilling	0.19	0.07
Hauling	0.19	0.03
Total	0.41	0.11

A. Emission Source Coordinates: The center of mine was assumed (0, 0) in the mathematical modeling.

B. Meteorological Conditions Used In Predictions: The hourly meteorological data has been generated for the monitoring period and the same has been used in the predictions.

4.2.2.3 Results and Discussions

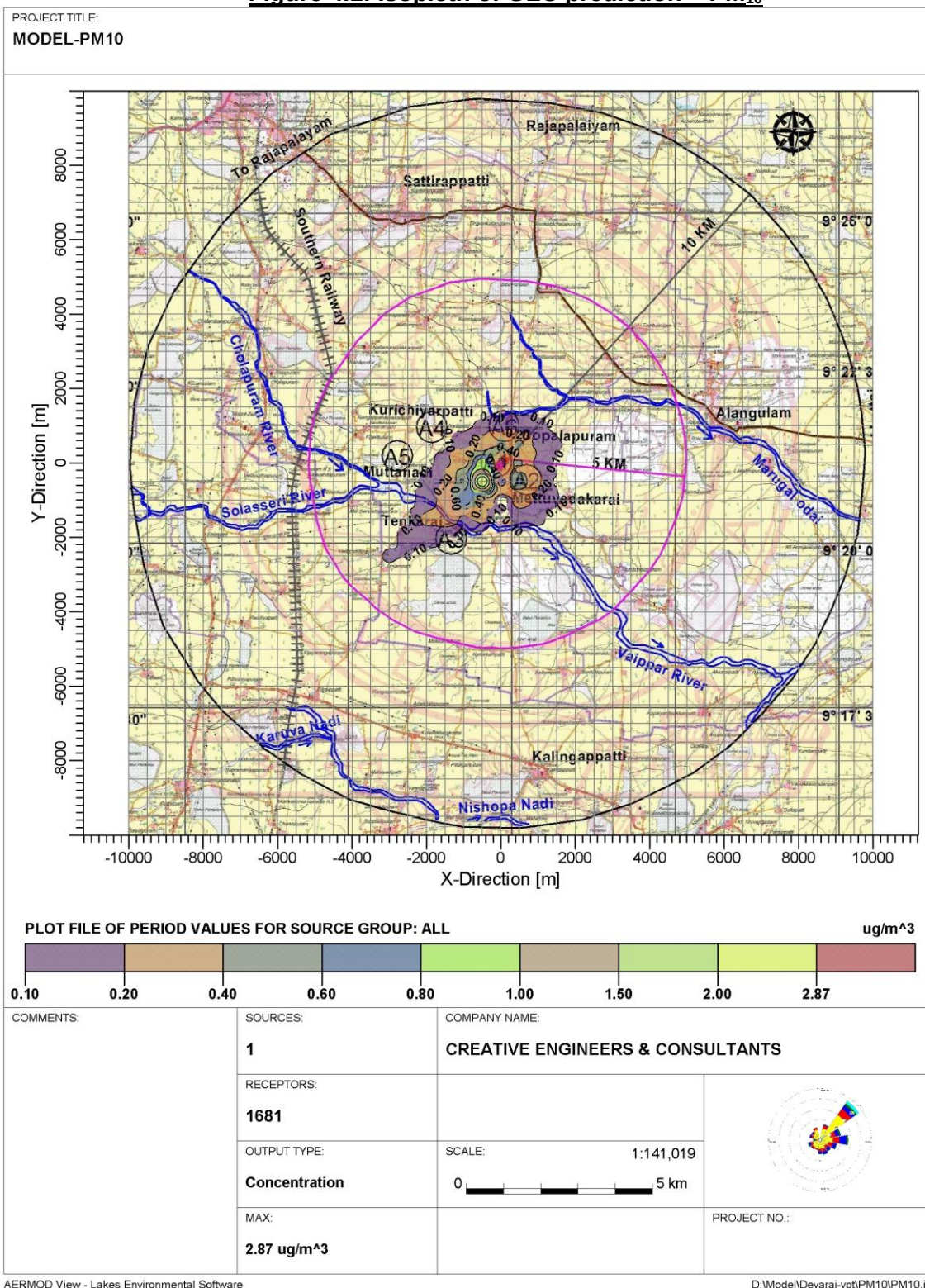
Table 4.5: Peak Incremental Concentration

S.No	Parameters	Peak incremental concentration µg/m ³ – Individual basis
1	PM ₁₀	2.8
2	PM _{2.5}	0.9

It is observed that the peak incremental concentration for PM₁₀, PM_{2.5} occurring very near the source. At away from the source the values are getting reduced due to dispersion effects. The Isopleths of PM₁₀, PM_{2.5} concentrations with control measures scenario have also been drawn and these are given in **Figure No.4.1 and 4.2**. The incremental and predicted concentrations at the locations of ambient air quality have been discussed in the following section.

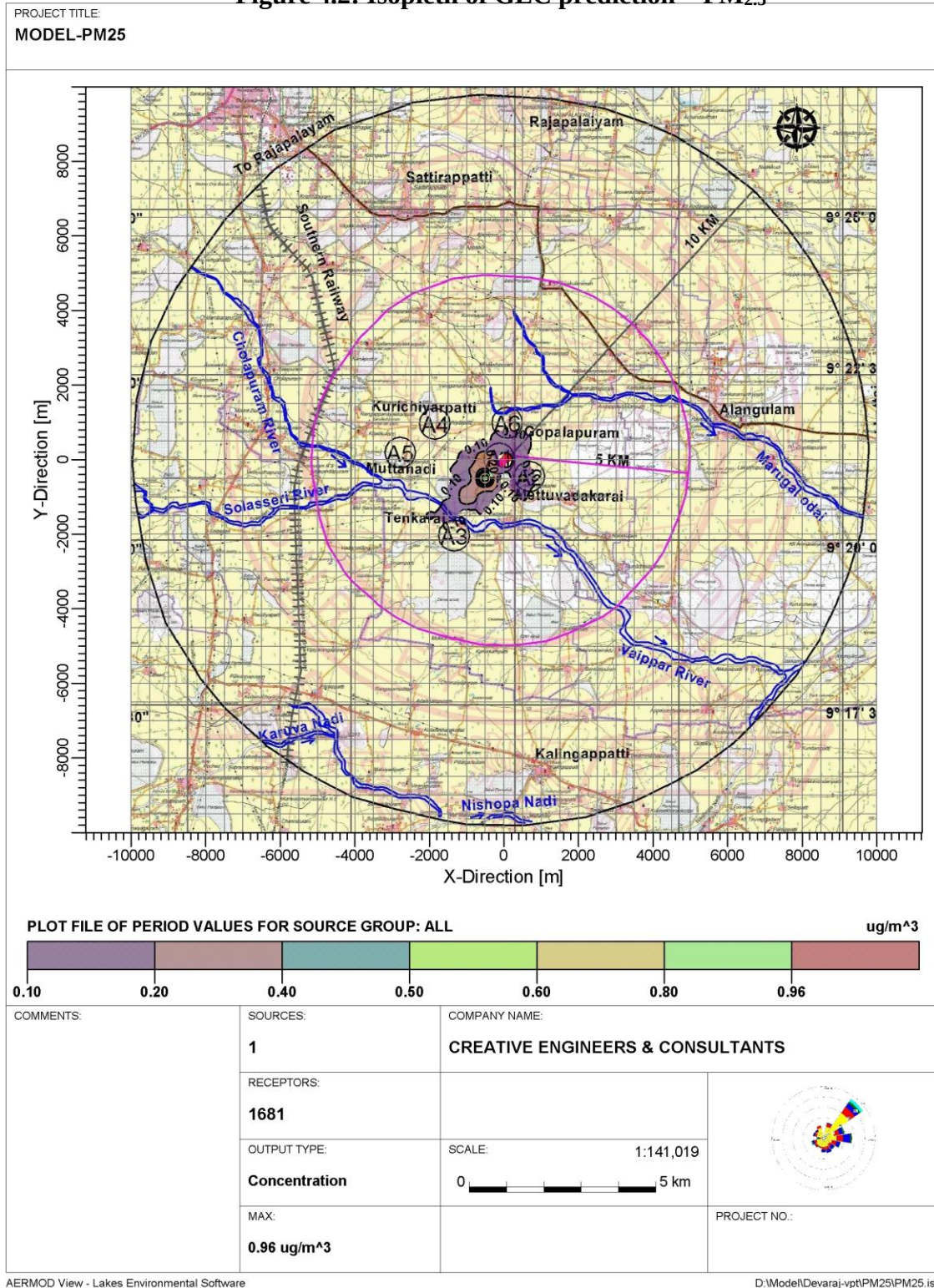
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Figure 4.1: Isopleth of GLC prediction – PM₁₀



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Figure 4.2: Isopleth of GLC prediction – PM_{2.5}



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Predicted Ambient Air Quality:

Table 4.6: Concentrations Of PM₁₀ after Project Implementation

Values in $\mu\text{g}/\text{m}^3$

S. No	Location	Background Concentration	Values in $\mu\text{g}/\text{m}^3$		Statutory Limits
			Incremental Conc	Post Project Conc	
1	Near Mine Lease Area	64.7	2.8	67.5	-
2	Mettu Vadakarai Village	53.2	<1.0	54.2	100
3	Tenkarai Village	58.6	<1.0	59.6	
4	Kuruchiyarpatti Village	55.5	<1.0	56.5	
5	Muthanuthi Village	51.2	<1.0	52.2	
6	Gopalapuram Village	68.0	<1.0	69.0	

Table 4.7: Concentrations Of PM_{2.5} after Project Implementation

Values in $\mu\text{g}/\text{m}^3$

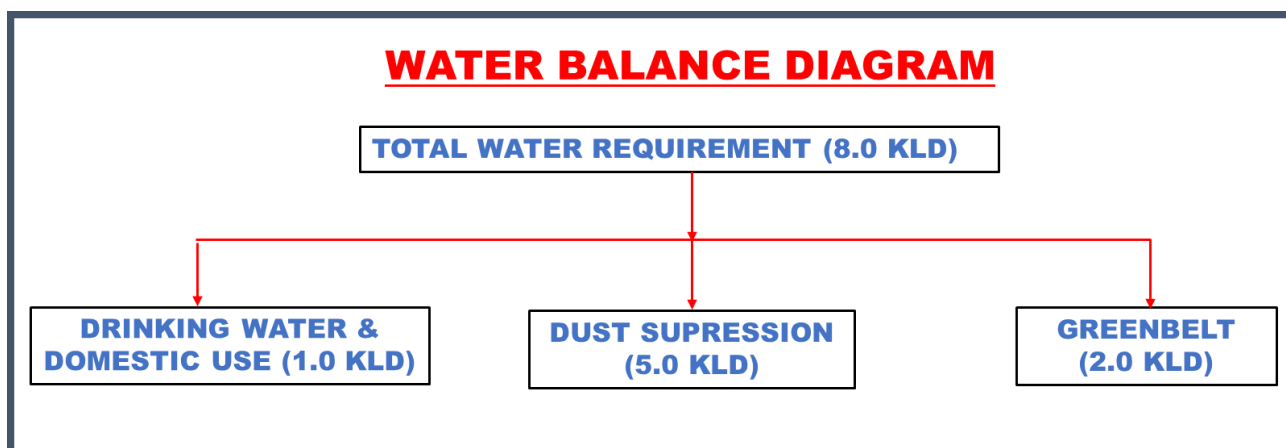
S. No	Location	Background Concentration	Values in $\mu\text{g}/\text{m}^3$		Statutory Limits
			Incremental Conc	Post Project Conc	
1	Near Mine Lease Area	39.4	<1.0	40.4	-
2	Mettu Vadakarai Village	30.6	<1.0	31.6	60
3	Tenkarai Village	27.6	<1.0	28.6	
4	Kuruchiyarpatti Village	27.3	<1.0	28.3	
5	Muthanuthi Village	24.6	<1.0	25.6	
6	Gopalapuram Village	33.3	<1.0	32.3	

It can be seen that, the resultant added concentrations with baseline figures with respect to PM₁₀ is in the range of 52.2 $\mu\text{g}/\text{m}^3$ to 69.0 $\mu\text{g}/\text{m}^3$ and with respect to PM_{2.5} are in the range of 25.6 $\mu\text{g}/\text{m}^3$ to 40.4 $\mu\text{g}/\text{m}^3$ which are within the stipulated statutory limits for the project.

4.3 WATER REQUIREMENT:

The water requirement for this project is expected to be 8 KLD comprising 1.0 KLD for drinking water and domestic use, 5.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the respective mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.7.

Figure 4.3: Water Balance Diagram



4.3.1 SOURCES OF WATER POLLUTION:

The existing water environment showing water quality at different sampling stations in the area has been described in Chapter-III.

Direct impact on human beings due to poor water quality consequent to mining operation can lead to various water borne diseases like diarrhea, jaundice, dysentery, typhoid, etc. Besides, the polluted water may not be useful for animal or human consumption, vegetation and may affect aquatic life, if effluents are not properly treated to remove the harmful pollutants. The major sources of water pollution normally associated due to mining and allied operations are:

- a. Domestic effluent.
- b. Washouts from stockpile if any.
- c. Disturbance to drainage course in the project area
- d. Generation of mine pit water pumped out from deeper workings if any.

4.3.2 TREATMENT SCHEME:

A. Generation of domestic effluent:

The domestic sewage to be generated from the projects will be collected in respective septic tank with soak pits.

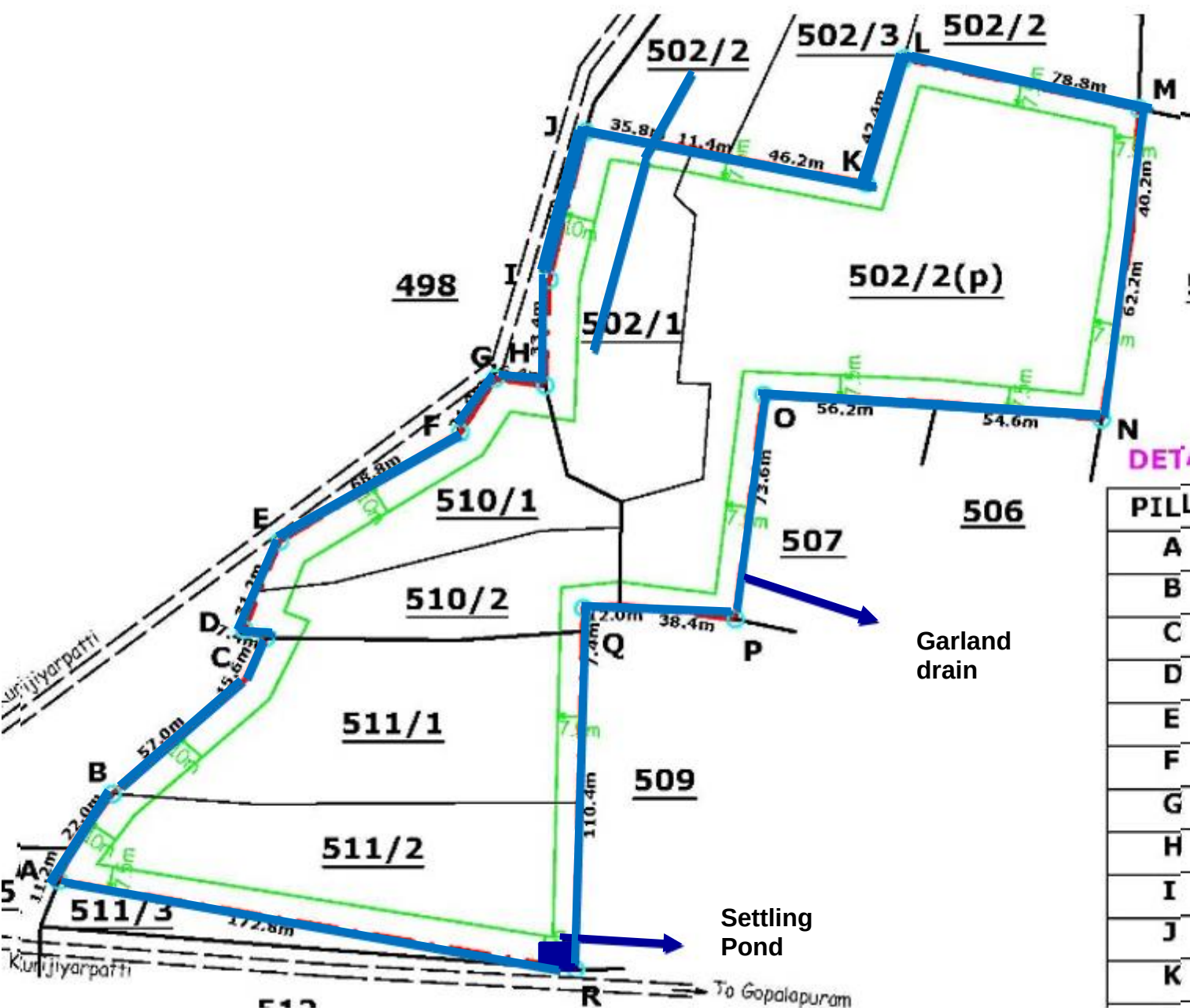
B. Washouts from overburden, ore stockpile, etc.

Since the entire material from the quarry faces will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in the quarry. As such there will not be any wash out due to stock pile or waste dumps.

The rain water falling in the quarries will be harvested in the sump at the lowest level of the respective quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain of length 1050m will be constructed and will be connected to settling ponds with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in **Figure No 4.8**.

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4.3.3 Figure 4.4: Surface Runoff Management Structures



C. Disturbance to drainage courses

There is a Kanmai is around 20m in southwest side and for seasonal drainage 10m safety has been left in West side of the lease area. Due to scanty rainfall the eri and the drainage channel remains dry for most of the year. Protective measure like embankment with plantation & Fencing. There is no proposal to discharge any effluent into this waterbody. No major impact is envisaged on the nearby water bodies due to project operations.

By proper surface runoff management, the rainwater from the lease periphery will be channelized through the peripheral garland drain all around the lease area and Supernatant clear water will be discharged ensuring proper flow of rainwater for downstream users. There is no proposal to discharge any effluent into this waterbody. As such no major impact is envisaged on the nearby water bodies due to project operations.

D. Generation of mine pit water pumped out from deeper workings if any.

The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous in space and depth. Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of weathering. As already mentioned, the lease area is part of a compact rock formation with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. As such hence no major water seepage within the mines is expected from the periphery. The ultimate pit depth of mining is 35 m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation. The working nearby quarries also depicts the same scenario. As mentioned earlier, the rainfall will be collected in the mine floor sump and advantageously used. Excess water if any in the sump will be pumped to settling pond for downstream users.

4.3.3.1 STAGE OF GROUNDWATER DEVELOPMENT

Details of hydrological scenario of the study area were given in para 3.6, Chapter – III. The groundwater resource data of Virudhunagar district was obtained from the data provided in the technical report of the Central Ground Water Board, South Eastern Costal Region – ‘District groundwater brochure, Virudhunagar District.’

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Table 4.8: Ground Water Resources Estimation– VembakottaiTaluk (M.Cum)

Net Groundwater Availability	Existing Gross Draft for Irrigation	Existing Gross Draft for Domestic and industrial water supply	Existing Gross Draft for all uses	Allocation for Domestic and Industrial Requirement supply upto next 25 years (2029)	Allocation for Domestic and Industrial Requirement supply upto next 25 years (2029)	Stage of Ground water Development (%)	Category of Block
26.82	13.14	23.7	15.51	24.7	11.22	58	Safe

From the table it is seen that the stage of groundwater development of Vembakottai where the study area falls is 58% and as such this area can be categorized as 'Safe' from ground water development point of view. Thus there is scope for further ground water development.

4.3.4 REDUCING WATER CONSUMPTION OVER THE YEARS:

4.3.4.1 GENERAL METHODS:

Use of water will be monitored and used to the minimum required. Awareness will be spread to the employees about the importance of water conservation. Tap and showers will be turned off immediately after use and any leaks will be monitored and immediately controlled. Water requirement for greenbelt and dust suppression can be reduced by choosing the native plants/trees species with low water requirement and which can sustain in such conditions for greenbelt/ plantation and also optimum usage to the required minimum. While the dust suppression itself is an important method of pollution control for air pollution due to dust, the water consumption will be monitored strictly. The water tanker will be examined for any sources of leaks and if found will be immediately sealed so that water can be utilized for dust suppression effectively without loss.

4.3.4.2 RAINWATER HARVESTING PLAN

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

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



- d) Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.
- e) Excess water, if any in consultation with local villagers and in line with government practices shall be provided to the downstream users.

4.3 NOISE AND VIBRATION:

4.4.1 NOISE ENVIRONMENT:

The ambient noise levels in the study area have been discussed in Chapter - III. The data shows that the existing noise levels are within statutory tolerable limits. The impact prediction and control measure for noise environment due to mining and allied activities is described below:

4.4.1.1 IMPACT PREDICTION DUE TO NOISE:

Noise is one of the inevitable causes of pollution in mining operations, largely due to the extensive mechanization adopted. Besides, other operations such as drilling, blasting, movement of vehicles, etc., also produce noise of considerable magnitude in mining operations. The main sources of noise and expected levels are given below in **Table no – 4.9.**

Table 4.9: Main Sources of Noise

Sl. No.	Source	Inside Cabin	Noise level at dB(A) 10 m. from source
1	Shovel	84-91	59-68
2.	Dumpers/Tippers	87-96	75-85
3.	Drill	88- 95	75-83

Prolonged exposure to a high noise level is harmful to the human auditory system and can create mental fatigue, rebellious attitude, annoyance and carelessness, which may lead to neglect of work and also result in accidents. The impact of noise level as per World Health Organization's 1986 notification is given below in **Table No - 4.10.**

Table 4.10: Impact of Noise Levels

NOISE LEVELS	ADVERSE EFFECTS
90-115 dB	Partial deafness and nervous irritability
> 115 dB	Permanent deafness
Impulsive noise (>90dB)	Frightens livestock grazing in the nearby areas

OSHA (Occupational Safety and Health Administration), USA and other similar organisations stipulate that noise level up to 90 dB(A) is acceptable for eight hours exposure Leq (Equivalent sound level) (8hrs) per day. The Directorate General of Mines Safety, in circular No. DG (Tech)/18 of 1975, has prescribed the noise level in mining occupations (TLV) for workers, in an 8 hour shift period with unprotected ear as 90 dB(A) or less.

The noise will be felt only near the active sources. There will be considerable reduction in the noise level due to the absorption factor, environmental surroundings and other attenuation factors. As far as absorption factor is concerned, If the ground cover is vegetated or has a soft texture, sound will decrease at the rate of 4.5 dB(A) every time the distance between the source and the observer is doubled. Besides, there will be shielding factor, which takes into account the environmental surroundings. With every 30m of dense land scape vegetation, 5 dB(A) of additional attenuation can be obtained up to a maximum of 10 dB(A). As such at away places the effect of noise will not be felt.

Anticipated noise levels resulting from operation of the various machineries like excavator, tippers, drill have been computed using point source model. Computation of cumulative noise levels at the nearby villages is made based on the assumption that there are no attenuation paths between the source and the boundary. Noise modeling is carried out using the following formula:

$Lp2 = Lp1 - 20 \log R2/R1$, Where, $Lp1$ and $Lp2$ are sound pressure levels at points located at distances $R1$ and $R2$ respectively from the source. The study results are as follows:

Table 4.11: Post Project Noise Levels

Sl.No	Location	Baseline Day Eq.in dB(A)	Post project noise Eq in dB(A)	Limit dB(A) as per MoEF&CC
1	Near Mine Lease Area	51.0	52.9	55
2	Mettu Vadakarai Village	48.0	48.2	55
3	Tenkarai Village	47.1	47.3	55
4	Kuruchiyarpatti Village	48.0	48.2	55
5	Muthanuthi Village	48.3	48.6	55
6	Gopalapuram Village	50.6	50.8	55

From the studies, it is found that the predicted Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Since the habitations are also away the effect of noise due to mining operations will not be felt at all in the surrounding villages.

4.4.1.2 CONTROL MEASURES FOR NOISE ENVIRONMENT:

Hence, by following mitigative measures for noise control, the impact on noise levels will be insignificant:

- Planting rows of native trees along roads, around mine area and other noise generating centers to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.
- Providing earplugs to workers exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.
- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.

Further green belt and afforestation will be planned and executed to abate noise and dust propagation in the area.

4.4.2 GROUND VIBRATION DUE TO BLASTING EFFECTS:

Vibrations due to blasting may cause damage to nearby structures, if appropriate control measures are not adopted. Fly rock is another possible damage causing outcome of blasting.

By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad at the mining areas vide Circular No. 7 dated 29 -08-1997 as given below

Table 4.12: Permissible Peak Particle Velocity (PPV) In Mining Areas

Type of structure	Dominant excitation frequency Hz		
	<8 Hz	8-25 Hz	>25 Hz
A. Buildings/structures not belonging to owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures.	2	5	10
B. Building belonging to owner with limited span of life			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed structures)	15	25	50

Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance.

Since the production from this lease is less, the number of holes and total charge to be used is expected to be less and as such the blast induced vibration is easily controllable and no adverse impact on this front is expected.

4.4 LAND ENVIRONMENT:

The present land use pattern, and the post mining land use pattern is shown below:

Table 4.13: Land Use

	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Mining Area	Nil	3.80
2.	Infrastructure & Roads	Nil	0.02.0
3.	Green Belt	Nil	0.18.00
4.	Fencing	Nil	0.04.0
5.	Undisturbed area	4.04.0	0.00.0
	Total	4.04.0	4.04.0

4.5.1 LAND RECLAMATION:

There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. In the post mining stage, mined out area will be left as water body and the rest will be covered with vegetation.

Table 4.14: Land Use During Post Operational Period

S.No	Description	Land use (Ha.)			
		Plantation	Water body	Others	Total
1	Quarrying Pit	-	3.80.0	-	3.80.0
3	Green Belt	0.18.00	-	-	0.18.0
5	Others	--	-	0.06.0	0.06.0
	TOTAL	0.18.00	3.80.0	0.06.0	4.04.0

In the post mining stage, entire 3.80.0 Ha mined out area up to 35m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the entire mined out area shall be used as a rainwater harvesting pond.

Mine closure :

At the end of the life of the mine, the following points will be ensured:

- The mine benches will be properly dressed, loose material in the face if any and the mine site will also be cleared.
- Mine Closure activities will be carried out progressively by way of fencing, laying of garland drain around the lease periphery & plantation.
- The peripheral barbed wire fencing, will be strengthened to prevent inadvertent entry of public and animal. surface runoff management arrangements will be improved so as not to disturb the hydrological cycle of the area post mining.
- Besides, to prevent any access to the mined out void, entrance will be secured with tall gate and a blockage bund across the access road.
- No entry / safety board will be erected all around the lease area.
- Benches will be kept intact and haul road accessibility will be maintained.

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- Regular checking to prevent inherent entry in to the lease area post mining will be done.
- PP will ensure effective post closure monitoring.

4.6 BIOLOGICAL ENVIRONMENT:

4.6.1 EXISTING FLORA AND FAUNA:

Lease area is barren with grasses and bushes. Details of flora/fauna pattern in core and buffer zones have been described in chapter - III.

4.6.2 IMPACT OF MINING ON BIOLOGICAL ENVIRONMENT:

The significance of impact on biological environment due to mining and allied activities on various fronts is described below:

Table 4.15: Impact on Biological Environment

S.No	ISSUES	OBSERVATIONS
1	Clearance of vegetation due to mining and allied activities	Lease area is a patta land and there is no major vegetation is observed. As such there will be no clearance of vegetation is involved in the leases.
2	Retardation of tree growth, tip burning, etc, due to deposition of dust and the Particulate matter generated from the mining operation.	Necessary mitigative measures like dust suppression, proper maintenance of equipment's, roads will be carried out to prevent dust generation.
3	Proximity to national park/ wildlife sanctuary/reserve forest/mangroves/Coastline/estuary/ sea	The mining lease areas and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.
4	Release of effluents into water body that also supplies water to wildlife	There is no proposal to discharge any effluent into nearby water bodies.
5	Proposed project could increase siltation that would affect nearby biodiversity area	Surface runoff management structures like garland drain, settling pond etc. as explained above will be constructed and as such there will not be any appreciable impact on surface water quality which in turn can affect the bio diversity of the area.
6	Activities of the project affects the breeding/nesting sites of birds and animals	In the present ML area, there is no wetland. A migratory bird needs sufficient wetlands with sufficient food, shelter, roosting places and nesting places which is not possible here.
7	Located near an area populated by rare or endangered species	The study area is observed to be not ecologically sensitive and no endangered or endemic species as per IUCN red list is observed.
8	Risk of fall/slip or cause death to wild animals due to project activities	In the post mining stage, barbed wire fencing is proposed all around the mined-out void to prevent falling of animals in the

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		mine pits.
9	Project affects the forest-based livelihood/any specific forest product on which local livelihood depends	Not applicable
10	Project likely to affect migration routes	No migration routes are in the area.
11	Project likely to affect flora of an area, which have medicinal value	No such significantly important medicinal value species within the ML area and its nearby region.
12	The project likely to affect wetlands, fish breeding grounds, marine ecology	There are no any wetlands, fish breeding grounds, marine ecology nearby the ML area which will be affected due to this project.
13	Project affects the Agriculture, Forestry and Traditional Practices	Since the lease area forms part of a vast tract of hard rocky formation , no agricultural activities are possible and practiced in the lease and its nearby areas. Agricultural activities are carried out far away lands irrigated by tanks and wells during monsoon rainfall. By adoption of systematic mining adhering to all the environmental mitigation measures as explained earlier, no adverse impact on the far away agricultural or surrounding environs envisaged.
14	Impact on soil health and biodiversity	The lease area is rocky type with very little and poor soil cover.(Photograph of the site attached in Chapter-II). Besides, there is no waste generation, disposal or stacking involved in this project. As such no loss of soil health and Bio-diversity is expected.
15	Climate change leading to droughts, floods,etc.	•No adverse impact on the surrounding environment is envisaged since the number of equipments to be used to achieve this production is less and the magnitude of operation is of very small level. •Besides, as is it a mining project, no adverse generation of heat is envisaged. •Certified vehicles with low carbon emissions will only be used. These equipments 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. •Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed. •There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact. •It will be ensured that mining will be carried out adhering to all the statutory rules and regulations and maintaining the environmental quality within the prescribed standards by effective implementation of varioius mitigative measures.
16	Pollution leading to release of greenhouse gases (GHG) rise in temperature (Hydrothermal/Geothermal effect due to destruction in environment, Bio-geochemical processes and its foot prints including environmental stress) and livelihood of local people.	



		•These mitigative measures will be continued for the entire lease period ensuring no impact on the environment. •As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people ,loss of Agriculture, Forestry and Traditional Practices is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc. •Extensive plantation will be developed in and around the lease area for carbon absorption.
17	Possibilities of water contamination and impact on aquatic ecosystem health and impact on Sediment geochemistry in the surface streams	•This being a mining project no process effluent will be generated. •Water generation is expected to be due to ✓ Direct rainfall falling within the pit ✓ Rain water draining near the lease area. •Direct rain fall will be collected in the mine floor sump. Water from sump will be pumped to settling pond for downstream users. •Rainwater from the mine periphery will be collected through peripheral garland drain. Garland drain will be connected to a settling pond. Supernatant clear water from settling pond confirming to applicable limits will be let out to downstream users for agricultural or other purposes. •Due to above mentioned reasons and absence of perinnial water bodies nearby where in any marine ecosystem is observed, no effect on this front is expected.

There are no migratory corridors, migratory avian-fauna, rare endemic and endangered species. Therefore there shall be no impacts due to mining activity on them. Even though there are no adverse impact on bio diversity and flora/fauna status due to project operations, positive impacts will arise due to well-planned reclamation measures for restoration of land status in the area ultimately to productive land category with elaborately planned green belt development activities.

4.6.3 CONTROL MEASURES FOR BIOLOGICAL ASPECTS:

To reduce the adverse effects on flora/fauna status of the area due to deposition of dust generated from mining operations, mobile water tanker systems will be ensured in all dust prone areas to arrest dust generation. Methodical and well-planned plantation scheme will be carried out depending upon the immediate need, priority and availability of land. The plantation will be done along the lease boundary in a phased manner.

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4.6.4 GREEN BELT & PLANTATION:

In the lease area, safety barrier 7.5m around the periphery and 50m safety zone & around the lease area about 1000 trees will be planted.

Table 4.16: Proposed Plantation

Year	No of trees	Name of the species
1-5	200	Pungai, Vagai, Vembu, Manjal konrai, Naval, Puvarasu, etc.,
	200	
	200	
	200	
	200	
6-10	1000	
Total	2000	

Entire 3.80.0 Ha will be used as mined out area up to 35m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing.

.Figure 4.5: Mine Closure Plan



4.6.5 SOCIO ECONOMIC ENVIRONMENT:

The lease areas are in the respective proponent's possession. Hence, there are no habitations or hutments in the core zone area and no rehabilitation or resettlement problems will arise here.

The mining operations in the proposed mines will each employ about 16 persons directly and about 50 persons on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations as shown under.

- Project related logistical operations for transport of Rough Stone, etc,
- Various trading services for consumer goods, spare parts, sundry items, etc.
- Contractual services connected with the project.
- Green belt and horticultural works in the project.
- Casual labor needs for various activities.

Besides, there will be improvement in the following aspects due to project operation:

- ❖ Improvement in infrastructural facilities, providing education aids etc. in nearby schools
- ❖ Betterment of drinking water facilities.
- ❖ Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc from this project directly and also indirectly.

From above details, it is clear that the project operations will have highly beneficial positive impact in the area.

Table 4.17: CER Cost

Project Name	Details
Project Cost (Rs.)	Rs. 63,17,780
CER Cost Requirement (2% of the Project Cost) (Rs.)	Rs. 1,26,355.6
CER cost allocated (Rs.)	Rs. 5.0 Lakhs

However, towards the socio-economic development of the surrounding area, Rs.5 Lakhs is allocated. The activities identified under CER will be implemented in a phased manner in provision of facilities in nearby Government School.

4.7 OCCUPATIONAL HEALTH AND SAFETY:

4.8.1 BASELINE STATUS:

Primary data collection through field survey conducted in the study area reveals that there is no reported incident of any occupational diseases in the area. Hazardous jobs like blasting, loading, etc. are planned to be executed safely and with all precautionary measures as prescribed in Metalliferous Mines Regulations of 1961, so as to minimize hazards and incidences of health problems.

4.8.2 IMPACTS ON OCCUPATIONAL HEALTH DUE TO PROJECT OPERATIONS:

Anticipated occupational illness sequel to mining activities can be as follows:

- Dust related pneumonia
- Tuberculosis
- Rheumatic arthritis
- Segmental vibration
- Miner's Nystagamus

4.8.3 MITIGATIVE MEASURES FOR OCCUPATIONAL HEALTH:

To reduce pollution emanation from the project, following measures are being and will be taken:

- Water sprinkling on haul roads etc.
- Green belt creation to arrest dust and reduce noise propagation.
- Acceptance of good control measures for reducing air pollution, as mentioned earlier in the chapter.
- Control of noise levels through good preventive maintenance of machineries, green belt creation, provision of ear plug to workers, etc.
- In addition to above measures, the following remedial steps are being and will be enforced to ensure minimization of occupational health and safety problems.

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- Medical examination of workers by qualified doctors, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers
- Staff will be provided with PPE to guard against excess noise levels, Dust generation and inhalation, etc., as per standards prescribed by DGMS.

4.8.4 MITIGATIVE MEASURES FOR SAFETY ASPECTS:

The following safety gadgets will be provided to the staff and workers based on their area of operation and work & requirement:

Sl No	Safety Equipment's
1.	Helmets
2.	Shoes
3.	Goggles
4.	Dust Mask
5.	Hand Gloves
6.	Reflective Jackets
7.	Ear Muffs
8.	Signal Lights/Flags

4.8 LOGISTICAL SYSTEM:

From these proposed quarries the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc.

The lease area can be approached through localized road which is well connected with highway roads. The expected peak transport will be as follows:

Table 4.18: Details of Transportation

Sl.no	Particulars of activity	Details
A	Maximum Rough stone Transported (m ³ /year)	84400
B	No of days in a year	300
C	Transport hours per day	8
D	Truck capacity in Cum	8.0
E	Trips per hour	4 Trips/hr

From the above table it is seen that there will be about less 4 trips per hour. The existing road can absorb this traffic due to this project. However, the following mitigative measures are suggested:



- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Plantation on either side of the transport road in consultation with the concerned department.
- ❖ Proper maintenance of transport roads
- ❖ Proper maintenance of transport vehicles.
- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.
- ❖ Limiting of speed
- ❖ Provision of tyre washing facility at the mine outlet

4.9 WASTE MANAGEMENT:

Solid Waste: Since the entire mined out material will be used there will not be any solid waste generation from these projects.

Liquid waste: There is no process effluent generation from these mines. Hence no liquid waste is generated.

Hazardous waste management: In these projects the following management practices will be followed:

- Ensuring availability of different colour bins for collection of different types of waste.
- Storing of Hazardous waste material in a separate storage area with impervious containers for waste oil, oil contaminated clothes, used lead acid batteries, scraps, tyre storage etc.
- Ensure that there are no leakages/spillages of hazardous wastes.
- Ensuring that the fire extinguisher system is available at hazardous material storage area.

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The hazardous waste if any will be disposed through authorized recyclers or re-processors periodically. The hazardous wastes will be transported in accordance with the provisions of rules. By effective implementation of above said mitigation measures no major impact due to Hazardous waste is expected.

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.

* * * * *



CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 ALTERNATE TECHNOLOGY:

In this proposed Rough Stone and Gravel Quarry, Mechanized Open Cast mining will be carried out. It involves jack hammer drilling, blasting, excavation, loading and transportation of Rough stone to the crushing units. As this method is techno economically proven, consideration of an alternate technology is not warranted.

5.2 ALTERNATE SITE:

The mineral deposits are site specific in nature; hence question of seeking alternate site does not arise.

* * * * *



CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 GENERAL

In this project, appropriate environmental monitoring programme are framed. Regular, systematic and sustained programme schedules for implementation and monitoring of various control measures are devised with clear cut guidelines of various concerned plans for keeping a continuous surveillance on the various environmental quality parameters in the area.

The monitoring schedules are planned to aim at regular and systematic study of various pollution levels with respect to air and water quality, noise levels etc., to ensure that they conform to the standards laid down by the Environment Protection Act, 1986 and various Central and State Pollution Control Board Limits.

The various methodologies and frequency of studies of all environmental quality parameters will be as per prescribed norms laid down by MOEF&CC and State Pollution Control Board. This being a small quarry operation, the Mines in-charge will take care of all the environmental related works also.

Environmental control measures include components like air, water and soil quality, noise levels, afforestation measures, etc. For monitoring of environment over the life of the mine, a set of stations for study of quality parameters are fixed as per the actual requirements and prevailing conditions of environmental factors, as dictated from time to time, depending on the prevailing pollution levels.

6.2 MONITORING SCHEDULES FOR VARIOUS PARAMETERS

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits. The monitoring schedules to be adopted in the proposed quarry is given below. However, based on the need and priority it may be suitably modified / improved in consultation with local authorities.

Since there are other leases within the cluster, it is proposed to form a cluster management committee (CMC) and its details are provided under Section 10.2.2, Chapter-X.



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Table 6.1: Environmental Monitoring Schedule

S.No	Environmental Parameters	Parameters to be monitored	Monitoring area coverage /locations	Frequency of monitoring
1	Air Quality	Sulphur dioxide (SO ₂), Oxides of Nitrogen (NO ₂), Respirable Particulate Matter (PM _{2.5} and PM ₁₀).	2 locations in the buffer zone and 1 work zone locations.	Once in a year in each location.
2	Water Quality	General, Physical, and chemical parameters	Ground / nearby surface Water samples (around the project area) and Mine Pit water samples	Once in a year
3	Water Table Fluctuations	Water Levels	Nearby wells and Borewells	On yearly basis pre and post monsoon level
4	Noise	Leq. Lmax Lmin, Leq Day & Leq Night dB(A)	Work zone locations and buffer zone villages	Once in a year
5	Vibration	Peak Particle Velocity	Mine periphery	Once to arrive at optimum blasting parameters
6	Socio Economic Environment	Socio Economic Survey, Review of implementation of CER activities proposed	Buffer Zone	Yearly basis
7	Occupational Health	Occupational health survey to detect early incidence of diseases, Audiometry Test for workers in noise prone area and review of safety matters.	Staff and Workers involved in the project	Once in a year
8	Greenbelt	Maintenance	Within & outside the lease area	Regularly

6.3 LEGISLATIVE AND REGULATORY FRAME WORK:

The project will have environmental policy declaring its responsibility and commitment to protect the environment and to ensure public safety. The existing policy will be available with all concerned officials of the plant. The following environmental standards as per methodologies prescribed, by MOEF/CPCB/TNPCB will be enforced in this project:

Table 6.2: Environmental Standards

Standards	Issued By	Reference
National Ambient Air Quality Standards	Central Pollution Control Board	Table No. 6.3
Water quality standards per IS 10500:2012	Bureau of Indian Standards	Table No.6.4
Noise Standards	CPCB / MoEF&CC	Table No.6.5
Permissible Peak Particle Velocity	DGMS, Dhanbad	Table No.6.6



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Table 6.3: National Ambient Air Quality Standards

[भाग III—खण्ड 4]

भारत का राजपत्र : असाधारण

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981) and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke -Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hoehleiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O ₃) µg/m ³	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb) µg/m ³	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m ³	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH ₃) µg/m ³	Annual* 24 hours**	100 400	100 400	-Chemiluminescence -Indophenol blue method



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4 THE GAZETTE OF INDIA : EXTRAORDINARY [PART III—Sec. 4]

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m ³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m ³	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m ³	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.



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Table 6.4: IS – 10500 :2012 Standards

Table 1 Organoleptic and Physical Parameters
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 3025	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Colour, Hazen units, <i>Max</i>	5	15	Part 4	Extended to 15 only, if toxic substances are not suspected in absence of alternate sources
ii)	Odour	Agreeable	Agreeable	Part 5	a) Test cold and when heated b) Test at several dilutions
iii)	pH value	6.5-8.5	No relaxation	Part 11	—
iv)	Taste	Agreeable	Agreeable	Parts 7 and 8	Test to be conducted only after safety has been established
v)	Turbidity, NTU, <i>Max</i>	1	5	Part 10	—
vi)	Total dissolved solids, mg/l, <i>Max</i>	500	2 000	Part 16	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

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Table 2 General Parameters Concerning Substances Undesirable in Excessive Amounts
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Aluminium (as Al), mg/l, <i>Max</i>	0.03	0.2	IS 3025 (Part 55)	—
ii)	Ammonia (as total ammonia-N), mg/l, <i>Max</i>	0.5	No relaxation	IS 3025 (Part 34)	—
iii)	Anionic detergents (as MBAS) mg/l, <i>Max</i>	0.2	1.0	Annex K of IS 13428	—
iv)	Barium (as Ba), mg/l, <i>Max</i>	0.7	No relaxation	Annex F of IS 13428* or IS 15302	—
v)	Boron (as B), mg/l, <i>Max</i>	0.5	1.0	IS 3025 (Part 57)	—
vi)	Calcium (as Ca), mg/l, <i>Max</i>	75	200	IS 3025 (Part 40)	—
vii)	Chloramines (as Cl ₂), mg/l, <i>Max</i>	4.0	No relaxation	IS 3025 (Part 26)* or APHA 4500-Cl G	—
viii)	Chloride (as Cl), mg/l, <i>Max</i>	250	1 000	IS 3025 (Part 32)	—
ix)	Copper (as Cu), mg/l, <i>Max</i>	0.05	1.5	IS 3025 (Part 42)	—
x)	Fluoride (as F) mg/l, <i>Max</i>	1.0	1.5	IS 3025 (Part 60)	—
xi)	Free residual chlorine, mg/l, <i>Min</i>	0.2	1	IS 3025 (Part 26)	To be applicable only when water is chlorinated. Tested at consumer end. When pro- tection against viral infec- tion is required, it should be minimum 0.5 mg/l
xii)	Iron (as Fe), mg/l, <i>Max</i>	0.3	No relaxation	IS 3025 (Part 53)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xiii)	Magnesium (as Mg), mg/l, <i>Max</i>	30	100	IS 3025 (Part 46)	—
xiv)	Manganese (as Mn), mg/l, <i>Max</i>	0.1	0.3	IS 3025 (Part 59)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xv)	Mineral oil, mg/l, <i>Max</i>	0.5	No relaxation	Clause 6 of IS 3025 (Part 39) Infrared partition method	—
xvi)	Nitrate (as NO ₃), mg/l, <i>Max</i>	45	No relaxation	IS 3025 (Part 34)	—
xvii)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, <i>Max</i>	0.001	0.002	IS 3025 (Part 43)	—
xviii)	Selenium (as Se), mg/l, <i>Max</i>	0.01	No relaxation	IS 3025 (Part 56) or IS 15303*	—
xix)	Silver (as Ag), mg/l, <i>Max</i>	0.1	No relaxation	Annex J of IS 13428	—
xx)	Sulphate (as SO ₄) mg/l, <i>Max</i>	200	400	IS 3025 (Part 24)	May be extended to 400 pro- vided that Magnesium does not exceed 30
xxi)	Sulphide (as H ₂ S), mg/l, <i>Max</i>	0.05	No relaxation	IS 3025 (Part 29)	—
xxii)	Total alkalinity as calcium carbonate, mg/l, <i>Max</i>	200	600	IS 3025 (Part 23)	—
xxiii)	Total hardness (as CaCO ₃), mg/l, <i>Max</i>	200	600	IS 3025 (Part 21)	—
xxiv)	Zinc (as Zn), mg/l, <i>Max</i>	5	15	IS 3025 (Part 49)	—

NOTES

1 In case of dispute, the method indicated by '*' shall be the referee method.

2 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.



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Table 6.5: Noise Level Standards

Area Code	Category of Area	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note :

1. Day time shall mean from 6 a.m. and 10.0 p.m.
2. Night time shall mean from 10.0 p.m. and 6 a.m.
3. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority.
4. Mixed categories of areas may be average as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is energy mean of the noise level over a specified period.

Table 6.6: Permissible Noise For Industrial Workers As Laid Down By CPCB

Exposure time (in hr. per day)	Limit in dB(A)
8	90
4	93
2	96
1	99
1/2	102
1/4	105
1/8	108
1/16	111
1/32	114



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Table 6.7: Permissible Peak Particle Velocity (PPV) In Mining Areas

In mm/sec.

Type of structure	Dominant excitation frequency Hz		
	<8 Hz	I 8-25 Hz	I >25 Hz
A. Buildings/structures not belonging to owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures.	2	5	10
B. Building belonging to owner with limited span of life			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed structures)	15	25	50

The above said monitoring location and the frequency of monitoring shall be suitably modified in consultation with the nodal agency as per the actual requirements and prevailing conditions of the mine and environmental factors, as dictated from time to time, depending on the prevailing pollution levels, if required.

6.4 ENVIRONMENTAL MONITORING COST:

Towards environmental monitoring it is proposed to allocate a budget of Rs. 50,000 per annum. Further details of the capital and recurring cost of environmental management has been provided in in Table No. 10.2, Chapter-X.

* * * * *



CHAPTER 7 ADDITIONAL STUDIES

7.1 GENERAL:

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

1. Public consultation of the project as per MoEF&CC mandates.
2. Risk Assessment
3. Cumulative Impact Study
4. R&R Plan
5. Mine closure planning

7.2 PUBLIC CONSULTATION:

This draft EIA/EMP report will be submitted for Public Hearing as per mandatory procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu.

7.3 RISK ASSESSMENT:

For the various risks, likely to arise, detailed analysis of causes and control measures is given in below:

S.No	Factors	Causes of risks	Control measures
1.	Removal of material	a) Bench may slide due to its unconsolidated nature. b) Vibration due to movement of vehicles in the benches.	Overall bench slope angle will be maintained optimally as per DGMS requirement. Working bench width will be more than bench height.
2.	Drilling	a) Due to high pressure of compressed air hoses may burst.	• Periodical preventative maintenance and replacement of worn out accessories in the compressor and drill equipment.

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S.No	Factors	Causes of risks	Control measures
		b) Down the hole drill rod may break due to improper maintenance of rod.	As per manufacturers recommendation rod to be replaced and bits will be changed.
3.	Blasting	a) Fly rock, ground vibration, noise etc. b) Improper charging of explosives	- Burden and spacing will be kept optimum on trial basis. - Explosive charge per delay will be minimized. - Controlled blasting with Nonel will be used.
4.	Excavation	a) Hauling and loading equipment are in such proximity while excavation b) Swinging of bucket over the body of tipper c) Driving of unauthorized person	- Operator shall not operate the machine when person & vehicles are in such proximity. - Shall not swing the bucket over the cab and operator leaves the machine after ensuring the bucket is on ground. - Shall not allow any unauthorized person to operate the machine by effective supervision.
5.	Transportation	a) Operating the vehicle "nose to tail" b) Overloading of material c) While reversal & overtaking of vehicle d) Operator of truck leaving his cabin when it is loaded	- It will be ensured that all these causes will be nullified by giving training to the operators. - No over loading will be done. - Audio visual reverse horn will be provided. - Proper training will be given.
6.	Fire due to electricity and Oil	a) Due to the short circuit of cables & other electrical parts b) Due to the leakage of inflammable liquid like diesel, oil etc.	- Electrical parts shall be cleaned frequently with the help of dry air blower - All fastening parts and places will be tightening. Suitable fire suppression equipment shall be provided.
7.	Natural calamities	Unexpected happenings	The mine management is capable to deal with the situation.

These being small rough stone projects that too working in a safe area, no major disaster is expected.

7.3.1. DISASTER MANAGEMENT PLAN:

In General, following natural/industrial hazards may occur during normal operation.

- Inundation of mine pit due to flood/excessive rains :
- Slope failure of the pit and waste dumps
- Accident due to heavy mining equipment and
- Blasting and use of Explosives

Mining operation in the lease will be carried out under the management control and direction of a qualified mine manager. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be followed by the mine management in case of disaster. All these orders statutory rules and regulations will be followed. Seismically project site and study area falls in the Zone – II and is described as least active zone. There are no perennial water body near the lease area to cause any flooding. As such no disaster due to this project is envisaged.

In order to take care of above hazard / disasters the following control measures have been adopted.

- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Avoiding mining during heavy monsoon period and marching of all the HEMM to the top benches during rainy period.
- Provision of high capacity standby pumps with generator sets with sufficient quantity of diesel for emergency pumping especially during monsoon.
- All safety precautions and provisions of regulations will be strictly followed during all mining operations
- Prohibiting entry of unauthorized persons.
- Provision of Firefighting and first-aid provisions in the mines.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees for their use.

- Training and refresher courses for all the employees working in hazardous premises
- Observance of all safety precautions for blasting and storage of explosives as per MMR 1961.
- Working of mine, as per approved plans and regularly updating the mine plans
- Cleaning of mine faces regularly
- Proper storage, usage of explosives through competent persons.
- Regular maintenance and testing of all mining equipment as per manufacturers guidelines
- Suppression of dust on the haulage roads with frequent water sprinkling, etc.
- Increasing the awareness of safety and disaster through competitions, posters and annual safety weeks and environmental weeks, encouraged through suitable rewards and other similar drives.

The management and the EMC will be able to deal with the situations efficiently keeping in view of the likely sources of dangers in the mine.

7.4 REHABILITATION AND RESETTLEMENT (R & R) PLAN:

The mining activities will be carried out within the mine lease areas only. Mine lease areas are Patta lands. There is no population within the ML area. Hence, the question of R& R does not arise.

7.5 MINE CLOSURE PLAN:

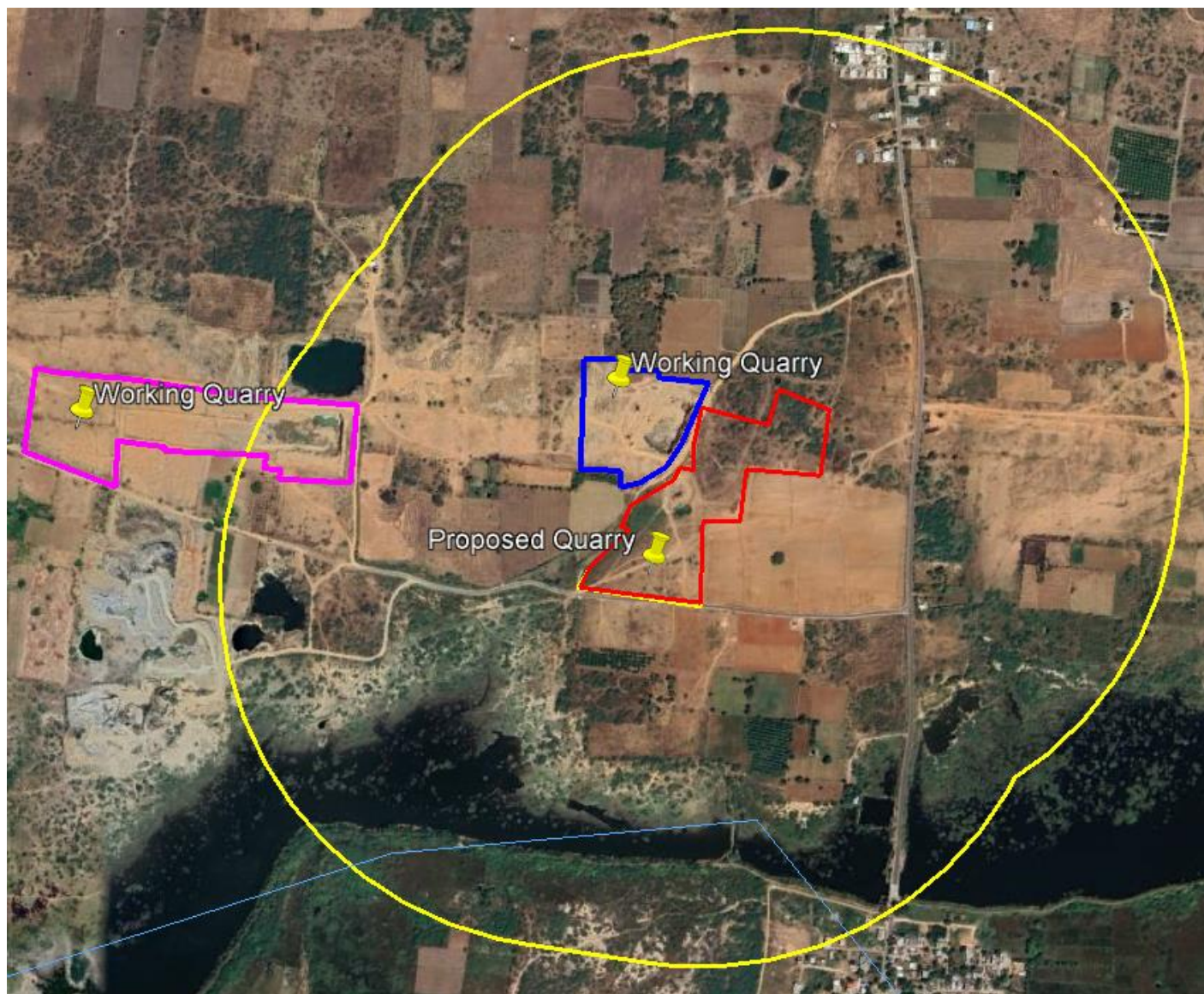
In the mine closure stage all necessary measures will be taken as per Act & Rules, There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of life of mine will be properly fenced all around to prevent inherent entry of public and cattle and all the statutory requirements will be fulfilled. As already explained, in the post mining stage the rainwater harvested in the mined out void shall be utilized for irrigation and domestic needs locally. The mine closure plan is provided in **Figure 4.5**.

7.6 CUMULATIVE IMPACT STUDY:

The lease area is located in Gopalapuram Village, Vembakottai Taluk, Virudhunagar, Tamil Nadu. The details of the other quarries located within the 500m radius of the project as per AD mines letter received then is given vide **Annexure-3**.

During the study, there are existing leases as shown in Figure 7.1 are identified.

Figure 7.1: Vicinity Map



The baseline monitoring carried out for this project reflects the cumulative impact of the existing quarries. It is observed that by ensuring systematic mining with proper mitigative measures as suggested in the report no adverse impact on the surrounding environment is envisaged. It is also worth mentioning that, these proposed quarry leases are more of a substitute for the recently expired quarry leases and as such cumulatively no additional pollution load may be there.

7.7 PIT SLOPE STABILITY PLAN

- Factors affecting slope stability of the mines are
 - Geological structure comprising dip, intervening shear zone formation, clay intrusion, joints / discontinuities, faults etc.,
 - Lithology of formation
 - slope geometry
 - Ground water availability which may cause increased thrust on the faces
- Site specific analysis
 - Since the formation is of homogeneous rock type probability of slope failure is low and can be avoided if proper measures are adopted.
 - There will be a 7.5m/10m wide barrier zone which will form a ridge which can also take care of the top section and as such no risk is envisaged on this front.
 - During future workings the following measures will be ensured:
 - Pruning of top worked out pit area and adopting proper bench pattern.
 - Regular inspection of the mine faces to be carried out by mines manager for ensuring absence of any structural features like faults, joints, dyke, intrusive material in the rock strata which may affect the slope stability and cleared.
 - No loose material or boulders is to be stacked on the mine top or pit benches.

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- Height of the benches should be 5m. Working bench width should be at least 2.5 times the bench height. Ultimate pit bench width will be 5m & slope is kept at 45° to ensure slope stability.
- Haul road formation will be at 1 in 16 slope with adequate road width with benches intact.
- There will be no ground water table intersection.
- No seepage is expected due to formation. Adequate drainage management system comprising peripheral garland drain, settling pond to regulate monsoon water will be created to prevent saturation of compact layers, apparent drainage over the bench slope to avert damages to quarry face and manage the water flow.

The above will ensure safe and stable mine prospects. Slope stability study is site specific and largely dependent on the geological formation of the local strata. As such, carrying out such special studies after commencement of mining operation with exposed rock of sufficient quantity, depth only is expected to deliver the desired results. Besides, during mining, such study will provide to arrive at the optimum bench slope parameters design. As such, scientific study through involving reputed institution will be carried out during the course of mining.

CONCLUSION:

No adverse impact on the surrounding environment is envisaged from these projects due to enforcing all the mitigative measures during mining.

Certified vehicles with low carbon emissions will only be used. 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.

Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed. There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact.



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It will be ensured that mining will be carried out adhering to all the statutory rules and regulations, appointing statutory personnel's like qualified mines manager, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures.

As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people, loss of Agriculture, Forestry and Traditional Practices is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc. Mine closure plan is prepared for the lease period and already included in the approved mine plan.

Hydrological investigation carried out and as given in Para 3.6 of Chapter III & para 4.3 Chapter – IV shows that the all-time ground water table in this area is much below the mining level. Hence, ground water intersection is not envisaged for the entire life of the mine and ground water will not be affected due to the quarrying operation. As such there will not be any adverse impact on the ground water regime. Besides, this being a mining project, there will be not be any process effluent. As mentioned earlier, the rainfall will be collected in the mine floor sump and gainfully used as per CGWA requirement. Excess water if any in the sump will be pumped to settling pond and supernatant clear water let out for downstream users.

It will be ensured that mining will be carried out adhering to all the statutory rules and regulations, appointing statutory personnel's like qualified mines manager, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures for the entire lease period.

* * * * *



CHAPTER 8 PROJECT BENEFITS

The proposed Rough stone and Gravel Quarries will improve physical and social infrastructures in the area like:

- Direct employment.
- Indirect employment to scores of people.
- Financial gains for the governments, through collection of various taxes like royalty, GST, etc.,
- Increase in General Awareness of the People.
- Continual improvements of the local amenities for the local society
- Improvement of the General Living Standard of the People in the Vicinity
- Overall Improvement in HDI (Human Development Index)
- Growth of Allied Industries in the Area.
- Improvement in Per Capita Income.
- Providing certain facilities for the local schools and panchyats

In short, the proposed Rough Stone Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, medical systems, infrastructural build-up, etc in its own way.

By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent have allocated Rs.5.0 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.

* * * * *



CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

Appendix-III of the MoEF notification S.O. 1533 dated 14.09.2006, which describes the generic structure of Environmental Impact Assessment document, states that the chapter 'Environmental cost benefit analysis' is applicable if it is recommended during scoping stage.

ToR for Rough stone and Gravel Quarry of was granted by SEIAA vide **TOR Identification TO25B0108TN5581105N dated 08.04.2025**. Environmental cost benefit analysis is not prescribed in the terms of reference. Hence, it is not applicable.

* * * * *



CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 INTRODUCTION:

This chapter describes the implementation strategies of the environmental management measures described through the course of this EIA/EMP report for the purpose of mitigating significant impacts due to the proposed mining operations separately in the leases.

10.2 COMPONENTS OF THE ENVIRONMENTAL MANAGEMENT PLAN:

The environmental management plan comprises identification of the major impacts due to project operations and their suitable mitigative measures. (Provided in an elaborate manner in Chapter-IV) Based on the environmental policy of the company, the environmental management cell will oversee the implementation of these mitigative measures. The details of the proponent's environmental policy, environmental management cell and also the budgetary allocation towards various environmental management measures has been elaborated in this chapter.

10.2.1 ENVIRONMENTAL POLICY:

The proponents will frame a well-planned environmental policy. The salient features of this policy will be.

- ❖ Ensuring risk-free and safe mining operations by following all rules and conditions prescribed in the Indian mines Act, metalliferous mining regulation, mineral conservation and development rules, etc,
- ❖ Ensuring environmental preservation by adoption of remedial measures for control of air, water quality, noise status, biological improvements, green belt creation, etc.,
- ❖ Extending CER activities to cater to the needs of local community for various benefits like improvement of physical and social infrastructures for the welfare of local community.

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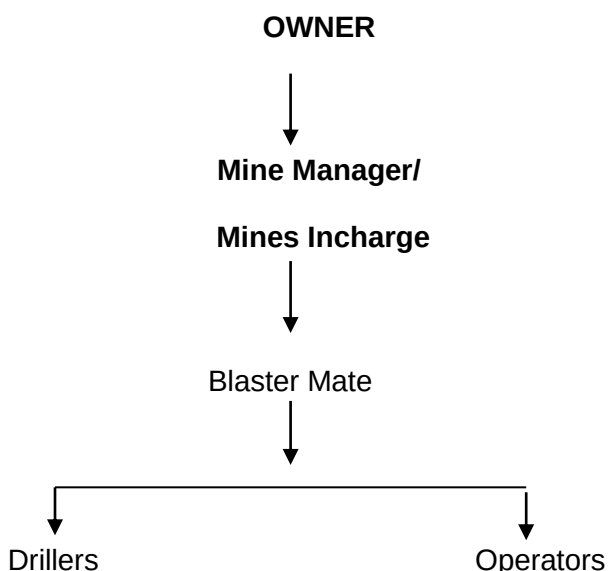
- ❖ Ensuring that all mining operations such as deployment of HEMM, conduct of drilling and blasting operations, etc are strictly conducted keeping with regulatory standards & maintaining safe working environment in the area.
- ❖ Providing periodical training on safety, Health, & Environment to all employers.
- ❖ Any infringement / violation of any rule or unsafe mining operations should be reported mines manager, should be reported by the foremen/ blaster mate etc, who will take immediate corrective measures for avoiding major disasters. The report will ultimately reach the owner through upwardly hierarchical communicative channels from the lowest level to superior levels in a quick time bound duration.
- ❖ The mines manager will exercise overall control over entire mining and connected operations and all infringements / violations on any count pertaining to unsafe operations, environmental degradation, etc, should be brought to the notice of the owner of the quarry. Remedial measures for such violations and deviations should be taken care by the mines manager to avoid any hazards or disasters in the mine and nearby areas. The persons responsible for such violations will be punished through appropriate disciplinarily penal actions.
- ❖ The EC conditions and stipulations will be strictly observed by Mines manager of the mine in various issues like prescribed environmental monitoring schedules conducting of vibratory studies due to blasting, creation of green belt, management of mined area, occupational health review, etc.
- ❖ Penalty actions will be taken by the proponent in cases of continuous negligence resulting in violations deviations in this respect.
- ❖ A time schedule of once in 90 days for review of all operational factors as mentioned above is to be enforced, for proper and quick corrective actions needed in the matter.



10.2.2 ENVIRONMENTAL MANAGEMENT CELL:

The Mines Manager/Mine Incharge of the respective mines will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. The organizational chart for the same has been provided below:

Figure 10.1: Organization Chart



The Mines Manager/Mines Incharge in the mine project site will be directly responsible for various environmental activities in the mine. The owner will correlate and oversee the environmental activities and their effective implementation in consonance with the guidelines in the EMP. The Mines Manager/Mines Incharge will oversee the environmental administration at the mine and he will directly supervise all activities of environmental administration on environmental issues. Necessary assistance from sub ordinates, external consultants and laboratories shall be taken.

Environmental control measures will span various factors like land degradation, air, water and soil quality, noise levels, effective land reclamation for excavated areas, afforestation measures, etc. The administrative functions are given below.

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- ❖ To observe the implementation of environmental control measures.
- ❖ To study the effects of project activities on the environment.
- ❖ To ensure implementation of Plantation Programme. Regular monitoring of survival rate of plants is carried out to achieve the desired result.
- ❖ To keep records of monitoring etc., in a systematic way, so as to facilitate easy access, when needed by statutory agencies, etc. Also send prescribed returns to statutory authorities.
- ❖ To ensure that adequate fencing and plantation is carried out in the safety zones.
- ❖ Conducting environmental studies and reporting to SPCB.
- ❖ To interact and liaise with Government Departments.
- ❖ To evaluate the performance of existing pollution control equipment and systems periodically and take timely action to keep the equipment at its optimum performance condition.
- ❖ To take immediate preventive action in case of some unforeseen environmental pollution attributable to the project.
- ❖ Conducting safety audits and programmes to create safety awareness in workers/ staff.
- ❖ Conducting annual health audits to detect any health problems promptly in the workers/staff. This will reduce occupational health problems.
- ❖ Imparting training on safety and conduct safety drills to educate employees. Firefighting equipment and system has to be kept in 'ready-to-fight' condition.
- ❖ Carrying out socio economic study in the surrounding areas to find out the benefits derived by the society due to the project and also to fulfill the deficiency, if any, immediately.
- ❖ Ensuring proper mine closure arrangements



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Considering the other mines in the cluster, the Environmental Management Cell of the project will also act as a Cluster Management Committee. The various activities undertaken to be undertaken by this committee are detailed below:

- Effective implementation of the environmental management measures in a holistic manner
- Devising an operation plan for mining and transportation activities.
- Various natural calamities like rain, flooding, evacuation plans etc. will also be deliberated by this committee to form risk management and emergency management plan pertaining to the cluster.
- The environmental policy of the company will be implemented and proper sustainable mining in accordance with statutory regulations will be enforced for the quarries in the cluster.
- Furnishing action plan regarding restoration strategy
- Deliberate on the health of the workers involved in the mining and also the health of the public
- Carrying out detailed study on the impact of mining on:
 - Soil health & biodiversity
 - Climate change leading to droughts, floods, etc.
 - Pollution leading to release of greenhouse gases (GHG) rise in temperature and livelihood of local people
 - Possibilities of water contamination and impact on aquatic ecosystem health.
 - Agriculture, Forestry & Traditional practices.
 - Hydro geothermal /Geothermal effect due to destruction in the Environment.
 - Bio-geochemical process and its footprints including environmental stress.
 - Sediment geochemistry



- Furnishing action plan to achieve sustainable development goals with regards to water, sanitation and safety.
- Furnishing fire safety and evacuation plans in case of fire accidents.
- Implementation of steps to effectively utilize energy.

10.2.3 ENVIRONMENTAL MANAGEMENT PLAN:

10.2.3.1 General:

Systematic monitoring systems and well-conceived and efficient Environment Management Plan will ensure that during the project operations, the various environmental parameters, are well within the statutorily sustainable limits. The environmental control measures proposed to keep various environmental parameters of the project in terms of air, water, noise, land, biological environment, etc. has been described below.

10.2.3.2 Air Quality:

With regards to air quality, to mitigate the fugitive and gaseous emission resulting from mining and allied activities, the following control measures are proposed to be undertaken in quarries:

- Regular water sprinkling in the transport roads using mobile tankers for dust suppression.
- Controlled blasting techniques with NONEL.
- Provision of dust filters / mask to workers working at highly dust prone and affected areas.
- Covering of drill holes with wet cloth, using sharp drill bits
- Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
- Proper maintenance of haul roads, HEMM and dumpers.
- Covering of loaded tippers with tarpaulins during transportation

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- Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
- Besides, there will be good green belt cover will be developed around mine periphery and in safety zone.
- Green netting will be carried out around the lease periphery on all sides.

10.2.3.3 Water Environment:

There will be no process effluent generated from either project. The domestic sewage to be generated will be collected in septic tank with soak pit arrangements. Besides, there will be no waste dumps or stockpiles within the lease areas as the entire material will be directly dispatched to the consumers.

Surface runoff management structures such as garland drain connected to a settling pond will be constructed around the quarries to collect the rain water. The supernatant clear water from the settling pond will be provided to nearby downstream users. Towards rainwater harvesting, the rainwater harvested in the mine will be used to meet the water requirements during mining and excess water in consultation with villagers and in line with government practices will be out in to the nearby stream or shall be distributed to the nearby villages as per their need.

There are no major perineal water courses in the leases. There is no proposal to discharge any effluent into either of these water bodies. No major impact is envisaged on the nearby water bodies due to project operations

10.2.3.4 Noise Environment:

During the project operations, various control measures as listed below will be carried out to mitigate adverse impact due to the noise generated due to mining and allied activities:

- Good plantation will be carried out in the safety zone areas
- Noise protectors, insulation of operator cabins, installation of silencers in machineries, etc.
- Proper and regular maintenance of equipments



- Providing earplugs to workers exposed to higher noise level.
- Providing in-built mechanism for reducing sound emissions.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.
- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.

10.2.3.5 Ground Vibration

During the project operations, various control measures as listed below will be carried out to mitigate adverse impact due to the ground vibration caused due to blasting activities:

- ❖ Controlled blasting techniques to maintain the peak particle velocity (PPV) below DGMS prescribed levels.
- ❖ Ideally formulating drilling and charging pattern and ensuring using less charge per delay.
- ❖ To contain fly rocks, stemming column will not be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- ❖ Blasting will not be carried out when strong winds are blowing towards the inhabited areas. Blasting will be done during midday time and never at night.
- ❖ Proper care and supervision during blasting by a competent and experienced person.
- ❖ Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance.

Further details regarding the same has been provided under section 4.4.2, Chapter-IV.

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10.2.2.6 Biological Environment:

The mining lease area and 10km buffer zone are devoid of declared ecologically sensitive features such as national parks, sanctuaries etc. There is no endangered or endemic species as per IUCN red list is observed. There will be no major clearance of vegetation involved in this project areas are free from major vegetation and contains bushes and shrubs only. However, good greenbelt and plantation programmes are planned within the lease area.

10.2.2.7 Socio-Economic Environment:

The proposed project operations will provide positive impacts in the region on the employment area as well as on physical and social infrastructural status. Many other tangible benefits will be gained by the local people in the surrounding areas due to ancillary units, trading operations, contractual needs, casual labor, green belt development, etc. Towards the socio-economic development of the surrounding area, the proponent have earmarked an amount of Rs.2.0 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner.

10.3 ENVIRONMENTAL POLLUTION CONTROL COST:

In this proposed quarry Implementation of environmental control measures as stated above involves capital as well as recurring expenses. The probable capital and recurring environmental control cost are calculated and given below

Table 10.1: Environmental Control Cost

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	0.40	0.40
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	8.00	0.50
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0.00	0.05
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	0.25	0.03
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0.00	0.02
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0.00	0.10



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Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	0.30	0.03
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0.00	0.05
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0.00	0.81
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	0.50	0.20
Sub-Total			9.45	2.19
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	-	-
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	-	-
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	-	-
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	-	-
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	-	-
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	-	-
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	-	-
	Provision for Portable blaster shed	Installation of Portable blasting shelter	0.50	0.20
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0.00	9.19
Sub-Total			0.50	9.39
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	0.25	0.20
		Installation of dust bins	0.05	0.02
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0.00	0.00
Sub-Total			0.25	0.20
Mine Closure	1. Progressive Closure Activity - Surface Runoff managent	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	0.4	0.2
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	8.08	0.4
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 2000 Trees - 800 Inside Lease	Site clearance, preparation of land, digging of pits / trenches, soil amendmets, transplantaion of	0.80	0.24



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Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
	Area & 1200 Outside Lease Area)	saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)		
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	1.80	0.36
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	1.66	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of peak production Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	6.36	0
Sub-Total			11.08	1.2
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	0.10	0.01
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0.00	0.50
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	0.64	0.16
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	0.00	0.16
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0.00	0.08
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0.10	0.01
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	0.1	0.02
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	2.02	0.10
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	0.3	0.05
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	7.8
Sub-Total			3.16	8.88
TOTAL			24.49	21.88



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Towards EMP measures, Rs.24.49 Lakhs is allocated under capital cost and Rs.21.88 Lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue and will be spent for the entire lease period.

10.4 CONCLUSION:

Since the production from this lease area is less, the number of equipments to be used, magnitude of operation and consequent impact on the surrounding environment is expected to be less and as such no significant impact on environment is envisaged. With meticulously well planned Environmental Management Plan, with various programme schedules and timely execution objectives, as above, it will be ensured that the future environmental quality in the area is well maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can go a long way to improve life pattern and living conditions of the local community around the project.

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CHAPTER 11

SUMMARY & CONCLUSION

11.1 INTRODUCTION:

Thiru. S. Devaraj propose to operate Rough Stone and Gravel Quarry at Survey No. 502/1,2(P), 510/1,2 & 511/1,2 over an area of 4.04.0 hectares in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu and has initiated action towards obtaining environmental clearance. Production Capacity 7,07,060 m³ of Rough Stone & 1,90,060 m³ of Gravel up to depth of 35 m for the period of ten years (Peak production capacity of 84,400 m³ of rough stone & 29,500 m³ of Gravel). Its details are as follows:

Table 11.1: Basic details of the project

1	Project Name	Rough stone and Gravel Quarry of S. Devaraj
2	Survey No.	502/1,2(P), 510/1,2 & 511/1,2
3	Extent	4.04.0 Ha
4	Production	The Proposed Production capacity is 7,07,060 m ³ of Rough Stone & 1,90,060 m ³ of Gravel up to depth of 35 m for the period of ten years.
5	Land ownership	Joint patta land owned by a applicant and his wife, Applicant got consent from his wife.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius cluster along with this subject project works out to >5 Ha. Hence, this proposal is considered under Category – B1 and as per MoEF & CC notification necessitates preparation of EIA/EMP report and public hearing. This EIA/EMP report for Thiru. S. Devaraj is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide TOR Identification No. TO25B0108TN5581105N dated 08.04.2025 and is in conformance of the generic structure prescribed by MOEF&CC in their notification of September 2006 and the approved mining plan.

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11.2 SALIENT DETAILS OF THE PROJECT:

Table 11.2: Salient details of the projects

Details	
A.Statutory Clearances	
Precise Area Communication	Issued by Department of Geology & Mining vide KV1/848/2021, Dated: 28.02.2022. (Annexure-1)
Mining Plan Approval	Approved Department of Geology & Mining vide Roc. KV1/848/2021, dated 05.04.2022 (Annexure-2)
Details of Quarries within 500m radius	Approved Department of Geology & Mining vide Roc. KV1/848/2021, dated 05.04.2022 (Annexure-3)
B. Application for Environmental Clearance	
Terms of Reference	TO25B0108TN5581105N dated 08.04.2025
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Summer Season (Mar 2025 – May 2025)
C.Site Details	
Location	Gopalapuram Village, Vembakottai Taluk, Virudhunagar District
Coordinates	Latitude : 9°21'08.4" N to 9°21'16.4" N Longitude: 77°37'14.5" E to 77°37'23.7" E
Nearest Village	Mettuvadakarai – 500m (S) side.
Nearest Town	Rajapalayam - 13.0km - NW
Nearest Railway Station	Rajapalayam - 13.0km - NW
Nearest Airport	Madurai -74km -NE
Accessibility	The area applied for quarry lease lies in 17km south side of Srivilliputhur & joins at Srivilliputhur to Vadakarai main road and 0.6km south of Gopalapuram
Topography	The lease area is a plain terrain, Massive formation of Charnokite is clearly visible in the old mined out pit and also the nearby quarry. The slope is gentle towards 'southern side.
D. Environmental Setting of the Study Area	
Nearest Water Bodies	Kanmai -20m-SW, Seasonal Drainage – 10m-W, Vaippar River - 1.6km – SE, Cholapuram River - 3.3km – W, Solasserri River - 3.7km – W, Karuva Nadi - 8.8km – SW, Marugal Odai - 1.8km – NE. Nedunkulam Odai - 8.6km – NE
Nearest Reserve Forests	Nil within 10 km radius
Notified Archaeologically important places, Monuments	Nil within 10km radius
Local Places of Historical and Tourism Interest	Nil within 10 km radius
Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972*	Nil within 10km radius
Other industries	Other than crushers, Rough stone quarries, Solar Panels, no other major industries are located in the study area.

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E. Technical Description	
Past production details	Fresh lease, no mining was carried out by the applicant.
Geological Reserves	13,96,800 m³ of rough stone & 2,32,800 m³ of gravel
Mineable Reserves	Rough stone - 7,07,060 m³ Gravel - 1,90,060 m³
Mining Method	Opencast mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers will be carried out.
Production	Production capacity of 7,07,060 m ³ of Rough Stone & 1,90,060 m ³ of Gravel up to depth of 35 m for the period of ten years. Production capacity for first 5 year is 3,43,500 m ³ of Rough Stone & 1,15,600 m ³ of Gravel up to depth of 30m
Waste Generation and Management	There is no waste generation anticipated in these quarries since the entire excavated material will be utilized.
Ultimate Depth	35 m
F. Project Requirements	
Manpower	16 persons directly and 50 people indirectly.
Water Requirement and Source	Water Requirement: 8 KLD Source: The required water will be procured initially from outside agencies. Later Rain water harvested in the mine sump can also be used.
Power Requirement	No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.
Site Services	This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.
Project Cost	Rs.63,17,780/-

Mining and its associated activities are only observed within 300m radius.



11.3 EXISTING ENVIRONMENTAL SCENARIO:

11.3.1 GENERAL:

The studies and data collection have been carried out systematically and meticulously as per relevant IS codes, CPCB and MoEF&CC guidelines and as per approved ToR during **Summer Season (Mar 2025 to May 2025)** For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. The lease area is considered to be the core zone while the buffer zone encompasses a 10km radius from the periphery of the core zone.

11.3.2 SOCIO-ECONOMIC STATUS:

The proposed Rough stone and gravel quarries are located in in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District. Based on 2011 census data, in the 10km radius there are 34 Rural villages from Five Taluks namely Rajapalayam, Srivilliputhur, Sivakasi, Sivagiri, and Sankarankoil and 2 urban areas of Rajapalayam Taluk namely Samusigapuram (CT), Sivakasi Taluk namely Alangulam (CT). The demographic profile of the study area is given below:

Table 11.3: Social, Economic And Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	89,852	49.90
Female Population	90,208	50.10
Total	180,060	100
B. Caste-wise population distribution		
Scheduled Caste	41483	23.04
Scheduled Tribes	311	0.17
Other	138,266	76.79
Total	180,060	100
C. Literate and Illiterate population		
Literate Males	70076	38.92
Literate Females	56671	31.47
Total Literate Population	126747	70.39
Others Males	19776	10.98
Others Females	33537	18.63

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Details	Population	Percentage
Others Population	53313	29.61
Total	180,060	100
D. Occupational structure		
Main workers	85582	47.53
Marginal workers	6873	3.82
Total Workers	92455	51.35
Total Non-workers	87605	48.65
Total	180,060	100

11.3.2.1 SAMPLE SURVEY:

Nearby villages were visited for conducting sample Village survey on all socio-economic aspects and requirements of the people. The existing socio-economic scenario is studied and CER activities are also suggested to the proponent. The study details are given in **Para 3.2.4, Chapter – III.**

11.3.3 EXISTING ENVIRONMENTAL QUALITY:

Table 11.4: Baseline Data

A. Meteorological Data			
Parameters	Minimum	Maximum	
Temperature In °c	22.0	39.0	
Humidity in %	19.7	97.0	
Wind speed in km/hr	<1.8	37.1	
Predominant wind direction from	NE		
B. Ambient Air Quality Data – 6 Locations			
Parameters	Core Zone	Buffer Zone	Limits
Particulate Matter (Size <10 µm)	51.9 – 64.7	44.4 – 68.0	100
Particulate Matter (Size <2.5 µm)	24.3 – 39.4	18.4 – 33.3	60
Sulphur Dioxide (as SO ₂)	5.3 – 8.7	3.9 – 8.8	80
Nitrogen Dioxide (as NO ₂)	7.6 – 11.3	6.6 – 11.6	80
Conclusion: The existing Ambient Air Quality levels for PM10, PM2.5, SO2 and NO2, are within the NAAQ standards prescribed CPCB limits. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m3)			



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C. <u>Water Quality</u> – 6 Locations			
pH at 25 °C	7.24 – 7.72	6.5-8.5	
Total Dissolved Solids, mg/L	250 – 590	2000	
Chloride as Cl-, mg/L	22.3 – 102	1000	
Total Hardness (as CaCO3), mg/L	184 – 312	600	
Total Alkalinity (as CaCO3), mg/L	125– 292	600	
Sulphates as SO42-, mg/L	12.1 – 186	400	
Iron as Fe, mg/L	0.03 – 0.07	0.3	
Nitrate as NO3, mg/L	2.34 – 7.21	45	
Fluoride as F, mg/L	0.22 – 0.63	1.5	
Conclusion: The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications.			
D. <u>Noise Levels</u> – 6 Locations			
Parameter	Core Zone	Buffer Zone	Limit
Day Equivalent	51.0	47.1 – 50.6	55
Night Equivalent	39.2	36.3 – 42.0	45
Comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.			
E. <u>Soil Quality</u> – 3 Locations			
Parameter	Buffer Zone		
pH	6.58 – 7.57		
Electrical Conductivity (µmho/cm)	89.74 – 106.5		
Organic matter (%)	2.54 – 3.12		
Total Nitrogen (mg/kg)	606 - 1125		
Phosphorus (mg/kg)	2.2 – 3.5		
Sodium (mg/kg)	765 – 1036		
Potassium (mg/kg)	570-775		
Soil is of Clay loam type.			

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F. Land Environment:

For the present study on land use pattern in the study area, remote sensing satellite data have been used. The area estimated of land use categories around the 10km buffer zone is provided below:

Table 11.5: Land Use in 10Km Buffer Zone

S.No	Land use Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	106.23	32.89
2	Fallow Land	97.77	30.27
3	Land With Scrub	76.96	23.83
4	Land Without Scrub	20.06	6.21
5	Water bodies	10.40	3.22
6	Settlement	10.82	3.35
7	Mining Area/ Industries	6.58	0.23
	Total	328.82	100

From the above table it is seen that 32.89 % of the study area is agriculture land and 30.27 % are fallow land. Land with scrub constitutes 23.83 %, lands without scrub constitute 6.21%, and waterbodies constitute 3.22%.

.Biological Environment:

Flora: The lease area is a non forest, private land & with thorny bushes only.

Buffer Zone comprise of agricultural land, rocky waste land, barren land and mined out pits. The Dominated species in the buffer zone Borassus flabellifer, Syzygium cumuni, Azadirachta indica Acacia auriculiformis, Albizia lebbeck, Prosopis juliflora, etc. The list of flora in the core and buffer zone is provided in Table No.3.24 and 25, Chapter-III.

Fauna: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals are commonly found. The lease and 10 Km buffer zone does not fall in the Western Ghats ESA boundary. From the study it observed that the area in general consists of species of least concern only. The area does not form the migratory path of the birds also. List of fauna within the study area is given in Table No – 3.26, Chapter-III.

H) HYDROLOGICAL STUDY:

The area applied for mining lease is a gentle plain terrain. There are no perennial water courses in the lease areas. There is a Kanmai is around 20m in southwest side and for seasonal drainage 10m safety has been left in West side of the lease area. Due to scanty rainfall the eri and the drainage channel remains dry for most of the year. Protective measure like embankment with plantation & Fencing. The groundwater has revealed that potential fractures are encountered at deeper levels. Rain water collected in the tanks in the region acts as a good source of water during post monsoon. The water in the wells are available mainly after post monsoon and it reduces during summer. Bore wells are as deep as 400 ft also and it reflects that the yield is only better at deeper water levels

The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. From the nearby working mines, no such seepage is also observed. The stage of groundwater development of Vembakottai where the study area falls is 58%. In view of this, this area can be categorized as 'Safe' from ground water development point of view.

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

11.4.1 GENERAL:

The identified impacts due to the mining operation of the leases individually as well as cumulatively during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc.,

11.4.2 AIR ENVIRONMENT:

The principal sources of air pollution in the area due to mining and allied activities are dust generation in the mine due to various activities such as excavation of material, movement of HEMM, loading, unloading and transportation operations.. Besides, Gas emission also occur as a result of emission of SO₂, NO_x, CO etc., from diesel driven mining equipment, compressors, generator sets, etc. The following measures will be adopted to control impact on the air quality due to mining operations in the lease area:



Table 11.6: Mitigation Measures – Air Environment

S.No	Activity	Mitigation Measures
1	Drilling	Usage of Drill bits in good condition
		Covering of drill holes with wet cloth
		Usage of sharp drill bits for drilling of holes.
		Provision of dust filters / mask to workers working at highly dust prone and affected areas.
2	Blasting	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
		Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
		Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
		Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Proper maintenance of HEMM
		Enclosures for operator cabin.
		Imparting sufficient training to operators on safety and environmental parameters.
		Proper maintenance of hauling equipments.
		Avoiding overloading of dumpers.
4	Transportation	Regular wetting of transport road using mobile water tanker.
		Proper maintenance of haul road and other roads
		Setting up of tyre wash facility in the transport road.
		Avoiding overloading of tippers
		Covering of loaded tippers with tarpaulins during transportation
		Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
5	Others	Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
		Fencing with green net as necessary will be carried out around the lease periphery on all sides

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Due to adoption of all these measures, no major impact on air quality is envisaged due to this proposed opencast mining operation.

The impact on air quality through model simulations are done using AERMOD View Gaussian Plume Air Dispersion Model for the air pollutant arising from the mining operations, namely, PM₁₀, PM_{2.5}. **Ground Level Concentration (GLC)** have been computed .

It can be seen, the resultant added concentrations with baseline figures with respect to PM₁₀ is in the range of 52.2 µg/m³ to 69.0 µg/m³ and with respect to PM_{2.5} are in the range of 25.6µg/m³ to 40.4 µg/m³, which are within the stipulated statutory limits for the projects.

For preservation of environment in this mine strict enforcement of management schemes will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operation in this lease area is expected.

11.4.3 WATER ENVIRONMENT:

The water requirement for this project is expected to be 8 KLD comprising 1.0 KLD for drinking water and domestic use, 5.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the respective mine pit sump will be used for this purpose.

The activity / source of pollution, its impact / consequence, proposed control measures are explained below:

Table 11.7: Mitigation Measures – Water Pollution

S.No	Source	Consequence	Mitigation Measures
A	Domestic use	Generation of waste water	The domestic sewage to be generated from the project will be collected in septic tank with soak pits.
B	Rainfall	Runoff from waste dump and stack	Towards surface runoff management, a garland drain of length 1050 m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will flow to the downstream users.
		Rainwater Harvesting	The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge if any.



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C	Drainage Course	Disturbance to drainage course	There is a Kanmai is around 20m in southwest side and for seasonal drainage 10m safety has been left in West side of the lease area. Due to scanty rainfall the eri and the drainage channel remains dry for most of the year. Protective measure like embankment with plantation & Fencing. By proper surface runoff management, ensuring proper flow of rainwater for downstream users will be ensured. There is no proposal to discharge any effluent into this waterbody. As such no major impact is envisaged on the nearby water bodies due to project operations.
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Stage of Groundwater Development: The groundwater resource data of Virudhunagar district was obtained from the data provided in the technical report of the Central Ground Water Board, South Eastern Costal Region – ‘District groundwater brochure, Virudhunagar District.’ Based on the report it is seen that that the stage of groundwater development of Vembakottai where the study area falls is 58% and as such this area can be categorized as ‘Safe’ from ground water development point of view. Thus there is scope for further ground water development.

- **Generation of mine pit water:** The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous both in space and depth. Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of weathering. In the nearby region, the formations are compact with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. Besides, the ground water potential in the region is low. The ultimate pit depth of mining is 35m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.

11.4.4 NOISE ENVIRONMENT:

Anticipated noise levels resulting from operation of the various machineries like excavator, tippers, drill have been computed using point source model. Computation of cumulative noise levels at the nearby villages is made based on the assumption that there are no attenuation paths between the source and the boundary. From the studies, it is found that the predicted



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Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Since the habitations are also away the effect of noise due to mining operations will not be felt at all in the surrounding village. Hence, by implementing the following mitigative measures for noise control, the impact on noise levels will continue to be insignificant:

- Planting rows of native trees along roads, around mine area and other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.
- Providing earplugs to workers exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.

Further green belt and afforestation will be planned and executed to abate noise and dust propagation in the area.

11.4.5. VIBRATION:

Since the production from this lease is less, the number of holes and total charge to be used is expected to be less and as such the blast induced vibration is easily controllable and by ensuring the following control measures, no adverse impact on this front is expected:

- 1) Carrying out controlled blasting using Nonel delay detonator.
- 2) Optimum design for burden and spacing.
- 3) Reducing explosive charge per delay to minimum.
- 4) The peak particle velocity (PPV) of ground vibration will be kept very low through optimally controlled blasting techniques, after necessary field trials.
- 5) To contain fly rocks, stemming column to be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.



- 6) Blasting will not be carried out when strong winds are. Blasting will be done during midday time.
- 7) Controlled blasting to avoid tension cracks which may endanger the stability of bench slopes in the mine.
- 8) Proper care and supervision during blasting by a competent and experienced person to be carried out.
- 9) Adopting different blast timing for the leases in the cluster

By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad at the mining areas vide Circular No. 7 dated 29 -08-1997. Elaborate details regarding the same are provided under section 4.4.2, Chapter-IV.

11.4.6 IMPACT ON LAND ENVIRONMENT:

There is no waste generation anticipated in these quarry operations since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Plantation will be carried out in this safety zone area. In the post mining stage, entire 3.80.0 Ha will be used as mined out area up to 35m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.18.0 Ha will be covered with vegetation and 0.04.00 will be fencing. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined out void shall be utilized.

11.4.7 BIOLOGICAL ENVIRONMENT:

Leased and its nearby area is of dry rocky type with very little vegetation. Necessary mitigative measures like dust suppression, proper maintenance of equipment's, greenbelt and plantation etc., will be carried out to prevent dust generation & any further impact on the vegetation. About 2000 trees will be planted in and around the lease area.

11.4.8 SOCIO ECONOMIC ENVIRONMENT:

The entire lease area is a private patta land. Hence, there are no habitations or hutments in the core zone area and no rehabilitation or resettlement is involved. The mining operations in the proposed mines will each employ about 16 persons directly and about 50 persons. Besides

through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service-related activities connected with the project operations.

Towards the socio-economic development of the surrounding area, Rs.5.0 Lakhs is allocated for the project. The activities identified under CER will be implemented in a phased manner in provision of facilities in nearby Government School.

11.4.9 OCCUPATIONAL HEALTH AND SAFETY ASPECTS:

In order to ensure minimisation of occupational health and safety problems in the project operation, the following preventive remedial measures will be effectively exercised in the project operations, so as to comply with applicable standards.

- Medical examination of workers at pre-entry level stage of workers, etc., by qualified doctors, with periodical examination of all workers/staff at least once a year, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers
- Staff will be provided with PPE to guard against excess noise levels, Dust generation and inhalation, etc., as per standards prescribed by DGMS.

11.4.10 IMPACT ON LOCAL LOGISTICAL SYSTEM DUE TO PROJECT:

From this proposed quarry the entire output will be transported to the consumers like external crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Since the productivity is less, there will be about 4 trips per hour. The transport route can absorb this negligible traffic due to this project. The following mitigative measures are suggested for mitigation of adverse impacts on the logistical aspect of the project:

- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Plantation on either side of the transport road in consultation with the concerned department.
- ❖ Proper maintenance of transport roads and vehicles
- ❖ Avoiding overloading of material

- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.
- ❖ Installation of barriers at vulnerable locations
- ❖ Provision of tyre washing facility at the mine outlet

11.4.11 WASTE MANAGEMENT:

Since the entire mined out material will be used there will not be any solid waste generation from this project. There is no process effluent generation from the mines. Hence no liquid waste is generated.

The hazardous waste generated will be stored in a separate storage area with impervious containers for waste oil, oil contaminated clothes, used lead acid batteries, scraps, tyre storage etc. It will be disposed through authorized recyclers or re-processors periodically. The hazardous wastes will be transported in accordance with the provisions of rules. By effective implementation of above said mitigation measures no major impact due to Hazardous waste is expected.

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.

11.5 ENVIRONMENTAL MONITORING PROGRAMME:

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits.

Monitoring location and the frequency of monitoring shall be suitably modified in consultation with the nodal agency as per the actual requirements and prevailing conditions of the mine and environmental factors, as dictated from time to time, depending on the prevailing pollution levels, if required.

Towards EMP measures, Rs. 24.49 Lakhs is allocated under capital cost and Rs. 21.88 Lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue and will be spent for the entire lease period.

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Further details of the capital and recurring cost of environmental management have been provided in in Table No. 10.2, Chapter-X.

11.6 ADDITIONAL STUDIES:

This draft EIA/EMP report will be submitted for public hearing as per mandatory procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu. Elaborate description in respect of Risk Assessment and Mine closure plan are given in **Chapter - VII**.

11.7 CONCLUSION:

Since the production from this lease area is less, the number of equipment's to be used, magnitude of operation and consequent impact on the surrounding environment is expected to be less and as such no significant impact on environment is envisaged. With meticulously well planned Environmental Management Plan, with various programme schedules and timely execution objectives, as above, it will be ensured that the future environmental quality in the area is well maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can go a long way to improve life pattern and living conditions of the local community around the project.

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CHAPTER 12

DISCLOSURE OF CONSULTANTS ENGAGED

Creative engineers & consultants, Chennai is an **NABL** accredited testing laboratory and **NABET** accredited EIA consultancy. Established over 25 years ago, this company has steadily made good strides in the environmental impact assessment fields, and is also one of the first companies to get accredited by **NABET** as an accredited consultant organization as early as 2011. **Creative engineers & consultants** has to its credit, successful completion of numerous EIA/EMP reports, grant of environmental clearances and periodic environmental monitoring works. Presently, the company has been accredited by **NABET** as a 'Category-A' organization for the sectors of mining of minerals (opencast only), thermal power plants, mineral beneficiation and cement plants with the accreditation valid upto 23.12.2026. The team of experienced professionals that are a part of this organization has been detailed below.

Figure 12.1: disclosure of consultants engaged

Expert name	Qualification	Position	Experience
Mr. P. Giri	AMIE (mining)	EIA coordinator & Functional area expert (AP,NV,HW),	Over 30 years of experience in eia/emp report, mine plan preparation, including modeling
Mr. K. Shankar	M.sc (geology). Pgmemg	Functional area expert (GEO, HG, SHW, RH) & IBM approved RQP.	Over 25 years of experience in eia/emp report, mine plan, hydrological report preparation
Mr.S.S.rajendran	M.sc. (pharmaceutical chemistry)	Lab head	More than 9 years of experience in environmental laboratory.
Mr. R. Babu raj	M.a (sociology), B.com(y.l&cost), Iti, advance diploma in computer application	Functional area expert (socio economy)	Over 13 years of experience in dispersion modeling, computer applications. Specialized in cad and computer software, applications. 5years experience in the field of socio economy



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Expert name	Qualification	Position	Experience
			and its allied report preparation.
Mr. B. Govindaraman	B.sc.	Field technician	Over 20 years of field monitoring & data collection experience
Dr.B.Swamynathan	M.Sc (Ecology & Environmental Sciences), M.Phill (Botany), Ph.D (Ecology & Environmental Sciences)	EIA Coordinator & Functional area expert (EB,SC,LU&AP)	More than 14 years of experience in environment and allied fields.
Ms. G. Sandhya	B. Tech chemical engineering M.tech environmental engineering	EIA Coordinator & Functional area expert (AQ&WP)	Over 6 years experience in preparation of eia/emp reports

* * * * *





புவியியல் மற்றும் சுரங்கத்துறை

உதவி இயக்குநர் அலுவலகம்,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
விருதுநகர்.

ந.க.எண். கேவி 1/848/2021 -கனிமம்,

நாள் : 28.02.2022

குறிப்பாணை

பொருள் : கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம் -
வெம்பக்கோட்டை வட்டம் - கோபாலபுரம் கிராமம் - பட்டா புல
எண்கள் : 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50),
511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (2.18.00)
மொத்தப்பரப்பு 4.67.50 ஹெக்டேர் - பத்துவருடங்களுக்கு
உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கல் - சரியான
பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம்
மற்றும் மாநில ஆளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு
ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது -
தொடர்பாக

- பார்வை :
1. திரு. சு. தேவராஜ், த/பெ. கே ஆர் சுப்பையா சென்னை -
600026 விண்ணப்பம் நாள் : 06.10.2021.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி 1/848/2021/நாள்
08.10.2021.
 3. சாத்தூர் வருவாய் கோட்டாட்சியர் கடிதம் எண் :
மூ.மு. அ 2/5558/2021 நாள்: 19.01.2021.
 4. திரு.சு. தேவராஜ், த/பெ. கே. ஆர். சுப்பையா,சென்னை
600026 கடிதம் நாள் : 04.02.2022.
 5. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை
புலத்தணிக்கை அறிக்கை நாள் : 05.02.2022.
 6. 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை
விதிகள் 41 மற்றும் 42.
 7. அரசாணை எண். 169 தொழில் (எம்.எம்.சி.1) துறை,
நாள் 04.08.2020.
 - 8 அரசாணை எண். 169 தொழில் (எம்.எம்.சி. 1) துறை, நாள்
21.09.2020.
 9. தொடர்புடைய ஆவணங்கள்.

Sevan A1



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புல எண்கள் 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (2.18.00) மொத்தப்பரப்பு 4.67.50 ஹெக்டேர் - 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி சென்னை, வடபழனி, நெற்குன்றம் பாதை, ஜி 2-கிருஷ்ணன் காலனி, கதவு எண்:19/29 என்ற முகவரியில் குடியிருந்து வரும் திரு.சு.தேவராஜ், த/பெ. கே.ஆர். சுப்பையா என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை சமர்பித்துள்ளார்.

சாத்தூர் வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோர் கீழ்காணும் நிபந்தனைகளுக்குட்பட்டு மேற்கண்ட புலங்களில் உடைகல், கிராவல் குவாரி குத்தகை உரிமம் பத்தாண்டுகளுக்கு வழங்க பரிந்துரை செய்துள்ளனர்.

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. வாய்கால், ஓடைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்ய வேண்டும்.
3. பொதுமகள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேண்பட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.



இதற்குகிடையில் 04.02.2022 தினத்தில் விண்ணப்பதாரர் அளித்த மனுவில் புல எண் 502/2 (2.18.00) ஹெக்டோ பரப்பளவில் 0.63.50 ஹெக்டோ பரப்பினை நீக்கி எஞ்சியுள்ள 502/2 (1.54.50) பரப்பளவில் குவாரி செயல்பட மனு அளித்துள்ளார்.

எனவே, துறை அலுவலர்களின் பரிந்துரை மற்றும் விண்ணப்பதாரரின் கோரிக்கையினை ஏற்று விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புல எண்கள்: 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.50) மற்றும் 502/2 (1.54.50) மொத்தப்பரப்பு 4.04.00 ஹெக்டோ நிலத்திற்கு 1959-ம் வருடத்திற்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண் 19 மற்றும் 20-ன் படி பத்து வருடகாலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise area) கருதப்படுகிறது.

தமிழ்நாடு சிறுகனிம சலுகை விதிகள் - 1959 விதி எண் : 41-ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining plan) 90 தினங்களுக்குள் சமர்ப்பிக்குமாறும், விதி எண் : 42-ன் படி மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental impact assessment authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு. சு. தேவராஜ் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்

பெறுநர்

திரு.சு.தேவராஜ்,
த/பெ. கே. ஆர். சுப்பையா,
கதவு எண் : 19/29,
ஜி 2- கிருஷ்ணன் காலனி,
நெற்குன்றம் பாதை, வடபழனி,
சென்னை.

நகல்

உறுப்பினர் செயலர்,
மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA),
சென்னை.

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From

Thiru.T.Selvasekar, M.Sc.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

Thiru.S.Devaraj,
S/o.Sri.K.R.Subbiah,
19/29, G2.Krishnan Colony,
NerkundramPathai,
Vadapalani,
Chennai - 600 026.

Roc.No: KV1/848/2021, Dated: 05.04.2022.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District -Vembakkottai Taluk - Gopalapuram Village - Patta Land - S.F.Nos: 510/1, 510/2, 511/1, 511/2, 502/1, 502/2 (Part) - Extent 4.04.00 Hectares - Quarry lease application preferred by Thiru.S.Devaraj for quarrying Rough Stone and Gravel - Approval of Mining Plan - Regarding.

Ref: 1. Quarry lease application received from Thiru.S.Devaraj dated: 06.10.2021.
2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/848/2021, Dated: 28.02.2022.
3. Thiru.S.Devaraj letter, dated:05.04.2022.

Thiru.S.Devaraj has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 4.67.5 Hectares of Patta Land in S.F.Nos: 510/1, 510/2, 511/1, 511/2, 502/1, 502/2 (Part) (1.54.50 Ha) of Gopalapuram Village, Vembakkottai Taluk, Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 4.04.00 Hectares of Patta Land in S.F.Nos: 510/1, 510/2, 511/1, 511/2, 502/1, 502/2 (Part) (1.54.50 Ha) (out of 2.18.00 Ha)for a period of 10 years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per guidelines issued by the Commissioner of Geology and Mining and as per Rules and Acts. The Geological and Mineable reserves are discussed in Part - A 3. The applicant can quarry the mineral in the following measurements:-

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80.1

GEOLOGICAL RESERVES (As per Mining Plan)

MINERAL	SECTION	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLIUOME IN CUM	TOTAL VOLUME IN CU.M.
GRAVEL	PQ-AB	180	136	5.0	1,22,400	2,32,800
	PQ-CD	184	120	5.0	1,10,400	
ROUGH STONE	PQ-AB	180	136	30.0	7,34,400	13,96,800
	PQ-CD	184	120	30.0	6,62400	
TOTAL GEOLOGICAL RESERVES					16,29,600	

MINEABLE RESERVES (As per Mining Plan)

MINERAL	SECTION	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLUME IN CUM	MINEABLE RESERVES IN CUM
GRAVEL	PQ-AB	I	170	118	5.0	1,00,300	1,90,060
	PQ-CD	I	176	102	5.0	89,760	
ROUGH STONE	PQ-AB	II	165	108	5.0	89100	3,84,100
	PQ-AB	III	160	98	5.0	78400	
	PQ-AB	IV	155	88	5.0	68200	
	PQ-AB	V	150	78	5.0	58500	
	PQ-AB	VI	145	68	5.0	49300	
	PQ-AB	VII	140	58	5.0	40600	
	PQ-CD	II	171	92	5.0	78660	3,22,960
	PQ-CD	III	166	82	5.0	68060	
	PQ-CD	IV	161	72	5.0	57960	
	PQ-CD	V	156	62	5.0	48360	
	PQ-CD	VI	151	52	5.0	39260	
	PQ-CD	VII	146	42	5.0	30660	
TOTAL MINEABLE RESERVES							8,97,120 Cu.M.

Production Schedule For 10 Years (As per Mining Plan)

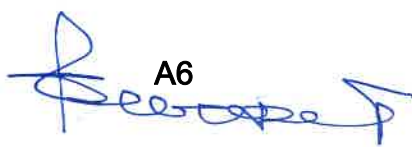
YE AR	SECTIO N	BEN CH	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLUME IN CUM		TOTAL PRODUCTION IN CUM
						GRAVEL	ROUGH STONE	
I	PQ-AB	I	50	118	5.0	29500	----	88,800
	PQ-AB	II	45	108	5.0	----	24300	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	35	88	5.0	----	15400	

II	PQ-AB	I	40	118	5.0	23600	----	90,200
	PQ-AB	II	40	108	5.0	----	21600	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	40	88	5.0	----	17600	
	PQ-AB	V	20	78	5.0	----	7800	
III	PQ-AB	I	40	118	5.0	23600	----	90,200
	PQ-AB	II	40	108	5.0	----	21600	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	40	88	5.0	----	17600	
	PQ-AB	V	20	78	5.0	----	7800	
IV	PQ-AB	I	40	118	5.0	23600	----	90,200
	PQ-AB	II	40	108	5.0	----	21600	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	40	88	5.0	----	17600	
	PQ-AB	V	20	78	5.0	----	7800	
V	PQ-CD	I	30	102	5.0	15300	----	99,700
	PQ-AB	V	90	78	5.0	----	35100	
	PQ-AB	VI	145	68	5.0	----	49300	
FIRST FIVE YEAR PRODUCTION (I TO V)						115600	343500	4,59,100
VI	PQ-CD	I	30	102	5.0	15300	----	89,100
	PQ-CD	II	60	92	5.0	----	27600	
	PQ-CD	III	60	82	5.0	----	24600	
	PQ-CD	IV	60	72	5.0	----	21600	
VII	PQ-CD	I	30	102	5.0	15300	----	92,800
	PQ-CD	II	30	92	5.0	----	13800	
	PQ-CD	III	30	82	5.0	----	12300	
	PQ-CD	IV	30	72	5.0	----	10800	
VIII	PQ-AB	VII	140	58	5.0	----	40600	89,400
	PQ-CD	I	30	102	5.0	15300	----	
	PQ-CD	II	30	92	5.0	----	13800	
	PQ-CD	III	30	82	5.0	----	12300	
	PQ-CD	IV	30	72	5.0	----	10800	
IX	PQ-CD	V	120	62	5.0	----	37200	89,100
	PQ-CD	I	30	102	5.0	15300	----	
	PQ-CD	II	30	92	5.0	----	13800	
	PQ-CD	III	30	82	5.0	----	12300	
	PQ-CD	IV	30	72	5.0	----	10800	
	PQ-CD	V	10	62	5.0	----	3100	
X	PQ-CD	VI	130	52	5.0	----	33800	77,620
	PQ-CD	I	26	102	5.0	13260	----	
	PQ-CD	II	21	92	5.0	----	9660	
	PQ-CD	III	16	82	5.0	----	6560	
	PQ-CD	IV	11	72	5.0	----	3960	
	PQ-CD	V	26	62	5.0	----	8060	
	PQ-CD	VI	21	52	5.0	----	5460	
NEXT FIVE YEAR PRODUCTION (VI TO X)						74460	363560	4,38,020
TOTAL PRODUCTION						1,90,060	7,07,060	8,97,120

The available mineable reserves have been computed as **897120m³** as Rough Stone, Gravel as **190060 m³** up to the depth of **35m** from the ground level.

The Environmental Management Plan and Mine closure plan are discussed Part - B 9& 10 and all conditions has been incorporated in the Mining Plan as laid down by the authorities.

A6

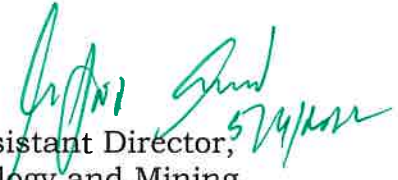


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4) In view of the above, in exercise of the powers delegated under Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the Mining Plan submitted by Thiru.S.Devaraj for quarrying Rough Stone and Gravel over an Extent of 4.04.00 Hectares of Patta Land in S.F.Nos: 510/1, 510/2, 511/1, 511/2, 502/1, 502/2 (Part) (1.54.50 Ha) of Gopalapuram Village, Vembakkottai Taluk, Virudhunagar District for a period of 10 years to obtain Environment Clearance from SEIAA, Chennai subject to the following conditions:

1. The Mining Plan is approved without prejudice to any other law applicable to the quarry permission from time to time where such Laws are made by the State Government or any other authority.
2. This approval of the Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959.
3. The Mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
4. 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) Amendment Act, 2015 or any other connected Laws including, Environment Protection Act, 1986, and the Rules made there under in Tamil Nadu Minor Mineral Concession Rules, 1959.

Encl: Two copies of Mining Plan.


Assistant Director,
Geology and Mining,
Virudhunagar.

Copy to:

The Member Secretary,
State Level Environmental Impact
Assessment Authority,
PanagalMaligai,
No. 1 Jeenis Road,
Saidapet, Chennai-15.


05/04/2022

From

Thiru.T.Selvasekar, M.Sc.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

Thiru.S.Devaraj,
S/o.Sri.K.R.Subbiah,
19/29, G2.Krishnan Colony,
NerkundramPathai,
Vadapalani,
Chennai – 600 026.

Roc.No: KV1/848/2021, Dated: 05.04.2022.

Sir,

Sub: Mines and Minerals - Minor Mineral -
Virudhunagar District – Vembakkottai Taluk –
Gopalapuram Village – Patta Land - S.F.Nos:
510/1, 510/2, 511/1, 511/2, 502/1, 502/2
(Part) (1.54.50 Ha) – Extent 4.04.00 Hectares –
Quarry lease application preferred by
Thiru.S.Devaraj for quarrying Rough Stone
and Gravel - Details of quarries in 500 meter
radius - Regarding.

Ref: 1. Quarry lease application received from
Thiru.S.Devaraj dated: 06.10.2021.
2. The Assistant Director, Geology and
Mining, Virudhunagar
Rc.No.KV1/848/2021, Dated: 28.02.2022.
3. Thiru.S.Devaraj letter, dated: 05.04.2022.

Thiru.S.Devaraj has preferred an application for the grant of quarrying
lease to quarry Rough Stone and Gravel over an extent of 4.67.50 Hectares
of Patta Land in S.F.Nos: 510/1, 510/2, 511/1, 511/2, 502/1, 502/2 (Part)
(1.54.50Ha) of Gopalapuram Village, Vembakkottai Taluk for a period of 10
(Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules
1959.

The applicant Thiru.S.Devaraj in the reference 3rd cited has requested
to furnish details of quarries situated within 500 m radial distance from the
applied area.

In this connection, it is informed that the details of quarry situated
within 500 meter radius from the proposed area for Environmental
Clearance as detailed below:

1) Details of quarry within 500 m radius from the applied area

S. No	Quarry detail	Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	Existing Quarries: Nil			
II	Abandoned Quarry : Nil			
III	Present Proposed Quarry :			
1.	Thiru.S.Devaraj S/o, Subbaiah	Gopalapuram	510/1, 510/2, 511/1, 511/2, 502/1, 502/2 (Part) (4.04.00)	KV1/848/2021 Dated:28.02.2022.
	Thiru.A.Seethakumar S/o. Arumugam	Gopalapuram	532/2C, 533/1, 533/, 533/3 533/4, (2.12.5)	KV1/.638/2020 Dated: 18.11.2020
			6.16.50	


**Assistant Director,
Geology and Mining,
Virudhunagar.**

Copy to:

The Member Secretary,
State Level Environmental Impact
Assessment Authority,
PanagalMaligai,
No. I Jeenis Road,
Saidapet,
Chennai-15.


05/04/2022



MINES LAND PHOTO



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புலன்கள். 502/1,2p, 510/1,2 & 511/1,2 ஆக மொத்தம் 4-04.00 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/848/2021-கனிமம் நாள் 28.02.2022ன் படி திரு. சு. தேவராஜ், த/பெ. கே.ஆர். சுப்பையா அவர்கள் மனு செய்துள்ளார். மேற்படி இடம் உடைகல், ஜல்லி மற்றும் கிராவல் வெட்டி எடுப்பதற்கு அங்கீகரிக்கப்பட்ட இடம் என்பதை இதன் மூலம் சான்றளிக்கிறேன்.

மேற்படி இடத்திற்கு செல்வதற்கு அணுகுபாதை வசதி உள்ளது என்றும் சான்றளிக்கிறேன்.

இடம்: கோபாலபுரம்

நாள்: 24-03-2022

(Signature) 24/03/2022
கிராம நிர்வாக அலுவலர்
கோபாலபுரம் கிராம
வெம்பக்கோட்டை வட்டம்.

(Signature)
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கிராம நிர்வாக அலுவலரின் சான்று

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புலஎண்கள். 502/1,2p, 510/1,2 & 511/1,2 ஆக மொத்தம் 4-04.00 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/848/2021-கனிமம் நாள் 28.02.2022ன் படி திரு. சு. தேவராஜ், த/பெ. கே.ஆர். சுப்பையா அவர்கள் மனு செய்துள்ளார். இவர் ஆரம்பிக்க உள்ள உடைகல், ஜல்லி மற்றும் கிராவல் குவாரி இடத்திற்கு செல்ல போதிய அணுகுபாதை வசதி உள்ளது மேலும் நிலத்தை சுற்றி 300மீட்டர் சுற்றளவில் குடியிருப்புகள், கோயில்கள், பள்ளிக்கூடம் ஏதும் இல்லை.

மேற்படி புல எண்கள். மேற்படி கிராம கணக்கு தடை ஆணை புத்தகத்தில் இடம் பெறவில்லை. மேலும் 10கி.மீ. சுற்றளவில் பிற மாவட்ட எல்லையோ, மாநில எல்லையோ இடம்பெறவில்லை. மேற்படி சான்று கனிமவளத்துறைக்கு அளிக்கும் வகைக்காக வழங்கப்படுகிறது.


24/03/2022
கிராம நிர்வாக அலுவலர்
கிராம நிர்வாக அலுவலர்.
வெம்பக்கோட்டை வட்டம்.



A11

POPULATION BREAKUP & LITERACY LEVEL IN THE BUFFER ZONE

Sl.No	Name of village	Rural / urban	HOUSE HOLDS	POPULATION			POPULATION BELOW 6 AGE GROUP			SCHEDULE CASTE			SCHEDULE TRIBE			LITRERATES			OTHERS		
				TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F. MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE
0-2 km,Rajapalayam Sub-District, Virudhunagar District																					
1	Varagunaramapuram	Rural	385	1357	696	661	142	67	75	97	44	53	0	0	0	823	489	334	534	207	327
2	Gopalapuram	Rural	423	1461	708	753	128	61	67	385	189	196	0	0	0	1051	572	479	410	136	274
3	Kuruchiarpatti	Rural	205	741	361	380	62	30	32	115	51	64	0	0	0	588	315	273	153	46	107
	Sub total (A)		1013	3559	1765	1794	332	158	174	597	284	313	0	0	0	2462	1376	1086	1097	389	708
2-5 km,Rajapalayam Sub-District, Virudhunagar District																					
4	Sholapuram	Rural	3248	11607	5830	5777	1147	610	537	3283	1640	1643	0	0	0	8147	4493	3654	3460	1337	2123
5	Nathampatti	Rural	590	2143	1093	1050	209	117	92	467	227	240	0	0	0	1460	853	607	683	240	443
6	Vadagarai	Rural	992	3454	1720	1734	316	156	160	91	42	49	0	0	0	2539	1413	1126	915	307	608
7	Tenkarai	Rural	272	918	454	464	93	49	44	296	140	156	0	0	0	683	363	320	235	91	144
Rajapalayam Sub-District, Virudhunagar District																					
8	Ramalingapuram (CT)	Urban	1391	4505	2252	2253	477	240	237	416	213	203	0	0	0	3233	1810	1423	1272	442	830
	Sub total (B)		6493	22627	11349	11278	2242	1172	1070	4553	2262	2291	0	0	0	16062	8932	7130	6565	2417	4148
5-10 km,Rajapalayam Sub-District, Virudhunagar District																					
9	Arasiarpatti	Rural	1050	3784	1872	1912	388	223	165	1296	662	634	0	0	0	2600	1393	1207	1184	479	705
10	Keelrajakularaman	Rural	2575	8986	4487	4499	817	413	404	2319	1160	1159	40	23	17	6302	3459	2843	2684	1028	1656
11	Melarajakularaman (Part)	Rural	5238	16652	8394	8258	1617	843	774	2978	1502	1476	96	46	50	12060	6744	5316	4592	1650	2942
12	Pudupalaiyam	Rural	2241	7922	4015	3907	811	405	406	677	332	345	0	0	0	6016	3267	2749	1906	748	1158
13	Kollankondan	Rural	1996	6811	3389	3422	725	376	349	2602	1281	1321	0	0	0	4734	2567	2167	2077	822	1255
14	Ilandiraikondan	Rural	959	3422	1690	1732	390	208	182	1091	522	569	0	0	0	2080	1191	889	1342	499	843
15	Nallamangalam	Rural	1094	3962	2021	1941	425	212	213	59	26	33	0	0	0	3016	1674	1342	946	347	599
16	Puthur	Rural	2306	8230	4162	4068	875	448	427	1794	884	910	137	70	67	5764	3237	2527	2466	925	1541
17	Korukkampatti	Rural	521	1935	997	938	196	103	93	1470	761	709	0	0	0	1156	663	493	779	334	445
Srivilliputhur Sub-District, Virudhunagar District																					
18	Pillaiyarkulam (part)	Rural	1913	6271	3119	3152	649	329	320	928	461	467	0	0	0	4325	2391	1934	1946	728	1218
19	Achchandavilthan	Rural	1881	6365	3190	3175	622	317	305	1419	703	716	0	0	0	4234	2370	1864	2131	820	1311
Sivakasi Sub-District, Virudhunagar District																					
20	Nadukkudi	Rural	1348	4797	2383	2414	575	296	279	2439	1231	1208	0	0	0	3122	1717	1405	1675	666	1009
21	Kongankulam	Rural	318	1050	507	543	87	44	43	138	64	74	0	0	0	761	409	352	289	98	191
22	Alangulam (Part)	Rural	508	1924	1004	920	164	95	69	480	247	233	0	0	0	1473	812	661	451	192	259
23	Kilanmarinadu	Rural	637	2388	1190	1198	252	116	136	525	261	264	0	0	0	1614	914	700	774	276	498
24	Lakshmipuram	Rural	1603	5610	2771	2839	577	251	326	1327	652	675	5	3	2	3847	2156	1691	1763	615	1148
25	Appanayakkanpatti	Rural	1017	4594	2135	2459	379	202	177	1086	529	557	0	0	0	3291	1620	1671	1303	515	788
Sivagiri Sub-District,Tirunelveli District																					
26	Thenmalai	Rural	3060	10283	4983	5300	1002	478	524	1889	893	996	0	0	0	6724	3793	2931	3559	1190	2369
Sankarankoil Sub-District,Tirunelveli District																					
27	Perumalpatti	Rural	1456	5175	2608	2567	567	269	298	512	251	261	0	0	0	3749	2128	1621	1426	480	946
28	Valavandapuram	Rural	317	1045	518	527	122	59	63	92	43	49	4	3	1	818	439	379	227	79	148
29	Pandappuli	Rural	1585	5954	2950	3004	540	278	262	2306	1150	1156	0	0	0	4351	2378	1973	1603	572	1031
30	Rengasamudram	Rural	119	388	192	196	36	24	12	14	6	8	0	0	0	182	97	85	206	95	111
31	Kalingappatti	Rural	1775	6537	3242	3295	641	330	311	1573	784	789	24	12	12	4347	2429	1918	2190	813	1377
32	Chattrappatti	Rural	403	1420	699	721	151	69	82	800	395	405	0	0	0	1020	562	458	400	137	263
33	Kulasekarapperi	Rural	171	645	327	318	53	25	28	0	0	0	0	0	0	416	239	177	229	88	141
34	Karisattan	Rural	1409	5032	2499	2533	562	291	271	1420	689	731	4	2	2	3397	1889	1508	1635	610	1025
35	Paruvakkudi	Rural	919	3161	1578	1583	288	137	151	1061	524	537	0	0	0	2063	1176	887	1098	402	696
Rajapalayam Sub-District, Virudhunagar District																					
36	Samusigapuram (CT)	Urban	4329	14601	7341	7260	1324	695	629	3231	1604	1627	0	0	0	10952	6002	4950	3649	1339	2310
Sivakasi Sub-District, Virudhunagar District																					
37	Alangulam (CT)	Urban	1364	4930	2475	2455	456	236	220	807	398	409	1	1	0	3809	2052	1757	1121	423	698
	Sub total (C)		44112	153874	76738	77136	15291	7772	7519	36333	18015	18318	311	160	151	108223	59768	48455	45651	16970	28681
	Grand Total (A+B+C)		51618	180060	89852	90208	17865	9102	8763	41483	20561	20922	311	160	151	126747	70076	56671	53313	19776	33537

**Source: District Primary Census Abstract, Virudhunagar and Tirunelveli District of Tamilnadu State-2011*

OCCUPATIONAL STRUCTURE IN THE BUFFER ZONE

Sl.No	Name of village	Rural / urban	MAIN WORKERS		CULTIVATORS		AGRI LABOURS		HOUSE HOLD		OTHERS		MARGINAL WORKERS		NON WORKERS	
			MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE
0-2 km,Rajapalayam Sub-District, Virudhunagar District																
1	Varagunaramapuram	Rural	451	330	62	23	74	183	1	8	314	116	1	5	244	326
2	Gopalapuram	Rural	271	99	35	14	11	9	9	8	216	68	186	250	251	404
3	Kuruchiarpatti	Rural	198	182	25	12	35	44	1	2	137	124	14	19	149	179
	Sub total (A)		920	611	122	49	120	236	11	18	667	308	201	274	644	909
2-5 km,Rajapalayam Sub-District, Virudhunagar District																
4	Sholapuram	Rural	3266	2126	370	258	709	728	46	46	2141	1094	155	253	2409	3398
5	Nathampatti	Rural	545	328	34	8	112	196	1	4	398	120	97	48	451	674
6	Vadagarai	Rural	1006	704	214	91	304	366	14	20	474	227	17	22	697	1008
7	Tenkarai	Rural	300	267	49	5	54	134	1	3	196	125	3	2	151	195
Rajapalayam Sub-District, Virudhunagar District																
8	Ramalingapuram (CT)	Urban	1327	754	33	9	70	110	7	10	1217	625	35	54	890	1445
	Sub total (B)		6444	4179	700	371	1249	1534	69	83	4426	2191	307	379	4598	6720
5-10 km,Rajapalayam Sub-District, Virudhunagar District																
9	Arasiyarpatti	Rural	893	507	80	80	135	164	8	12	670	251	162	218	817	1187
10	Keelrajakularaman	Rural	2521	1357	293	120	610	622	12	13	1606	602	167	261	1799	2881
11	Melarakularaman (Part)	Rural	5173	3317	246	186	417	550	158	277	4352	2304	130	325	3091	4616
12	Pudupalaiyam	Rural	2369	1002	20	9	43	40	69	53	2237	900	63	64	1583	2841
13	Kollankondan	Rural	1895	1381	85	29	470	527	114	231	1226	594	54	101	1440	1940
14	Ilandiraiikondan	Rural	992	905	41	24	284	455	47	36	620	390	12	18	686	809
15	Nallamangalam	Rural	1237	993	79	40	233	316	14	16	911	621	11	6	773	942
16	Puthur	Rural	1755	1133	144	60	405	417	29	35	1177	621	343	355	2064	2580
17	Korukkampatti	Rural	582	482	110	88	102	255	2	3	368	136	10	26	405	430
Srivilliputhur Sub-District, Virudhunagar District																
18	Pillaiyarkulam (part)	Rural	1577	780	42	22	256	237	17	19	1262	502	237	394	1305	1978
19	Achchandavilthan	Rural	1866	1380	285	177	408	653	54	59	1119	491	84	163	1240	1632
Sivakasi Sub-District, Virudhunagar District																
20	Nadukkudi	Rural	1327	1156	109	69	154	164	9	23	1055	900	117	152	939	1106
21	Kongankulam	Rural	320	271	11	7	197	222	1	0	111	42	3	1	184	271
22	Alangulam (Part)	Rural	547	340	21	6	42	58	9	14	475	262	9	9	448	571
23	Kilanmarinadu	Rural	648	417	38	21	53	141	8	14	549	241	75	86	467	695
24	Lakshmipuram	Rural	1570	1198	128	123	507	607	21	26	914	442	119	61	1082	1580
25	Appanayakkanpatti	Rural	1125	1097	85	99	307	499	28	19	705	480	54	106	956	1256
Sivagiri Sub-District,Tirunelveli District																
26	Thenmalai	Rural	3009	2513	368	189	1282	1522	49	144	1310	658	88	167	1886	2620
Sankarankoil Sub-District,Tirunelveli District																
27	Perumalpatti	Rural	1433	1090	111	38	473	522	97	139	752	391	127	166	1048	1311
28	Valavandapuram	Rural	272	216	22	1	67	87	2	0	181	128	14	21	232	290
29	Pandappuli	Rural	1720	1349	279	167	912	931	13	4	516	247	78	152	1152	1503
30	Rengasamudram	Rural	106	116	1	1	60	102	1	0	44	13	1	2	85	78
31	Kalingappatti	Rural	1751	1297	165	79	1078	1037	24	18	484	163	164	162	1327	1836
32	Chattrappatti	Rural	436	410	11	3	359	384	0	0	66	23	0	0	263	311
33	Kulasekarapperi	Rural	196	193	16	1	151	27	0	144	29	21	6	6	125	119
34	Karisattan	Rural	1495	1246	82	64	495	603	154	171	764	408	39	53	965	1234
35	Paruvakkudi	Rural	949	814	133	71	561	613	0	1	255	129	10	26	619	743
Rajapalayam Sub-District, Virudhunagar District																
36	Samusigapuram (CT)	Urban	4359	2377	21	5	533	555	54	66	3751	1751	113	106	2869	4777
Sivakasi Sub-District, Virudhunagar District																
37	Alangulam (CT)	Urban	1350	618	98	11	191	232	61	24	1000	351	103	112	1022	1725
	Sub total (C)		43473	29955	3124	1790	10785	12542	1055	1561	28509	14062	2393	3319	30872	43862
	Grand Total (A+B+C)		50837	34745	3946	2210	12154	14312	1135	1662	33602	16561	2901	3972	36114	51491

*Source: District Primary Cencus Abstract, Virudhunagar and Tirunelveli District of Tamilnadu State-2011

EDUCATIONAL FACILITIES IN THE STUDY AREA

Sl.No	Name of village	Educational Facilities (A(1)/ NA(2))	Govt Pre - Primary School (Nursery/LKG/UKG) (Numbers)	Govt Primary School (Numbers)	Govt Middle School (Numbers)	Govt Secondary School (Numbers)	Govt Senior Secondary School (Numbers)	Govt Arts and Science Degree College (Numbers)	Govt Engineering College (Numbers)	Govt Medicine College (Numbers)	Govt Management Institute (Numbers)	Govt Polytechnic (Numbers)	Govt Vocational Training School/ITI (Numbers)	Government Non Formal Training Centre (Numbers)	Government School For Disabled (Numbers)
0-2 km,Rajapalayam Sub-District, Virudhunagar District															
1	Varagunaramapuram	1	1	2	0	0	0	0	0	0	0	0	0	2	0
2	Gopalapuram	1	1	2	1	0	0	0	0	0	0	0	0	2	0
3	Kuruchiyarpatti	1	1	0	0	0	0	0	0	0	0	0	0	1	0
	Sub - Total (A)		3	4	1	0	0	0	0	0	0	0	0	5	0
2-5 km,Rajapalayam Sub-District, Virudhunagar District															
4	Sholapuram	1	4	4	2	0	0	0	0	0	0	0	0	5	0
5	Nathampatti	1	2	2	1	1	1	0	0	0	0	0	0	2	0
6	Vadagarai	1	3	2	1	1	0	0	0	0	0	0	0	3	0
7	Tenkarai	1	3	3	1	1	0	0	0	0	0	0	0	3	0
	Sub - Total (B)		12	11	5	3	1	0	0	0	0	0	0	13	0
5-10 km,Rajapalayam Sub-District, Virudhunagar District															
8	Arasiyarpatti	1	2	3	0	0	0	0	0	0	0	0	0	3	0
9	Keelrajakularaman	1	8	8	4	2	1	0	0	0	0	0	0	8	0
10	Melarakularaman (Part)	1	12	7	2	2	2	0	0	0	0	0	0	7	0
11	Pudupalaiyam	1	2	0	0	0	0	0	0	0	0	0	0	1	0
12	Kollankondan	1	3	1	0	0	0	0	0	0	0	0	0	1	0
13	Ilandiraikondan	1	3	3	2	0	0	0	0	0	0	0	0	2	0
14	Nallamangalam	1	3	2	1	1	0	0	0	0	0	0	0	2	0
15	Puthur	1	5	7	3	2	2	0	0	0	0	0	0	7	0
16	Korukkampatti	1	5	3	0	0	0	0	0	0	0	0	0	3	0
Srivilliputhur Sub-District, Virudhunagar District															
17	Pillaiyarkulam (part)	1	3	3	0	0	0	0	0	0	0	0	0	3	0
18	Achchandavilthan	1	2	5	1	0	0	0	0	0	0	0	0	5	0
Sivakasi Sub-District, Virudhunagar District															
19	Nadukkudi	1	3	3	1	0	0	0	0	0	0	0	0	3	0
20	Kongankulam	1	1	0	0	0	0	0	0	0	0	0	0	0	0
21	Alangulam (Part)	1	5	3	3	2	2	0	0	0	0	0	0	3	0
22	Kilanmarinadu	1	2	1	0	0	0	0	0	0	0	0	0	1	0
23	Lakshmipuram	1	4	4	0	0	0	0	0	0	0	0	0	4	0
24	Appanayakkanpatti	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Sivagiri Sub-District,Tirunelveli District															
25	Thenmalai	1	3	8	2	1	1	0	0	0	0	0	0	1	0
Sankarankoil Sub-District,Tirunelveli District															
26	Perumalpatti	1	4	2	1	0	0	0	0	0	0	0	0	1	0
27	Valavandapuram	1	1	1	0	0	0	0	0	0	0	0	0	1	0
28	Pandappuli	1	8	6	0	0	0	0	0	0	0	0	0	1	0
29	Rengasamudram	1	1	1	0	0	0	0	0	0	0	0	0	1	0
30	Kalingappatti	1	2	4	1	1	1	0	0	0	0	0	0	1	0
32	Chattrappatti	1	2	3	1	0	0	0	0	0	0	0	0	1	0
33	Kulasekarapperi	1	1	1	1	0	0	0	0	0	0	0	0	1	0
34	Karisattan	1	5	1	0	0	0	0	0	0	0	0	0	1	0
35	Paruvakkudi	1	4	4	0	0	0	0	0	0	0	0	0	1	0
	Sub - Total (C)		96	84	23	11	9	0	0	0	0	0	0	63	0
	Grand Total (A+B+C)		111	99	29	14	10	0	0	0	0	0	0	81	0

*Source: District Primary Cences Absract, Virudhunagar and Tirunelveli District of Tamilnadu State-2011

MEDICAL FACILITIES WITHIN THE STUDY AREA

Sl.No	Name of village	Medical Facilities (A(1)/NA(2))	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Health Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	TB Clinic (Numbers)	Hospital Allopathic (Numbers)	Hospital Alternative Medicine (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Mobile Health Clinic (Numbers)	Family Welfare Centre (Numbers)
0-2 km,Rajapalayam Sub-District, Virudhunagar District													
1	Varagunaramapuram	1	0	0	1	0	0	0	0	0	0	0	0
2	Gopalapuram	2	0	0	0	0	0	0	0	0	0	0	0
3	Kuruchiarpatti	1	0	0	0	0	0	0	0	0	1	0	0
	total (A)		0	0	1	0	0	0	0	0	1	0	0
2-5 km,Rajapalayam Sub-District, Virudhunagar District													
4	Sholapuram	1	0	2	2	2	2	0	0	2	0	0	2
5	Nathampatti	1	0	1	1	1	1	0	0	1	0	0	1
6	Vadagarai	1	0	0	1	1	0	0	0	0	0	0	0
7	Tenkarai	2	0	0	0	0	0	0	0	0	0	0	0
	total (B)		0	3	4	4	3	0	0	3	0	0	3
5-10 km,Rajapalayam Sub-District, Virudhunagar District													
8	Arasiarpatti	1	0	0	1	0	0	0	0	0	0	0	0
9	Keelrajakularaman	1	1	1	1	1	1	0	0	1	1	0	1
10	Melarajakularaman (Part)	1	0	1	3	1	1	0	0	1	1	0	1
11	Pudupalaiyam	1	0	0	3	0	0	0	0	0	0	0	0
12	Kollankondan	1	1	1	1	1	1	0	0	1	1	0	1
13	Ilandiraikondan	1	0	0	1	0	0	0	0	0	0	0	0
14	Nallamangalam	1	0	0	1	0	0	0	0	0	1	0	0
15	Puthur	1	0	0	2	0	0	0	0	0	2	0	0
16	Korukkampatti	2	0	0	0	0	0	0	0	0	0	0	0
Srivilliputhur Sub-District, Virudhunagar District													
17	Pillaiyarkulam (part)	1	0	0	1	1	0	0	0	0	0	0	0
18	Achchandavilthan	1	0	0	1	1	0	0	0	0	0	0	0
Sivakasi Sub-District, Virudhunagar District													
19	Nadukkudi	1	0	0	1	0	0	0	0	0	0	0	0
20	Kongankulam	1	0	0	1	0	0	0	0	0	0	0	0
21	Alangulam (Part)	1	1	1	1	1	1	0	0	1	1	0	1
22	Kilanmarinadu	1	0	0	1	0	0	0	0	0	0	0	0
23	Lakshmipuram	1	0	0	1	0	0	0	0	0	0	0	0
24	Appanayakkanpatti	1	0	0	1	0	0	0	0	0	0	0	0
Sivagiri Sub-District,Tirunelveli District													
25	Thenmalai	1	0	2	1	2	2	0	0	2	0	0	2
Sankarankoil Sub-District,Tirunelveli District													
26	Perumalpatti	1	0	0	1	0	0	0	0	0	0	0	0
27	Valavandapuram	2	0	0	0	0	0	0	0	0	0	0	0
28	Pandappuli	1	0	0	2	0	0	0	0	0	0	0	0
29	Rengasamudram	2	0	0	0	0	0	0	0	0	0	0	0
30	Kalingappatti	1	0	1	1	1	1	0	0	1	1	0	1
31	Chattrappatti	1	0	0	1	0	0	0	0	0	0	0	0
32	Kulasekarapperi	2	0	0	0	0	0	0	0	0	0	0	0
33	Karisattan	1	0	0	1	0	0	0	0	0	0	0	0
34	Paruvakkudi	1	0	0	1	0	0	0	0	0	0	0	0
	total (C)		3	7	29	9	7	0	0	7	8	0	7
	Grand Total (A+B+C)		3	10	34	13	10	0	0	10	9	0	10

*Source: District Primary Census Abstract, Virudhunagar and Tirunelveli District of Tamil Nadu State-2011

Note : A: Available, NA- Not Available

INFRASTRUCTURAL FACILITIES IN THE STUDY AREA

Sl.No	Name of village	Tap Water-Treated	Covered Well	Hand Pump	Tube Wells/Borehole	Spring	River/Canal	Tank/Pond/Lake	Post Office	Sub Post Office	Post And Telegraph Office	Telephone (landlines)	Mobile Phone Coverage	Public Bus Service	Railway Station	Commercial Bank	Cooperative Bank	Agricultural Credit Societies
0-2 km,Rajapalayam Sub-District, Virudhunagar District																		
1	Varagunaramapuram	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
2	Gopalapuram	1	2	2	2	2	2	2	2	1	2	1	1	1	2	1	2	2
3	Kuruchiyarpatti	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	1	1
2-5 km,Rajapalayam Sub-District, Virudhunagar District																		
4	Sholapuram	1	2	1	1	2	2	2	1	1	1	1	1	1	2	1	2	1
5	Nathampatti	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
6	Vadagarai	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
7	Tenkarai	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
5-10 km,Rajapalayam Sub-District, Virudhunagar District																		
8	Arasiyarpatti	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
9	Keelrajakularaman	1	2	1	1	2	2	2	1	1	1	1	1	1	2	2	1	1
10	Melarajakularaman (Part)	1	1	1	1	1	2	2	2	1	2	1	1	1	2	1	1	1
11	Pudupalaiyam	1	2	1	1	2	2	2	2	2	2	1	1	2	2	2	2	2
12	Kollankondan	1	1	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2
13	Ilandirai Kondan	1	2	2	1	2	1	2	2	2	2	1	1	1	2	2	2	2
14	Nallamangalam	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2
15	Puthur	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2
16	Korukkampatti	1	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2
Srivilliputhur Sub-District, Virudhunagar District																		
17	Pillaiyarkulam (part)	1	1	1	1	2	2	2	1	2	1	1	1	1	2	2	1	1
18	Achchandavilthan	1	2	1	1	2	2	2	2	1	2	1	1	1	2	2	1	1
Sivakasi Sub-District, Virudhunagar District																		
19	Nadukkudi	1	2	1	2	1	2	2	2	1	2	1	1	1	2	2	1	1
20	Kongankulam	1	2	1	1	2	1	2	2	2	2	1	1	1	2	2	2	1
21	Alangulam (Part)	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	1	1
22	Kilanmarinadu	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	1
23	Lakshmipuram	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1
24	Appanayakkanpatti	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
Sivagiri Sub-District,Tirunelveli District																		
25	Thenmalai	1	1	1	1	1	2	2	2	1	2	1	1	1	2	1	1	1
Sankarankoil Sub-District,Tirunelveli District																		
26	Perumalpatti	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
27	Valavandapuram	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
28	Pandappuli	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
29	Rengasamudram	1	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2
30	Kalingappatti	1	1	1	1	2	2	2	2	1	2	1	1	2	2	1	2	1
31	Chattrappatti	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
32	Kulasekarapperi	1	2	2	2	2	2	2	2	1	2	1	1	1	2	2	2	2
33	Karisattan	1	2	2	1	2	1	2	2	1	2	1	1	1	2	2	2	2
34	Paruvakkudi	1	1	2	1	1	2	2	2	2	2	1	1	1	2	2	2	2

**Source: District Primary Cences Absract, Virudhunagar and Tirunelveli District of Tamilnadu State-2011*

Note : A: Available, NA- Not Available

Status: A(1)/NA(2)



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AMBIENT AIR QUALITY

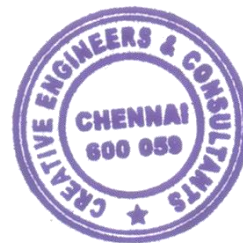
Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj
Name of the Location	:	Near Mine Lease Area
Station Code	:	A1

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	3/4/2025	56.9	27.9	6.3	9.5
2	3/5/2025	54.4	26.3	5.8	8.6
3	3/15/2025	61.4	32.0	7.9	10.5
4	3/16/2025	58.0	28.6	6.5	9.7
5	3/18/2025	55.8	27.5	6.2	9.3
6	3/19/2025	52.9	25.4	5.5	8.0
7	3/29/2025	51.9	24.3	5.3	7.6
8	3/30/2025	53.4	25.7	5.6	8.1
9	4/1/2025	57.4	28.3	6.4	9.6
10	4/2/2025	59.9	29.4	7.3	10.0
11	4/12/2025	52.5	25.0	5.4	7.8
12	4/13/2025	56.4	27.7	6.2	9.4
13	4/15/2025	58.5	28.7	6.7	9.8
14	4/16/2025	54.0	26.0	5.7	8.4
15	4/26/2025	62.9	37.8	8.3	10.9
16	4/27/2025	60.8	31.7	7.7	10.3
17	4/29/2025	58.9	28.9	6.9	9.9
18	4/30/2025	55.0	26.7	5.9	8.8
19	5/10/2025	64.7	39.4	8.7	11.3
20	5/11/2025	60.5	29.7	7.5	10.1
21	5/13/2025	59.4	29.1	7.2	10.0
22	5/14/2025	55.6	27.0	6.0	9.0
23	5/24/2025	61.9	37.4	8.2	10.7
24	5/25/2025	63.5	38.3	8.5	11.1
	MIN	51.9	24.3	5.3	7.6
	AVE	57.8	29.5	6.7	9.5
	MAX	64.7	39.4	8.7	11.3

Note: BDL – Below Detectable Limit, DL: Detectable Limit.



Prepared by



9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



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AMBIENT AIR QUALITY

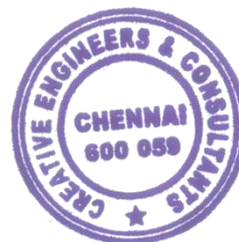
Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj
Name of the Location	:	Mettu Vadakarai Village
Station Code	:	A2

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	3/4/2025	48.4	20.1	4.9	7.5
2	3/5/2025	46.8	18.6	4.4	6.9
3	3/15/2025	49.8	19.8	5.4	8.0
4	3/16/2025	47.7	18.9	4.7	7.3
5	3/18/2025	46.5	18.4	4.3	6.8
6	3/19/2025	48.0	19.0	4.8	7.4
7	3/29/2025	49.5	19.6	5.3	7.9
8	3/30/2025	52.2	25.6	6.1	8.8
9	4/1/2025	49.1	19.5	5.2	7.8
10	4/2/2025	52.5	28.8	6.2	8.9
11	4/12/2025	48.9	19.4	5.1	7.7
12	4/13/2025	51.6	25.3	5.9	8.6
13	4/15/2025	52.9	30.4	6.5	9.3
14	4/16/2025	47.1	18.7	4.5	7.0
15	4/26/2025	50.7	24.9	5.7	8.4
16	4/27/2025	52.6	29.4	6.3	9.0
17	4/29/2025	50.1	19.9	5.5	8.1
18	4/30/2025	48.6	19.4	5.0	7.6
19	5/10/2025	47.4	18.8	4.6	7.1
20	5/11/2025	50.4	24.7	5.6	8.3
21	5/13/2025	53.2	30.6	6.6	9.6
22	5/14/2025	51.9	25.5	6.0	8.7
23	5/24/2025	52.7	30.1	6.4	9.1
24	5/25/2025	51.0	25.0	5.8	8.5
	MIN	46.5	18.4	4.3	6.8
	AVE	50.0	22.9	5.5	8.1
	MAX	53.2	30.6	6.6	9.6

Note: BDL – Below Detectable Limit, DL: Detectable Limit.



Prepared by



9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



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AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj
Name of the Location	:	Tenkarai Village
Station Code	:	A3

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	3/6/2025	52.6	24.8	5.8	7.9
2	3/7/2025	49.8	20.0	5.0	7.1
3	3/13/2025	55.5	26.1	6.6	9.1
4	3/14/2025	53.0	24.9	5.9	8.0
5	3/20/2025	49.4	19.8	4.8	7.0
6	3/21/2025	51.8	24.4	5.6	7.7
7	3/27/2025	50.2	20.3	5.2	7.3
8	3/28/2025	51.4	24.4	5.5	7.6
9	4/3/2025	57.4	27.0	7.2	10.1
10	4/4/2025	53.8	25.3	6.2	8.3
11	4/10/2025	52.1	24.5	5.7	7.8
12	4/11/2025	55.0	25.9	6.5	8.9
13	4/17/2025	57.8	27.4	7.3	10.3
14	4/18/2025	54.1	25.6	6.4	8.5
15	4/24/2025	56.2	26.5	6.8	9.5
16	4/25/2025	50.6	21.4	5.3	7.4
17	5/1/2025	56.7	26.7	6.9	9.7
18	5/2/2025	50.9	24.0	5.4	7.5
19	5/8/2025	58.6	27.6	7.7	10.7
20	5/9/2025	57.1	26.9	7.0	9.9
21	5/15/2025	54.6	25.7	6.4	8.7
22	5/16/2025	53.4	25.3	6.0	8.1
23	5/22/2025	58.2	27.4	7.5	10.5
24	5/23/2025	55.8	26.5	6.7	9.3
	MIN	49.4	19.8	4.8	7.0
	AVE	54.0	24.9	6.2	8.6
	MAX	58.6	27.6	7.7	10.7

Note: BDL – Below Detectable Limit, DL: Detectable Limit.

[Signature]

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9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



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AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj
Name of the Location	:	Kuruchiyarpatti Village
Station Code	:	A4

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	3/6/2025	49.4	22.8	4.8	7.1
2	3/7/2025	50.9	23.5	5.3	7.6
3	3/13/2025	54.6	26.8	7.6	10.1
4	3/14/2025	52.7	25.1	5.9	8.3
5	3/20/2025	53.2	25.7	6.2	8.7
6	3/21/2025	54.4	26.7	7.4	9.9
7	3/27/2025	49.1	22.6	4.7	7.0
8	3/28/2025	50.6	23.3	5.2	7.5
9	4/3/2025	54.8	26.9	7.8	10.3
10	4/4/2025	52.4	24.7	5.8	8.1
11	4/10/2025	52.1	24.5	5.7	8.0
12	4/11/2025	53.4	26.0	6.4	8.9
13	4/17/2025	55.0	27.0	7.9	10.5
14	4/18/2025	53.6	26.3	6.6	9.1
15	4/24/2025	49.7	23.0	4.9	7.3
16	4/25/2025	51.2	23.6	5.4	7.7
17	5/1/2025	53.0	25.3	6.0	8.5
18	5/2/2025	53.8	26.4	6.8	9.3
19	5/8/2025	50.0	23.1	5.0	7.4
20	5/9/2025	51.8	24.4	5.6	7.9
21	5/15/2025	55.5	27.3	8.0	10.7
22	5/16/2025	54.0	26.5	7.0	9.5
23	5/22/2025	51.5	23.8	5.5	7.8
24	5/23/2025	54.2	26.6	7.2	9.7
	MIN	49.1	22.6	4.7	7.0
	AVE	52.5	25.1	6.2	8.6
	MAX	55.5	27.3	8.0	10.7

Note: BDL – Below Detectable Limit, DL: Detectable Limit.


Prepared by



9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



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AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj
Name of the Location	:	Muthanuthi Village
Station Code	:	A5

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	3/8/2025	44.7	21.5	4.0	6.7
2	3/9/2025	46.5	22.4	4.7	7.3
3	3/11/2025	48.9	23.5	5.6	8.1
4	3/12/2025	50.4	24.2	6.2	8.6
5	3/22/2025	44.4	21.4	3.9	6.6
6	3/23/2025	46.2	22.2	4.6	7.2
7	3/25/2025	48.6	23.4	5.5	8.0
8	3/26/2025	46.8	22.5	4.8	7.4
9	4/5/2025	50.7	24.4	6.4	8.7
10	4/6/2025	47.1	22.7	4.9	7.5
11	4/8/2025	47.7	23.0	5.2	7.7
12	4/9/2025	45.0	21.7	4.2	6.8
13	4/19/2025	50.1	24.1	6.0	8.5
14	4/20/2025	45.4	21.8	4.3	6.9
15	4/22/2025	49.8	24.0	5.9	8.4
16	4/23/2025	47.4	22.8	5.0	7.6
17	5/3/2025	51.0	24.5	6.6	8.8
18	5/4/2025	49.5	23.8	5.8	8.3
19	5/6/2025	48.0	23.1	5.3	7.8
20	5/7/2025	45.6	21.9	4.4	7.0
21	5/17/2025	51.2	24.6	6.9	8.9
22	5/18/2025	49.2	23.7	5.7	8.2
23	5/20/2025	45.9	22.1	4.5	7.1
24	5/21/2025	48.4	23.3	5.4	7.9
	MIN	44.4	21.4	3.9	6.6
	AVE	47.9	23.0	5.2	7.8
	MAX	51.2	24.6	6.9	8.9

Note: BDL – Below Detectable Limit, DL: Detectable Limit.



Prepared by



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e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



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AMBIENT AIR QUALITY

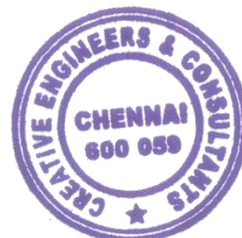
Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj
Name of the Location	:	Gopalapuram Village
Station Code	:	A6

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	3/8/2025	62.4	30.5	8.0	10.9
2	3/9/2025	54.0	26.4	6.2	8.4
3	3/11/2025	50.6	24.7	5.4	7.0
4	3/12/2025	55.0	26.9	6.4	8.9
5	3/22/2025	53.5	26.2	6.1	8.2
6	3/23/2025	52.1	25.5	5.7	7.6
7	3/25/2025	57.9	28.3	7.2	10.0
8	3/26/2025	53.0	25.9	6.0	8.0
9	4/5/2025	55.6	27.2	6.5	9.0
10	4/6/2025	61.3	30.0	7.8	10.6
11	4/8/2025	64.6	31.6	8.4	11.2
12	4/9/2025	56.5	27.6	6.7	9.4
13	4/19/2025	51.0	24.9	5.5	7.2
14	4/20/2025	54.3	26.6	6.3	8.6
15	4/22/2025	63.4	31.0	8.2	11.0
16	4/23/2025	57.6	28.2	7.0	9.9
17	5/3/2025	51.4	25.1	5.6	7.4
18	5/4/2025	57.0	27.9	6.8	9.6
19	5/6/2025	68.0	33.3	8.8	11.6
20	5/7/2025	60.2	29.4	7.6	10.4
21	5/17/2025	56.0	27.4	6.6	9.2
22	5/18/2025	52.5	25.7	5.8	7.9
23	5/20/2025	59.1	28.9	7.4	10.2
24	5/21/2025	66.8	32.7	8.6	11.4
	MIN	50.6	24.7	5.4	7.0
	AVE	57.2	28.0	6.9	9.3
	MAX	68.0	33.3	8.8	11.6

Note: BDL – Below Detectable Limit, DL: Detectable Limit.



Prepared by



9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



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WATER QUALITY DATA

Project Name	:	Rough Stone and Gravel Quarry Of Thiru. S. Devaraj							
Location Name	:	Location Code				Location Name			
		W1				Near Mine Lease Area			
		W2				Mettu Vadakarai Village			
		W3				Tenkarai Village			
		W4				Kuruchiyarpatti Village			
		W5				Muthanuthi Village			
		W6				Gopalapuram Village			

S. No.	Parameter	Unit	W1	W 2	W 3	W 4	W 5	W 6	*Permissibl e Limits
1	pH	-	7.58	7.32	7.29	7.56	7.24	7.72	6.5-8.5
2	Electrical Conductivity	µmhos/cm	982.5	410.2	556.5	703.2	665.2	480.5	-
3	Odor	-	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE
4	Turbidity	NTU	<1	<1	<1	<1	<1	<1	5.0
5	Total Hardness as CaCO ₃	mg/L	312	194	201	264	251	184	600
6	Calcium Hardness CaCO ₃	mg/L	175	102	67.9	140	146	96.5	-
7	Magnesium Hardness CaCO ₃	mg/L	137	92	133.1	124	105	87.5	-
8	Calcium Ca	mg/L	70.0	40.8	27.2	56.0	58.4	38.6	200
9	Magnesium	mg/L	32.9	22.1	31.9	29.8	25.2	21.0	100

9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in



CREATIVE ENGINEERS & CONSULTANTS

(NABET ACCREDITED, NABL ACCREDITED TESTING LABORATORY,
DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

S. No.	Parameter	Unit	W1	W 2	W 3	W 4	W 5	W 6	*Permissible Limits
	Mg								
10	Alkalinity CaCO ₃	mg/L	292	125	256	292	280	274	600
11	Chloride Cl ⁻	mg/L	77.3	56.4	25.2	102	98.6	22.3	1000
12	Sulphate SO ₄ ²⁻	mg/L	186	12.1	17.6	20.8	17.3	14.5	400
13	Iron Fe	mg/L	0.07	0.04	0.03	0.04	0.05	BDL(D.L - 0.01)	0.3
14	Nitrate NO ₃	mg/L	7.21	2.56	2.34	2.47	3.54	BDL(D.L - 1.0)	45
15	Fluoride F	mg/L	0.63	0.35	0.22	0.31	0.45	BDL(D.L - 0.1)	1.5
16	Total Dissolved Solids	mg/L	590	250	336	425	402	290	2000
17	Free Residual Chlorine Cl ⁻	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)	1.0
18	Manganese Mn	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)	0.3

Note: * The water quality of the collected ground water samples were found to be within the prescribed permissible limits of IS: 10500:2012 Norms for Drinking in the absence of an alternative source.

[Handwritten Signature]

Prepared by



9B/4, Bharathwajar Street, East Tambaram, Chennai 600 059.

Ph : 22395170, 9444133619, Fax : 91-44-22396643.

e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in

LAND USE PATTERN OF THE STUDY AREA WITHIN 10 KM RADIUS AROUND THE PROPOSED PROJECT AREA

Sl.No	Name of village	Total Geographical Area (in Hectares)	Forest Area (in Hectares)	Area under Non-Agricultural Uses (in Hectares)	Barren & Uncultivable Land Area (in Hectares)	Permanent Pastures and Other Grazing Land Area (in Hectares)	Land Under Miscellaneous Tree Crops etc. Area (in Hectares)	Culturable Waste Land Area (in Hectares)	Fallows Land other than Current Fallows Area (in Hectares)	Current Fallows Area (in Hectares)	Total Unirrigated Land Area (in Hectares)	Area Irrigated by Source (in Hectares)
0-2 km,Rajapalayam Sub-District, Virudhunagar District												
1	Varagunaramapuram	278.34	0	75.67	0	0	0	0	109.47	10.58	62.82	19.8
2	Gopalapuram	1088.78	0	57.46	0	0	265.35	0.94	262.91	190.15	163.72	148.25
3	Kuruchiyarpatti	190.38	0	42.25	0	0	0	0	57.71	36.44	17.59	36.39
	total (A)	1557.5	0	175.38	0	0	265.35	0.94	430.09	237.17	244.13	204.44
2-5 km,Rajapalayam Sub-District, Virudhunagar District												
4	Sholapuram	2227.19	0	396.68	0.6	0	241.35	0	674.25	226.34	260.26	427.71
5	Nathampatti	326.97	0	106.02	0	0	0	0	80.91	0	44.38	95.66
6	Vadagarai	929.81	0	246.54	0	0	0	0.06	275.33	139.89	28.14	239.85
7	Tenkarai	1365.16	0	195.31	0	0	0	2.36	715.34	0	29.66	422.49
	total (B)	4849.13	0	944.55	0.6	0	241.35	2.42	1745.83	366.23	362.44	1185.71
5-10 km,Rajapalayam Sub-District, Virudhunagar District												
8	Arasiyarpatti	775.58	0	133.33	93.66	0	0.69	0.27	277.24	47.28	38.32	184.79
9	Keelrajakularaman	2394.68	0	308.98	0	0	0.2	1.18	1248.11	83.48	217	535.73
10	Melarajakularaman (Part)	2016.59	0	332.29	2.27	0	165.24	0	994.33	0	24.59	497.87
11	Pudupalaiyam	1067.53	0	53.35	25	0	0	311.43	305.67	0	187.36	184.72
12	Kollankondan	583.84	0	149.13	0.27	0	0	1.03	149.2	0	35.3	248.91
13	Ilandiraikondan	906.64	0	12.67	2.3	0.86	0	451.68	184.07	0	205.01	50.05
14	Nallamangalam	184.13	0	61.35	0	0	0	0	46.01	0.12	1.07	75.58
15	Puthur	1805.21	0	27.43	396.39	1.22	0	939.2	22.6	0	63.27	355.1
16	Korukkampatti	1081.33	0	147.6	0	0	0	1.82	454.78	53.03	323.46	100.64
Srivilliputhur Sub-District, Virudhunagar District												
17	Pillaiyarkulam (part)	1694.33	0	357.47	82	6.96	0	0	0	945.66	29.54	272.7
18	Achchandavilthan	1947.63	0	27.25	4.86	3.81	0	5.6	306.27	879.98	669.28	50.58
Sivakasi Sub-District, Virudhunagar District												
19	Nadukkudi	2384.77	0	353.28	0	4.1	114.9	4.93	1071.64	273.41	373.85	188.66
20	Kongankulam	128.59	0	5.81	0	0	0.01	0.51	16.29	27.43	65.95	12.59
21	Alangulam (Part)	1491.2	0	102.14	20	3.4	38.05	5.21	944.23	157.45	196.89	23.83
22	Kilanmarinadu	2765	0	586.05	0	6	20	5.8	1764.53	76.3	277.7	28.62
23	Lakshmiapuram	2000.71	0	200.63	85.04	1.9	39.66	3.5	1229.55	61.7	314.18	64.55
24	Appanayakkanpatti	1582.78	0	206.49	14.57	4.18	0	3.88	0	633.33	416.45	303.88
Sivagiri Sub-District,Tirunelveli District												
25	Thenmalai	3549.95	0	585.22	191.41	0	0	508.73	273.03	983.31	319.73	688.52
Sankarankoil Sub-District,Tirunelveli District												
26	Perumalpatti	1252.09	0	304.31	0	0	0.17	18.14	628.85	60.97	7.11	232.54
27	Valavandapuram	144.46	0	60.8	0	0	0.2	0	21.59	0	0.42	61.45
28	Pandappuli	2040.01	0	398.71	0	0	0.31	35.85	744.82	59.6	448.37	352.35
29	Rengasamudram	230.44	0	9.08	0	0	0	0	0.92	8.98	207.06	4.4
30	Kalingappatti	2766.17	0	249.47	0	0	14.72	145.2	10.25	989.89	1221.11	135.53
31	Subbiahpuram	22.72	0	0.62	0	0	0	0	0	0.07	22.03	0
32	Chattrappatti	599.1	0	134.35	0	0	0	0	172.47	11.61	35.48	245.19
33	Kulasekarapperi	28.49	0	5.72	0	0	0	0	4.04	0.74	17.99	0
34	Karisattan	1537.72	0	275.66	1.56	0	20	123	281.55	112.82	327.56	395.57
35	Paruvakkudi	1247.58	0	386.99	133.31	0	20	0.45	259.48	82.64	71.39	293.32
	total (C)	38229.27	0	5476.18	1052.64	32.43	434.15	2567.41	11411.52	5549.8	6117.47	5587.67
	Grand Total (A+B+C)	44635.9	0	6596.11	1053.24	32.43	940.85	2570.77	13587.44	6153.2	6724.04	6977.82

**Source: District Primary Cences Absract, Virudhunagar and Tirunelveli District of Tamilnadu State-2011*

**MINING PLAN & ENVIRONMENT MANAGEMENT
PLAN FOR ROUGH STONE & GRAVEL**

(PREPARED UNDER RULE 19 (1) & 22 OF TNMMCR1959
AMENDED 2015)

MINING PLAN SUBMITTED UNDER RULE NO. 41 & 42 OF TNMMCR AMENDED
2015

For Obtaining Environmental Clearance from
State Environmental Authority

PATTA LAND LEASE PERIOD TEN YEARS

(New Virgin Land- As per G.O.(MS) 208. Dt. 21.09.2020)

LOCATION OF THE AREA

EXTENT	:	4.04.00 HECTARE
S.F. Nos.	:	502/1,2p, 510/1,2 & 511/1,2
VILLAGE	:	GOPALAPURAM
TALUK	:	VENBAKOTTAI
PANCHAYATH UNION	:	VENBAKOTTAI
DISTRICT	:	VIRUDHUNAGAR
STATE	:	TAMIL NADU

APPLICANT

**SRI. S.DEVARAJ,
S/o. SRI. K.R. SUBBIAH,
19/29,G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI – 600 026.**

PREPARED BY

**M. DHARMALINGAM, Msc(Geol.), FCC(Mining),
RECOGNISED QUALIFIED PERSON
REGISTRATION NO: RQP/MAS/260/2014/A**



Shri. S. DEVARAJ,
S/o. Sri. K.R. Subbiah,


19/29,G2, Krishnan colony,
Nerkundram Pathai, Vadapalani,
Chennai – 600 026.
Mobile No. 97907 75777

CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **ROUGH STONE AND GRAVEL** deposit over an Extent of 4-04.00 Hectares in S.F. Nos. 502/1,2p, 510/1,2 & 511/1,2 (Patta Land) in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu state has been prepared by

Shri. M. DHARMALINGAM,
RQP/MAS/260/2014/A

I request the District Collector Virudhunagar, State Environmental Authority to make further correspondence regarding the mining plan with the said Recognized Qualified Person in his following addresses:

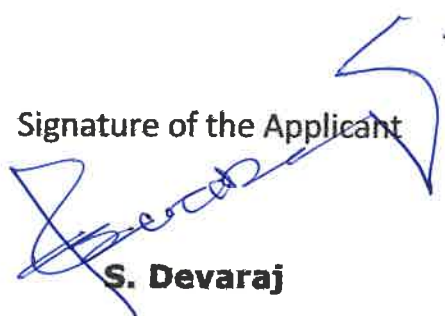
Shri. M. DHARMALINGAM, MSc (Geol.), FCC(Mining),
No.28, Polpettai,
Tuticorin - 628 002.
Mobile No. 99528 08328
RQP/MAS/260/2014/A

I hereby undertake that all the modifications, if any made in the mining plan by the Recognized Qualified Person may be deemed to have made with my knowledge and shall be acceptable to me and binding on me in all respects.

Place: Virudhunagar

Date: .04.2022

Signature of the Applicant


S. Devaraj

Shri. S. DEVARAJ,
S/o. Sri. K.R. Subbiah,

19/29,G2, Krishnan colony,
Nerkundram Pathai, Vadapalani,
Chennai – 600 026.
Mobile No. 97907 75777



DECLARATION OF THE APPLICANT

The Mine Plan In Respect of **ROUGH STONE AND GRAVEL** deposit over an Extent of 4-04.00 Hectares in S.F. Nos. 502/1,2p, 510/1,2 & 511/1,2 (Patta Land) in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu state has been prepared with full consultation with me. I have understood its contents and I agree to implement the same in accordance with the Laws applicable to mines.

I am also giving further undertaking to plant the species as specified in the afforestation plan to provide Green belt to protect the environmental aspects while quarrying Rough Stone and Gravel in the Patta Land.

Place: Virudhunagar

Date: .04.2022

Signature of the Applicant

[Handwritten Signature]
S. Devaraj

This Mining Plan is approved based on guidelines/ instructions issued in the CGM, Letter No: 386/LC/2012 dated 19-11-2012 and incorporation of the particulars specified in the latter Roc.No. *184/2012*.
Dated *5/4/2022* of the Deputy Director of Geology and Mining, Virudhunagar and subject to further Fulfillment of the conditions laid down under rule 41, 42 of Tamil Nadu Minor Mineral Concession Rules 1959.

[Handwritten Signature]
Deputy Director of Geology & Mining,
Virudhunagar

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

Letter Roc. No. *848/2012* Dated *5/4/2022*



Shri. M. DHARMALINGAM, MSc (Geol.), FMS, FCC(Mining),
Recognised Qualified Person
Reg. No. RQP/MAS/260/2014/A

No.28, Polpettai,
Tuticorin - 628 002.
Mobile No. 99528 08328

CERTIFICATE FROM THE RECOGNISED QUALIFIED PERSON

This is to certify that the provisions of the Mines Act, Metalliferous Mines Rules and Regulations, Minor Mineral Conservation and Development Rules, 2010 & Minerals Amended Rules of Tamilnadu Minor Mineral Concession Rule 1959 etc, made there under have been observed in the preparation of Mining Plan for **ROUGH STONE AND GRAVEL** deposit over an Extent of 4-04.00 Hectares in S.F. Nos. 502/1,2p, 510/1,2 & 511/1,2 (Patta Land) in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu state.

Applicant Address:-

THIRU. S. DEVARAJ,
S/o. SRI. K.R. SUBBIAH,
19/29,G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI,
VADAPALANI,
CHENNAI - 600 026.

Wherever Specific permission are required , the applicant will approach the concerned authorities of state Government and State Environmental Authority officers, for such permission, approvals, exemption or relaxation Standards prescribed by Rules and regulations in respect of miners health and the rules will be strictly implemented.

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

Place: Tuticorin - 628 002

Date: 04.04.2022


M. DHARMALINGAM
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
RQP/MAS/260/2014/A

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LIST OF ANNEXURES



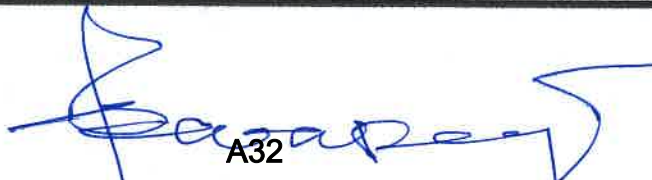
S.No	Description	Annexure No.
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LIST OF PLATES

S.No	Description	Plate No	Scale
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2	Key map	I-A	Not to scale
3	Topo sketch-10Km Radius	II	1:1,00,000
4	Lease Plan	III	1:2000
5	Surface cum Geological Plan & section	IV	Plan :-1:2000 section scale :- HOR-1:2000, Ver-1:1000
6.	Land use cum year wise production plan & Section	V	Plan :-1:2000 section scale :- HOR-1:2000, Ver-1:1000
7.	Conceptual mining Plan & section	VI	Plan :-1:2000 section scale :- HOR-1:2000, Ver-1:1000
8.	Satellite Imaginery with E.M.P. Plan	VII	1:5000
9.	Village map showing Environmental features	VII-A	1:5000
10.	Progressive Mine Closure Plan	VIII	Plan :-1:2000 section scale :- HOR-1:2000, Ver-1:1000


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MINING PLAN INCLUDING ENVIRONMENT MANAGEMENT PLAN FOR ROUGH STONE GRAVEL QUARRY

**Over an Extent of 4.04.00 Hectares in S.F. Nos. 502/1,2p,
510/1,2 & 511/1,2 (Patta Land) in Gopalapuram Village,
Vembakottai Taluk, Virudhunagar District, Tamilnadu**

INTRODUCTION

Extracting minor minerals from an area of less than 5 hectares will need environment clearance from the Union ministry of environment and forest (MOEF). The EIA (Environmental Impact Assessment) notification 2006, requires mining projects, including new projects, expansion, modernization, or renewal of mine leases, with lease area of 5 hectare and above irrespective of major or minor mineral of obtain prior environment clearance. Mining projects with lease area of 5 hectares and above but less than 50 hectares are categorized as category 'B' whereas projects with lease area of 50 hectares and above are categorized as category 'A'. The category 'A' projects are to be given clearance by MOEF while category 'B' projects are considered by the respective state-level EIA authority.

The mining plan has been prepared towards the order of Supreme Court of India 27 February, 2012, based on the Supreme court order, Tamilnadu Government , Secretary, Industry Department (NCI) as issued order vide G.O.Ms.No.79 dated 06.04.2015. In this order Tamilnadu Minor Mineral Concession Rule 1959 as amended rule 41 & 42 as the approved mining plan is required to the grant of mining lease and the lessee of existing quarry which has already granted with quarry lease should also obtain environmental clearance from SEIAA, Tamilnadu.

The approved mining plan has to be obtained prior environment clearance by the committee formed recently by the SEIAA. The government of tamilnadu has formed one committee headed by the chairmen of SEIAA and the nominated members from each department as members. The environment clearance has to be issued by the SEIAA to grant of quarry lease and this mining plan is submitted based on the above orders to obtain environment clearance from SEIAA Tamilnadu committee.

[Handwritten signature]
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The applicant, Thiru. S. Devaraj, S/o. Sri. K.R. Subbiah, 19/29, G2, Krishnan Colony, Nerkundram Pathai, Vadapalani, Chennai - 600 026 has an individual having good experience and skill on quarrying of Rough Stone and Gravel. He has applied for fresh grant of Quarry lease to the state government over an extent 4.04.00 Hectares in S.F. Nos. 502/1,2p, 510/1,2 & 511/1,2 (Patta Land) in Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

1. General Information

- a) Name of the applicant : THIRU. S. DEVARAJ
- b) Address of the Applicant : THIRU. S. DEVARAJ
S/o, SRI. K.R. SUBBIAH
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI. - 600 026.
- c) Mobile No. : 97907 75777
- d) Status of the applicant : Private Individual
- e) Mineral which the applicant intends to mine : Rough Stone and Gravel
- f) Precise area communication letter details received from the competent authority of Government : KV 1/848/2021-KANIMUM
Dated : 28.02.2022
- g) Period of Permission / lease to be granted : 10 Years. (As per G.O.(Ms) No.208, Industries (MMC-1) Department dated. 21.09.2020)
- h) Name and address of the RQP /Authorised person preparing the Mining plan : M. Dharmalingam, MSc(Geol.), FCC(Mining),
No.28, Pol Pettai,
Thoothukudi - 628 002,
Mobile No. 99528 08238

Registration No : RQP/MAS/260/2014/A



2. LOCATION

STATE	DISTRICT	PANCHAYATH UNION	TALUK	VILLAGE	S.F.NO	EXTENT (Hectares)
Tamil nadu	Virudhu nagar	Vembakottai	Vemba kottai	Gopalapuram	502/1,2p, 510/1,2 & 511/1,2 (Patta Land)	4.04.00 Hect

b) Classification of the area : Patta Lands

c) Ownership / Occupancy of the applied area : Patta lands
(Surface right)

d) Toposheet No : 58-G/11

Latitude : 9° 21' 08.4"N to 9° 21' 16.4"N

Longitude : 77° 37' 14.5"E to 78° 37' 23.7"E

e) Existence of public road / Railway line, : The area applied for quarry lease lies in 17km south side of Srivilliputhur & joins at Srivilliputhur to Vadakarai main road and 0.6km south of Gopalapuram as shown in the KEY MAP (Plate No.1A).. The nearest Rail Head is at Rajapalayam at a distance of 17km, The nearest airport is at Madurai in 100Km distance.

Part-A

3. GEOLOGY AND MINEABLE RESERVES

3.1 Topography and general Geology

The area applied for mining lease is a gentle plain terrain. The area applied for quarry lease is dry lands without any vegetation. The gravel having a thickness of 5m.

The rocks in this area belonging to ARCHEAN group of rocks. Below the Gravel formation a hard Rough stone Charnockite are noted. The rocks are Phaneric to medium grained nature. And in these rocks there are mineral constituents of BLUE QUARTS, MICRO CLINE FELDSPAR, HYPERSTHENE and flacks of BIOTITE MICA. The rocks are striking towards North - South direction dipping 80° Vertical towards East direction. The strike length of the deposit is 180m with an average width of 136meter on southern side and and 184m length and 120m width on northern side.

3.2 DETAILS OF EXPLORATION

As noted in the nearby working quarry and wells in the radius of 500m, the gravel having a thickness of 5m. Below 5m Charnockite (Rough stone) is noted.

3.3 ESTIMATION OF RESERVES.

Reserves have been calculated based on the cross section method. The strike length of the deposit is 180m with an average width of 136meter on southern side and and 184m length and 120m width on northern side.

Based on the above data geological reserves and mineable reserves has been calculated for a depth of 35 meter. The reserves have been computed for depth of 0 to 5m in gravel and from 5. to 35meter in Rough stone The details of reserves are shown in annexure I and in Geological Plan & Section Plate No IV.

SL NO	TYPE OF RESERVES	Gravel Cub.m	Rough stone Cub.m
1	Geological reserves	2,32,800	13,96,800
2	Mineable reserves	1,90,060	7,07,060
3	Bench locked & 7.5m boundary barrier	42,740	6,89,740

4. MINING

The area is under working by Semi-Mechanised open cast method. The bench height of the quarry is maintained to the height of boom of the machine used for digging and excavation.

In the area applied for ML a boundary barrier of 7.5 meters has been left all direction safety distance of 10m on south & western side cart track.



During first five years the mining operation will be commenced from the southern portion (Section PQ-AB) of the applied lease area to a strike length of 50m, width 118m. The gravel formation will be removed up to 5.0m, and below 5m depth three bench of each 5m depth will be made in rough stone to achieve the planned production quantity.

During next five years (VIth to Xth year) the mining operation will be commenced from the northern portion (Section PQ-CD) of the applied lease area to a strike length of 30m, width 102m. The gravel formation will be removed up to 5.0m, and below 5m depth six bench of each 5m depth will be made in rough stone to achieve the planned production quantity.

At the end of tenth year the mine will be having a depth of 30m with 6 benches in rough stone and 5m depth in gravel. During every year working the bench with will be maintained more than the height of the bench with a bench slope of 60° for safe reversal and working of machinery and movement of trucks.

During 10 years working the following quantity of rough stone & gravel will be removed and the details are given below.

YEAR WISE PRODUCTION SCHEDULE

YEAR	GRAVEL IN CU.M	ROUGHSTONE IN CU.M
I	29500	59300
II	23600	66600
III	23600	66600
IV	23600	66600
V	15300	84400
First 5 Year Total	1,15,600	3,43,500
VI	15300	73800
VII	15300	77500
VIII	15300	74100
IX	15300	73800
X	13260	64360
2nd 5year Total	74,460	3,63,560
10Year Total	1,90,060	7,07,060

Machineries used

The blasted ROM will be excavated by TATA HITACHI EX200. For drilling tractor mounted compressor of 175 cfm will be used matching with jackhammers. For drilling two Tc drill rods of 32 mm dia will be used and the drill rod depends upon the depth of drilling. Normally drill rods of .9m length and 1.5m length will be used in the quarry. For transportation 10 tons tippers will be used for transporting ROM and reject from the quarry. The ground water table in this area is ranging from 45 to 50 meter. A diesel pump will be kept for dewatering rain water during rainy season. For manual production the labours will be provided with pick Axe, Spaded, crowbar, iron basket and hammer.

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DETAILS OF MACHINERIES TO BE USED IN QUARRY

Sl. NO	NAME OF THE EQUIPMENT	CAPACITY	REQUIRED
1	Excavator	TATA HITACHI EX200	1
2	Tipper	10 Tonnes	6
3	Tractor compressor for drilling	175 CFM	2
4	Dewatering pump	5 Hp Diesel pump	1

MARKETING OF ROUGH STONE AND GRAVEL

The boulders will be marketed to the nearby crushers for producing crusher aggregates. The gravel & reject hard boulders will be marketed to filling and foundation works for construction works. The crusher aggregate will be marketed to nearby areas,

CONCEPTUAL MINING PLAN

Conceptual mining plan is prepared in a scale of 1:2000 in an object of long-term systematic development of bench layouts. In addition to consider the above factors, to avoid re-handling, setting roads, to determine ultimate pit limit depth of mining and ultimate pit slope, selection of sites for construction of infrastructures etc.,

Ultimate pit limit dimension:

The ultimate pit size is designed based on certain practical factor such as the economical depth of mining safety zones permissible area etc. The ultimate pit of the mine is given as

170meter Length, 118meter Width, 35.0 meter Depth on Southern side and

176meter Length, 102 meter Width, 35.0 meter Depth on Northern side.

However during extraction of ROM bench will be 5m height with a slope of 60° for proper quarrying.

The gravel will be marketed. After quarrying the mined out area will be used as water reservoir for making artificial recharge factor to the nearby areas.

The Conceptual Plan and Sections is shown in Plate No. VI. The mineable reserves calculated for a depth of 35meter a total Roughstone of 7,07,060m³ & Gravel 1,90,060m³. Based on an average production of maximum quantity of 85,000 m³ to 90,000 m³/year. The life of the mine will be 8,97,120/85,000 m³ = 10 years. The available reserve below 35m can be mined in the next quarry renewal period after 10 years. The next five years period more quantity of Rough stone can be quarried. Since the entire gravel which occurs to a depth of 0 to 5meter is planned for excavation during the present ten year working.

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5. BLASTING

5.1 BLASTING PATTERN

The massive formation shall be broken in to pieces of portable size by drilling and blasting using jack hammers and shot holes blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 1.8 to 2.0 per cub.m. Explosives. Blasting parameter proposed to be adopted for shot holes shall be

Spacing of 0.9 m, burden 0.60m and depth 1.5m

Output per hole = 0.9 m X 0.60m X 1.5m = 0.810 cub.m

Output per hole will be 0.810 cub.m with 90% blasting efficiency

Quantity of explosive required to blast one hole with a powder factor of 1.8

Explosive required will be $0.810 / 1.8 = 0.450$ kg per hole

In the above quantity booster Cap sensitive explosives will be one third 0.150 kg per hole

Daily conception of explosive will depend upon the number of shot holes drilled.

5.2 TYPES OF EXPLOSIVES

Following explosives are recommended for efficient blasting with safe practice

Sl.No	Description	Class/ Division	Type	Size
1	Slurry Explosive	Class - 3	Nitro compound mixer	25mm X 0.125 kg
2	Delay Detonators	Class - 6	Ordinary and elect. (OD & ED)	Standard size of IDL
3	Safety Fuse	Class - 6 Div - 1	Blue sump fuse coil of 10 meter each	

5.3 MEASURES PROPOSED TO MINIMISE GROUND VIBRATION DUE TO BLASTING

There are no villages near by the area applied for mining lease. To control ground vibration delay electric detonator will be used.

5.4 STORAGES AND SAFETY MEASURES

The proposal rate of production is about 299m^3 or 35loads / day of 3units capacity of ROM boulder in one day with average working days of 25 in a month.

The applicant has made an agreement with explosive M/S New Prince Explosives, 7/72, Middle street, Elayirampannai Post, Vembakottai Taluk, Vembakottai District-626 201 who is having explosive licence bearing no: E/SC/TN/22/719 (E99261) received from chief controller of explosive, Chennai. The owner of the Firm made agreement with Sri, S.Devaraj to make necessary safety practice to blast in his licence and supply of explosives will be made in Form 22 as specified by Indian Explosives Act 1884. (Annexure- XVI)

After blasting no explosives will be kept in the mine area and the unused explosives will be taken up by the explosive dealer. Before blasting the explosives will be carried by the dealer in his own explosive van and the unused quantity will be returned to the explosive van for keeping the explosive in his Magazine. Before blasting men and animals will be cleared in a surrounding distance of 500m and three sirens will be made before blast and after completing blasting a long siren will be given. Safety guards with red flags will be posted on all the four side direction.

6. MINE DRAINAGE

From the local enquire the ground water table in this area is ranging from 45 to 50m. The open dug wells are noted around the applied lease area. The wells are having a depth ranging from 14 to 16m and the wells are dry. There are also no joints or fractures in the hard rock. The area attains rain fall during northeast monsoon. Hence there will be no adverse affect by the mining to the nearby areas.

Sl. No.	Details	Direction	Distance (m)	Depth(m)	Water level
1.	Well	North	200	15.0	Dry
2.	Well	North	100	14.0	Dry
3.	Well	East	185	12.0	Dry
4.	Well	East	300	15.0	Dry
5.	Well	East	165	14.0	Dry
6.	Kulam	South	60	0.5	Dry
7.	Well	South	235	12.0	Dry
8.	Well	South	155	14.0	Dry
9.	Well	South	165	14.0	Dry

7. OTHER PERMANENT STRUCTURES

There is no hospital or Primary school, village temples and primary health centres within 500m radius of the quarry. There is no river, lake nearby this area. There are also no historical monuments nearby this area. There are also no worship places, reserve forest, social forest, and wild life sanctuaries near this area. The water bodies are dry in all the season.

SL. NO	DIRECTION	VILLAGE	HABITATION	DISTANCE
1	North	Devarayanpatti	350	1.5 km
2	South	Mettuvadakarai	500	1.5 km
3	East	Gopalapuram	700	0.6 km
4	West	Kurichiyarpatti	600	2.0 km

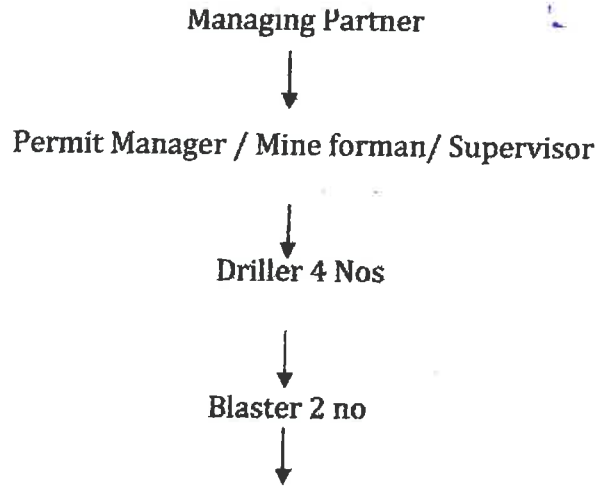
Nearest infrastructures

Sl. No	Name of infrastructure	Name of village	Distance from area applied for M.L
1	Post office	Gopalapuram	0.6 Km
2	Police station	Rajakularaman	5.0Km
3	Town	Rajapalayam	16.0Km
4	DSP office	Rajapalayam	16.0Km
5	Register office	Rajakularaman	5.0Km
6	Hospital	Kilavikulam	3.0Km
7	School	Kilavikulam	3.0Km
8	Railway station	Rajapalayam	16.0Km
9	Airport	Madurai	74.0km
10	Sea Port	Thoothukudi	85.0km

8. EMPLOYMENT POTENTIAL & WELFARE MEASURES



ORGANISATION CHART



Unskilled persons for segregation loading of boulders and helpers 10 nos

The workers will be provided with drinking water facility, sanitation facility in the proposed office building. A bore well will be drilled near the office building.

First aid and labour health facility will be arranged from the nearby hospital at Kilavikulam. All safety equipments will be provided for the persons employed in the mine. The supervisor will be provided with mobile phone to contact the owner or any officials during emergency time.

SAFETY AND SOCIAL SECURITY MEASURES

Safety equipments to be provided for the persons employed in the mines.

1. Safety helmet approved by Director General of mines Safety
2. Nose Mask
3. Ear Plug for machine operators and drillers
4. Safety shoes as specified by Director General of Mines Safety
5. Safety Goggles for drillers
6. Safety Belt and safety rope approved by Director General Mines of Safety - for labourers, working in the mine for removing danger over hang and undercut boulders. Employment of child labour will be strictly prohibited in the mines. All persons employed in the mines will be provided with Group Insurance System from a Govt. Recognised insurance Agency.

The applicant has given Notary Affidavit for Non employment of child labour directly or indirectly while operating the mine. The Affidavit is enclosed.

PART -B

9. ENVIRONMENT MANAGEMENT PLAN

9.1 Existing land use pattern

The area applied for mining lease is a gentle plain terrain and having dry lands with no. vegetation available nearby this area. From the study of the nearby well the ground water table is ranging from 45 to 50m.

The area will obtain rain fall during NE monsoon in summer the climate will be very hot and the temp will be up to 90°

LAND USE TABLE

Description	Area at the end of this quarrying period (Ha)
Area Under Quarrying	3.80.00
Infrastructure & Roads	0.02.00
Fencing	0.04.50
Green Belt	0.18.00
Unutilized Area / Safety Area	0.00.00
Grand Total	4-04.50 Hectares

The area applied for mining lease is a plain terrain and having dry lands. The patta land is used for quarrying Rough Stone blue metal. Infra structure will be provided in the patta land. First aid, sanitation facilities is also provided in the office building. The Patta Land with Surface right.

9.2 Water regime:

Ground water occurrence in this area is 45m depth. The quarrying is restricted up to 35m below Ground Level. Hence the quarry operation will not be affected by the ground water.

9.3 Flora and Funna:

There are no trees observed in the area. Thorny bushes, neem and palm are found in around the area, No plants of botanical interest or animals of zoological interest are noticed. There is no cultivation, plantation or agriculture found within the vicinity of the area.

9.4 Climatic condition

The area receives rainfall of about 850/per annum and the rainy season is mainly from Oct - Jan during North East monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 23°C.



9.5 Human settlement

There is no hospital or Primary school, villages, temples and primary health centres within 500m radius of the quarry. There is no river, lake nearby this area. There are also no historical monuments nearby this area. There are also no worship places, reserve forest, social forest, and wild life sanctuaries near this area. The water bodies are dry in all the season.

SL. NO	DIRECTION	VILLAGE	HABITATION	DISTANCE
1	North	Devarayanpatti	350	1.5 km
2	South	Mettuvadakarai	500	1.5 km
3	East	Gopalapuram	700	1.0 km
4	West	Kurichiyarpatti	600	2.0 km

Basic human welfare Amenities such as Health centre, schools, communication facilities, and commercial centres etc., are available at Kilavikulam located at a distance of 5Km.

9.6 Plan for Air, Dust suppression

The air quality will be affected by the Suspended Particle Matter (SPM) generated by the blasting, Jack hammer drilling, Loading and unloading during the Roughstone quarry operation.

The following Mitigations measures will be carried out:

- Mist Water spraying will be carried out by means of water sprinklers to suppress the dust emission in the Haul roads.
- Vegetations will be formed around the quarry to trap the dust.
- Avoiding spillages during the transportation.

AMBIENT AIR QUALITY (AAQ):

The ambient air quality depends upon the emission sources, meteorological conditions and the background concentration of specific contaminants. The principal objective of the Ambient Air Quality Monitoring (AAQM) is to assess the existing levels of ambient air quality in and around the lease area for assessing the impact on air quality due to future mining activity in the region.

With the above objective, the following parameters were analyzed at the sampling locations established in the study area.

- ❖ Particulate Matter (PM₁₀)
- ❖ Particulate Matter (PM_{2.5})
- ❖ Sulphur Dioxide
- ❖ Oxides of Nitrogen
- ❖ Carbon Monoxide

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DESIGN CRITERIA FOR AMBIENT AIR QUALITY MONITORING STUDY NETWORK:

Ambient Air quality has been assessed through a net-work of 3 ambient air quality stations. The following methodology has been considered for design of ambient air quality monitoring network in the area.

- ❖ Topography / terrain of study area.
- ❖ Populated areas within study area
- ❖ Residential /sensitive areas within study area
- ❖ Predominant wind direction and wind pattern

9.7 Plan for noise level control:

Shallow holes of 32mm diameter and 1.5m depth will be drilled and to control ground vibration conventional low power explosives such as slurry explosives, delay electric detonator will be used for rough stone. Hence ground vibration and noise pollution will be minimal and restricted within the quarry workings. There are no villages near by the area applied for mining lease.

The drivers will be strictly inducted to move the vehicle during the transportation not exceed 40km per hour. Sentries with flags & whistle will posted in village junction and populated area to control and regulate traffic.

9.8 Environment impact assessment statement

The mining plan proposed is for a production of Roughstone with involving deep hole drilling and heavy blasting permission as per MMR1961 Regulation 106 (2b) against Director General of Mines Safety, Chennai Region. Such limited mining activity is not likely to cause any impact adversely on environment as for as pollution of air, water and noise is concentrated, anyhow environmental impact studies will be conducted as per EIA botification issued by MOEF. It is B2 category mine. For the average production of 85,000 m³ to 90,000 m³/year is planned. Besides **one working Quarry** and No villages in the surrounding radius of 500 metres.

To avoid environmental pollution during transport of Charnockite (Roughstone) to various destinations the loaded truck will maintain a speed of 40 km / hour. The loaded truck will be covered with tarpaulin cover to avoid dust generation during vehicle movement on the roads. Hence there will not be any environment impact to the mining area are to the nearby villagers.



9.10 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing)

In the proposed mining plan only a maximum depth of 35m 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 35m depth) fencing will be constructed around the quarries pits to prevent inherent entry of the public and cattle. There is no proposal for reclamation and rehabilitation.

9.11 Proposal of Afforestation

The proposal of afforestation and land use is shown in Plate No: VI & VIII. The detail of proposed afforestation is given below.

Plantation	Type	No. of Trees	Spacing	Area (Hectares)	Survival
I YEAR	Neem	20	3m x 3m	0-01.8	80%
II YEAR	Neem	20	3m x 3m	0-01.8	80%
III YEAR	Neem	20	3m x 3m	0-01.8	80%
IV YEAR	Neem	20	3m x 3m	0-01.8	80%
V YEAR	Neem	20	3m x 3m	0-01.8	80%
VI YEAR	Neem	20	3m x 3m	0-01.8	80%
VII YEAR	Neem	20	3m x 3m	0-01.8	80%
VIII YEAR	Neem	20	3m x 3m	0-01.8	80%
IX YEAR	Neem	20	3m x 3m	0-01.8	80%
X YEAR	Neem	20	3m x 3m	0-01.8	80%
TOTAL		200		0-18.0 Ha	

The applicant will arrange for watering the plants for effective survival of the plant. The afforestation will be properly monitored by the persons employed in the mines. The applicant has also given Notary Affidavit to make afforestation as specified with mining plan to make the area as green belt and to protect the environment.

9.11 Proposal for water management

	DETAILS	SOURCE	PROVISION QUANTITY/DAY
A	Drinking water & Domestic	From existing bore well & water vender	1.500KLD
B	Dust Suppression-water sprinkling	From existing bore well	1.300 KLD
C	Green belt	From the water tanker and the bore well	0.600 KLD
	TOTAL		3.400KLD

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9.13 PROPOSED FINANCIAL ESTIMATE BUDGET FOR (EMP) ENVIRONMENT MANAGEMENT



Sl.no.	Details	In Rs.
1.	LAND INVESTMENT COST Total Applied SF Nos. 502/1,2p, 510/1,2 & 511/1,2 = 4-04.00Ha. (Rs.4,94,500/Hectare as per Market rate) www.tnreginet.gov.in 4-04.0Ha x Rs 4,94,500 =	19,97,780
2.	FIXED INVESTMENT COST	
i)	Labour shed (already constructed previous lease period)	Rs. 1,00,000
ii)	First aid room and accessories (Repair work)	Rs. 75,000
iii)	Toilet room with septic tank Facility construction & sanitary facility (for five years repair work)	Rs. 50,000
iv)	Drinking water for staffs & Labour from water vendors (for five years)	Rs. 1,25,000
	TOTAL FIXED INVESTMENT COST =	Rs. 3,50,000
3.	OPERATIONAL COST (Siegncorage fee per unit for transport permit to be paid to state government Rs.26/m ³ at the time of marketing will be paid by Purchaser only.) Machinery to be used for Hired basis Total Number of Excavator = 2Nos (Rs.15,00,000/1No.) = Compressor with Drilling used for hired basis Total Number of compressor with Drilling Machine used for quarrying = 2Nos (Rs.2,00,000 /1No.) =	Rs. 30,00,000 Rs. 4,00,000
	TOTAL OPERATIONAL COST =	Rs.34,00,000

4.	EMP COST			
Sl.no.	Details	Cost per Month (Rs.)	Total Cost per Year (Rs.)	Total cost for 10 years lease period (Rs.)
i)	Greenbelt development (plantation & maintenance)	1000	12,000	1,20,000
ii)	Fencing arrangements & wind net arrester	-	-	1,50,000
iii)	Occupational health safety kits (mask, helmet, sanitizer, gloves, etc.,)	500	6,000	60,000
iv)	Water sprinkling using own tractor for the area (Control of Dust suppression)	1000	12,000	1,20,000
v)	Environmental parameters testing expenses fees for every six months a. Ambient Air monitoring b. Water analysis c. Noise Monitoring d. Soil testing e. Ground Vibration Monitoring	6,000 (bi-annual)	12,000	1,20,000
	Total EMP Cost=			Rs. 5,70,000

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1.	Land Investment Cost	Rs. 19,97,780
2.	Fixed Investment Cost	Rs. 3,50,000
3.	Operational Cost	Rs. 34,00,000
4.	EMP Cost	Rs. 5,70,000
TOTAL PROJECT COST		Rs. 63,17,780
CER @ 2% Project cost Carrying out provisions of Drinking water with dispensations Toilet/sanitary especially for girls students in Sevalpatti Government School, Vembakottai Taluk, Virudhunagar District.		Rs. 1,26,355

10. MINE CLOSURE PLAN

- The mined out area will be suitably fenced to avoid inadvertent entry of men and animal to the quarry area.
 - After closure of mine the applicant will adhere the rules and regulations governed by state and central government
 - All safety measures and mitigations will be maintained properly in the mined out area. Security persons will be engaged in all three shifts to ensure safety in the quarry.
- The progressive mine closure plan is enclosed in Plate No. VIII.

11. ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT

(i) Care and precautionary measures will be taken for the safety of workers as per Mines Rules-1955 and Mines Acts-1952.

(ii) The applicant will endeavor every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.

(iii) Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

PLACE: THOOTHUKUDI

DATE: 04.04.2022

Mining Plan Approved
[Signature]
**ASSISTANT DIRECTOR
GEOLOGY AND MINING
VIRUDHUNAGAR DISTRICT
VIRUDHUNAGAR**

[Signature]
M. DHARMALINGAM
Signature of the ROP
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
ROP / MAS / 260 / 2014 / A

ANNEXURE- I GEOLOGICAL RESERVES



MINERAL	SECTION	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLIUME IN CUM	TOTAL VOLUME IN CU.M.
GRAVEL	PQ-AB	180	136	5.0	122400	2,32,800
	PQ-CD	184	120	5.0	110400	
ROUGH STONE	PQ-AB	180	136	30.0	734400	13,96,800
	PQ-CD	184	126	30.0	662400	
TOTAL GEOLOGICAL RESERVES					16,29,600 Cu.M.	

MINEABLE RESERVES

MINERAL	SECTION	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLUME IN CUM	MINEABLE RESERVES IN CUM
GRAVEL	PQ-AB	I	170	118	5.0	100300	1,90,060
	PQ-AB	I	176	102	5.0	89760	
ROUGH STONE	PQ-AB	II	165	108	5.0	89100	7,07,060
	PQ-AB	III	160	98	5.0	78400	
	PQ-AB	IV	155	88	5.0	68200	
	PQ-AB	V	150	78	5.0	58500	
	PQ-AB	VI	145	68	5.0	49300	
	PQ-AB	VII	140	58	5.0	40600	
	PQ-CD	II	171	92	5.0	78660	
	PQ-CD	III	166	82	5.0	68060	
	PQ-CD	IV	161	72	5.0	57960	
	PQ-CD	V	156	62	5.0	48360	
	PQ-CD	VI	151	52	5.0	39260	
	PQ-CD	VII	146	42	5.0	30660	
TOTAL MINEABLE RESERVES							8,97,120

M. Dharmalingam
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
POP/ MAS / 260 / 2014 / A

ANNEXURE - II

PRODUCTION SCHEDULE FOR 10 YEARS PERIOD



YE AR	SECTION	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLUME IN CUM		TOTAL PRODUCTION IN CUM
						GRAVEL	ROUGH STONE	
I	PQ-AB	I	50	118	5.0	29500	----	88,800
	PQ-AB	II	45	108	5.0	----	24300	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	35	88	5.0	----	15400	
II	PQ-AB	I	40	118	5.0	23600	----	90,200
	PQ-AB	II	40	108	5.0	----	21600	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	40	88	5.0	----	17600	
	PQ-AB	V	20	78	5.0	----	7800	
III	PQ-AB	I	40	118	5.0	23600	----	90,200
	PQ-AB	II	40	108	5.0	----	21600	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	40	88	5.0	----	17600	
	PQ-AB	V	20	78	5.0	----	7800	
IV	PQ-AB	I	40	118	5.0	23600	----	90,200
	PQ-AB	II	40	108	5.0	----	21600	
	PQ-AB	III	40	98	5.0	----	19600	
	PQ-AB	IV	40	88	5.0	----	17600	
	PQ-AB	V	20	78	5.0	----	7800	
V	PQ-CD	I	30	102	5.0	15300	----	99,700
	PQ-AB	V	90	78	5.0	----	35100	
	PQ-AB	VI	145	68	5.0	----	49300	
FIRST FIVE YEAR PRODUCTION (I TO V)						115600	343500	4,59,100
VI	PQ-CD	I	30	102	5.0	15300	----	89,100
	PQ-CD	II	60	92	5.0	----	27600	
	PQ-CD	III	60	82	5.0	----	24600	
	PQ-CD	IV	60	72	5.0	----	21600	
VII	PQ-CD	I	30	102	5.0	15300	----	92,800
	PQ-CD	II	30	92	5.0	----	13800	
	PQ-CD	III	30	82	5.0	----	12300	
	PQ-CD	IV	30	72	5.0	----	10800	
VIII	PQ-AB	VII	140	58	5.0	----	40600	89,400
	PQ-CD	I	30	102	5.0	15300	----	
	PQ-CD	II	30	92	5.0	----	13800	
	PQ-CD	III	30	82	5.0	----	12300	
IX	PQ-CD	IV	30	72	5.0	----	10800	89,100
	PQ-CD	V	10	62	5.0	----	3100	
	PQ-CD	VI	130	52	5.0	----	33800	
	PQ-CD	I	26	102	5.0	13260	----	
	PQ-CD	II	21	92	5.0	----	9660	
	PQ-CD	III	16	82	5.0	----	6560	
X	PQ-CD	IV	11	72	5.0	----	3960	77,620
	PQ-CD	V	26	62	5.0	----	8060	
	PQ-CD	VI	21	52	5.0	----	5460	
	PQ-CD	VII	146	42	5.0	----	30660	
	PQ-CD	VII	146	42	5.0	----	30660	
NEXT FIVE YEAR PRODUCTION (VI TO X)						74460	363560	4,38,020
TOTAL PRODUCTION						1,90,060	7,07,060	8,97,120

M. DHARMALINGAM

M.Sc. (Geol.) FCC (Mining)
Recognised Qualified Person
RQP / MAS / 260 / 2014 / A



Base Line Studies

The base line studies is prepared for Rough stone & Gravel quarry Gopalapuram Village, Vembakottai Taluk, Virudhunagar District, over an extent of 4-04.00 hectares in SF Nos. 502/1,2p, 510/1,2 & 511/1,2. The proposed quarry lease will be granted for a period of 10 years. The total planned production quantity for 10 year in rough stone 7,07,060cum & gravel 1,90,060cum.

The project in the area will provide a quit considerable employment to nearby village which in turn enhance the earning source of the nearby villagers. The comprehensive base line studies and standards constitute of collecting data on ambient air quality, dust fall rate, water quality, soil analyze, noise level and ground vibration study in the area proposed for quarrying along with flora and fauna statistics.

General approach to Environment:

The environment studies besides data comprise of the features present in the site area it includes environmental features such as forest area, conservation area, water bodies, industries, wild life and fauna place of historic and importance etc.,

1. Air environment
2. Noise environment
3. Water environment
4. Ecology (biological and cultural environment)
5. Physical environment

Air Environment

The rough stone quarry is non toxic which does not emit any undesirable pollution in the form of solid, liquid and gas. The dust emitted during the transportation of vehicles and the drilling will be carried out in wet condition to prevent dust into air and the haul roads will be periodically sprinkled with mist water spray to prevent dust into the atmosphere. The area in and around is quit fresh and the impact on air environment will always be under control and will be monitored. No processing or beneficiation is proposed except quarrying hence the impact on air will be controlled, monitored and mitigated.

Noise Environment

The noise will be only during blasting. For controlling noise proper and adequate explosives will be charged to the short holes. The machineries will be properly made preventive maintenance to avoid much noise during machinery working. Except these features there are no possibilities of producing much noise during quarry working.

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Ground vibration studies

The vibration source only through the movement of vehicles where the frequency is also very less. Hence the vibration is well below the standard permissible by MOEF. Displacement, velocity and acceleration of the three kinematics descriptions which are to be studies to describe ground motion. The peak particle velocity is the more referred since the area is virgin there is no signification measured velocity found in the area. During blasting delay electric detonators will be used to minimize vibration during blasting.

Water Environment

Geo - physical investigation was carried out by adopting wenner method. To find out the lateral variation and vertical in homogeneity's. The hydro - geological report is enclosed.

Soil analysis

The area applied for mining lease is flat terrain with little undulations covered by gravel for a depth of 5.0 meter followed by massive rock. The gravel is loose and natural growths to trees or plants are negligible except small bushes.

Climate

The area receives annual average rain fall of 825mm during southwest monsoon (June - Sep) and northeast monsoon (Oct - Dec). Temperature falls between 42°C - 23°C. Rainy season is three months in a year from October to December during monsoon. Temperature is maximum during May - June in a year.

Flora and fauna in and around the area

In small quarrying projects like this which involves very limited operations like secondary drilling and blasting conservation of flora and fauna along with ecology does not have significant impact of the overall eco system. A detailed survey related to flora and fauna was observed physically, the in and around area was seasonal dry cultivation, predominantly maize, cotton and millet and naturally grown trees like neem tree, karuvelam (juliflora) etc. The fauna is goat, rat crow, cat, ant, cow and squirrel etc.

Conclusion The base line studies relents no hazardous levels of dust and noise and prevailing at the project area. A well implemented environment management plan as discussed in the mining plan will help in mitigation of the adverse effects due to quarry activities.

The flora in the area is only small thorny bushes as much of the area exhibits flat terrain. No trees are proposed to uproot for the project and new trees will be planted on boundary barrier which will act as acoustic sound barriers. Environment care and attitude preventing environment is instructed to the proponent and advice to carry out and mitigate the minor impacts due to quarrying.



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M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
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HYDROGEOLOCAL SURVEY REPORT

1. Name of the Applicant : Sri, S. Devaraj, S/o. Sri. K.R. Subbiah.
2. Major/ minor mineral : Roughstone, Jelly and gravel (minor mineral)
3. Location :
 - i). Survey nos : 502/1,2p, 510/1,2 & 511/1,2
 - ii). Village : Gopalapuram
 - iii). Taluk : Vembakottai
 - iv). District : Virudhunager
4. Total Extent : 4-04.00 Hectares
5. Category of ground water : safe category (over all district)
6. Geomorphology : plain terrain covered with gravel
thorny bushes and no vegetations and the
slope of the land is very gentle towards south.
7. Geology : weathered gravel & massive charnockite.
8. Climate : Tropical
9. Average annual rainfall : 825mm
10. Nearby recharging sources : There are water recharging source of
Kulam on Southern side. These Kulam are
mostly dry in all seasons and will have water
staged only during heavy rainy season. Due to
monsoon failure the Kulam cannot be taken
as a recharge source.
11. Water level in near area : 45 to 50 meters from the local enquire.
12. Quality of the ground water : Not potable CaCl, NaCl, & CaCo₃.
13. Hydro- geological conditions: The hard rock area allows rain water seepage
Only in weathered, fissured and fracture
zones And the ground water storage and
Movement is very poor in the study area.
14. Geophysical study : Geophysical survey conducted in wenner
depth sounding method for a depth of 40m.
The apparent resistivity Vs depth curve and
1/R inverse slope curve shows occurrence of
hard rock formations below 5m depth.


M. DHARMALINGAM
M.Sc., (Geol.) FCC., (Mining)
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Location : Gopalapuram
Panchayat : Gopalapuram
Taluk : Vembakottai
District : Virudhunagar



D.P. No.1

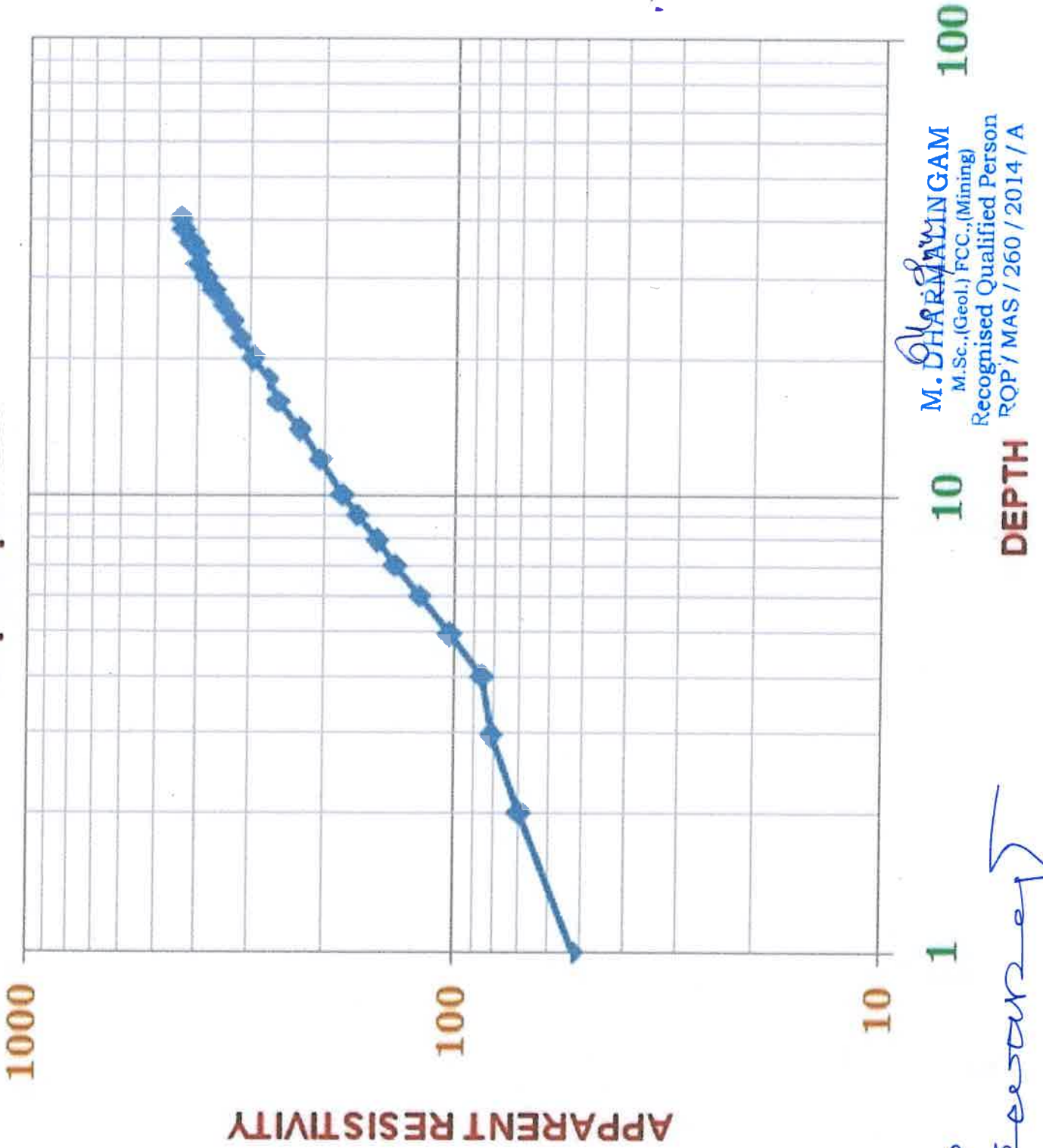
a	r	pa	a/pa
1	8.335	52.34	0.019
2	5.568	69.93	0.029
3	4.342	81.80	0.037
4	3.419	85.89	0.047
5	3.254	102.18	0.049
6	3.212	121.03	0.050
7	3.125	137.38	0.051
8	3.043	152.88	0.052
9	3.010	170.13	0.053
10	2.912	182.87	0.055
12	2.755	207.62	0.058
14	2.640	232.11	0.060
16	2.580	259.24	0.062
18	2.445	276.38	0.065
20	2.380	298.93	0.067
22	2.310	319.15	0.069
24	2.214	333.69	0.072
26	2.164	353.34	0.074
28	2.095	368.38	0.076
30	2.038	383.96	0.078
32	1.991	400.11	0.080
34	1.895	404.62	0.084
36	1.842	416.44	0.086
38	1.816	433.37	0.088
40	1.765	443.37	0.090

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M. DHARMALINGAM
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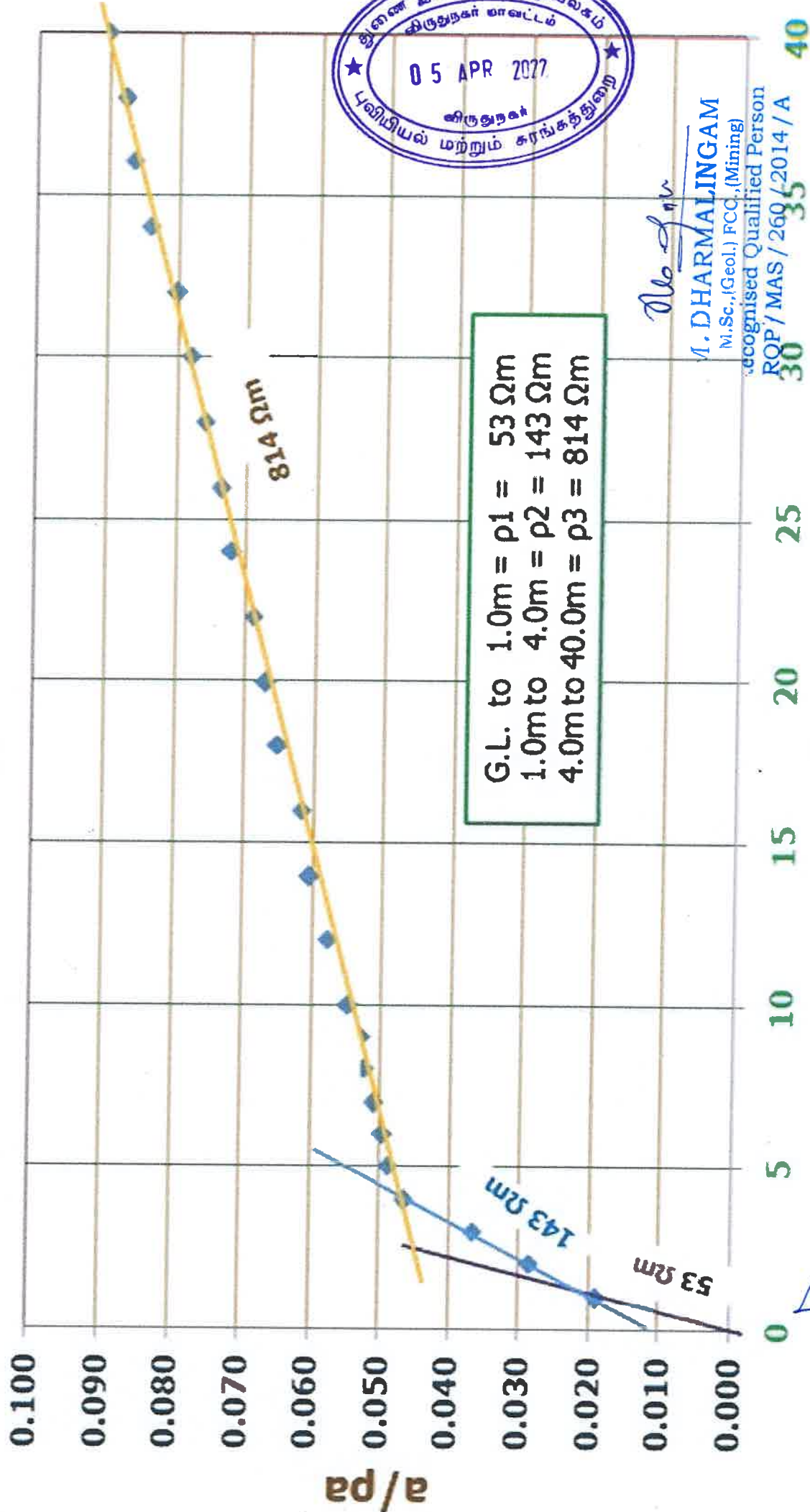


Gopalapuram



[Handwritten signature]

Gopalapuram - Inverse Slope Method



U. of M.

A. DHARMALINGAM
M.Sc., (Geol.) FCCQ, (Mining)

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DEPTH IN METERS

[Signature]

भारत सरकार / GOVERNMENT OF INDIA
 खान मंत्रालय / MINISTRY OF MINES
 भारतीय खान ब्यूरो / INDIAN BUREAU OF MINES



Ob. Dharmalingam

अर्हता प्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र
 (खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)
CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON
 (Under Rule 22C of Mineral Concession Rules, 1960)

श्री एम. धरमलिंगम, नं.28, पोलपट्टी, टूटीकोरिन- 628 002, तमिलनाडू, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिनहोंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनि जरियायत नियमावली 1960 के नियम 22सी के तहत अर्हता प्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है ।

Shri M. Dharmalingam, No.28, Polpettai, Tuticorin - 628 002, Tamilnadu State, whose **Photograph and signature** is affixed herein above, having given satisfactory evidence of his qualifications & experience is hereby **RECOGNISED** under Rule 22C of the Mineral Concession Rule, 1960 as a Qualified Person to prepare Mining Plans.

उपकीर्णजीयनसंख्या है

His registration number is

RQP / MAS / 260/2014/A

यहमान्यता 10 वर्षों की अवधि के लिए मान्यताहैजोदिनांक13.11.2024 कोसमाप्तहोगी।
 This recognition is valid for a period of 10 years ending on 13.11.2024

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी / दस्तावेज पाए जाने की स्थिति में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।

This certificate will liable to be withdrawn / cancelled in the event of furnishing the wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai

दिनांक/ Date : 14.11.2014

M. Dharmalingam
M. DHARMALINGAM
 M.Sc.,(Geol.) FCC.,(Mining)
 Recognised Qualified Person
 RQP / MAS / 260 / 2014 / A

क्षेत्रीय खाननियंत्रक / Regional Controller of Mines
 भारतीय खानब्यूरो/ Indian Bureau of Mines
 चेन्नई क्षेत्र / Chennai Region



புவியியல் மற்றும் சுரங்கத்துறை

உதவி இயக்குநர் அலுவலகம்,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
விருதுநகர்.

ந.க.எண். கேவி 1/848/2021 -கனிமம்,

நாள் : 28.02.2022

குறிப்பாணை

பொருள் : கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம் -
வெம்பக்கோட்டை வட்டம் - கோபாலபுரம் கிராமம் - பட்டா புல
எண்கள் : 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50),
511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (2.18.00)
மொத்தப்பரப்பு 4.67.50 ஹெக்டேர் - பத்துவருடங்களுக்கு
உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கல் - சரியான
பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம்
மற்றும் மாநில ஆளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு
ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது -
தொடர்பாக

- பார்வை :
1. திரு. சு. தேவராஜ், த/பெ. கே ஆர் சுப்பையா சென்னை -
600026 விண்ணப்பம் நாள் : 06.10.2021.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி 1/848/2021/நாள்
08.10.2021.
 3. சாத்தூர் வருவாய் கோட்டாட்சியர் கடிதம் எண் :
மூ.மு. அ 2/5558/2021 நாள்: 19.01.2021.
 4. திரு.சு. தேவராஜ், த/பெ. கே. ஆர். சுப்பையா,சென்னை
600026 கடிதம் நாள் : 04.02.2022.
 5. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை
புலத்தணிக்கை அறிக்கை நாள் : 05.02.2022.
 6. 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை
விதிகள் 41 மற்றும் 42.
 7. அரசாணை எண். 169 தொழில் (எம்.எம்.சி.1) துறை,
நாள் 04.08.2020.
 - 8 அரசாணை எண். 169 தொழில் (எம்.எம்.சி. 1) துறை, நாள்
21.09.2020.
 9. தொடர்புடைய ஆவணங்கள்.

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விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புல எண்கள் 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (2.18.00) மொத்தப்பரப்பு 4.67.50 ஹெக்டேர் - 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி சென்னை, வடபழனி, நெற்குன்றம் பாதை, ஜி 2-கிருஷ்ணன் காலனி, கதவு எண்:19/29 என்ற முகவரியில் குடியிருந்து வரும் திரு.சு.தேவராஜ், த/பெ. கே.ஆர். சுப்பையா என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை சமர்ப்பித்துள்ளார்.

சாத்தூர் வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோர் கீழ்காணும் நிபந்தனைகளுக்குட்பட்டு மேற்கண்ட புலங்களில் உடைகல், கிராவல் குவாரி குத்தகை உரிமம் பத்தாண்டுகளுக்கு வழங்க பரிந்துரை செய்துள்ளனர்.

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. வாய்கால், ஓடைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்ய வேண்டும்.
3. பொதுமகள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேண்பட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.



இதற்குகிடையில் 04.02.2022 தினத்தில் விண்ணப்பதாரர் அளித்த மனுவில் புல எண் 502/2 (2.18.00) ஹெக்டோ பரப்பளவில் 0.63 ஹெக்டோ பரப்பினை நீக்கி எஞ்சியுள்ள 502/2 (1.54.50) பரப்பளவில் குவாரியைச் செய் மனு அளித்துள்ளார்.

எனவே, துறை அலுவலர்களின் பரிந்துரை மற்றும் விண்ணப்பதாரரின் கோரிக்கையினை ஏற்று விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புல எண்கள்: 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (1.54.50) மொத்தப்பரப்பு 4.04.00 ஹெக்டோ நிலத்திற்கு 1959-ம் வருடத்திற்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண் 19 மற்றும் 20-ன் படி பத்து வருடகாலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise area) கருதப்படுகிறது.

தமிழ்நாடு சிறுகனிம சலுகை விதிகள் - 1959 விதி எண் : 41-ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining plan) 90 தினங்களுக்குள் சமர்ப்பிக்குமாறும், விதி எண் : 42-ன் படி மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental impact assessment authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு. சு. தேவராஜ் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்

பெறுநர்

திரு.சு.தேவராஜ்,
த/பெ. கே. ஆர். சுப்பையா,
கதவு எண் : 19/29,
ஜி 2- கிருஷ்ணன் காலனி,
நெற்குன்றம் பாதை, வடபழனி,
சென்னை.

நகல்

உறுப்பினர் செயலர்,
மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA),
சென்னை.



இட ஆய்வறிக்கை

(நாள் : 05.02.2022)

சென்னை, வடபழனி, நெற்குன்றம் பாதை, ஜி-2 கட்டுவண்ணை காலனி, கதவு எண் :19/29 என்ற முகவரியில் குடியிருந்து வரும் திரு.ச. தேவராஜ், த/பெ. கே. ஆர். சுப்பையா,என்பவர் விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புல எண்கள் . 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (2.18.00) மொத்தப்பரப்பு 4.67.50 ஹெக்டேரில் பத்து வருட காலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வேண்டி 1959-ம் வருடத்திற்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் எண் 19-ன்படி விண்ணப்பம் செய்திருந்தார். விண்ணப்ப புலங்கள் 05.02.2022 தினத்தன்று ஆய்வு செய்யப்பட்டது.

விண்ணப்பிக்கப்பட்ட புல எண்கள் : 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (2.18.00) மொத்தப்பரப்பு 4.67.50 பட்டா எண் :1006 ன் படி திரு. ச. தேவராஜ், த/பெ . கே.ஆர். சுப்பையா மற்றும் புல எண் 502/2 (2.18.00) பட்டா எண்:1024 -ன் திருமதி. ஜமுனாதேவி, க/பெ .தேவராஜ், ஆகியோர் பெயரில் கூட்டுபட்டாவாக கோபாலபுரம் கிராம ஆவணங்களில் பதிவாகியுள்ளது. கூட்டுபட்டாதாரரான திருமதி. ஜமுனாதேவி விண்ணப்பதாரரும் தனது கணவருமான திரு. தேவராஜ் என்பவருக்கு மேற்கண்ட புலங்களில் கற்குவாரி உரிமம் பெற்று பணிகள் செய்ய சம்மதம் தெரிவித்து ஒப்பந்தம் மேற்கொண்டள்ளார். இவ்வாறாக மேற்கண்ட புலங்களுக்கு விண்ணப்பதாரர் முழு உரிமையுடையவராகிறார்.

விண்ணப்பிக்கப்பட்ட புலங்களை சுற்றிலும் 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், பள்ளிகள், கோயில்கள், மசூதிகள், சுடுகாடு ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் தேசிய / மாநில நெடுஞ்சாலைகள், ஆறுகள், கட்டிடங்கள், உயர் அழுத்த மின்கம்பிகள் இல்லை. புல எண்கள் 502/1,2 -ன் வழியே தாழ்வழுத்த மின்கம்பிகள் செல்கிறது. இக்கம்பிகளை புலத்தின் எல்லை வழியே மாற்றி அமைக்க மின் வாரியத்திடம் கடிதம் அளித்துள்ளதையும், பணம் செலுத்தியுள்ளதையும் தெரிவித்துள்ளார். உயர்வகை மரங்கள் ஏதுவும் இல்லை. புலங்களுக்கு சென்று வர பாதை வசதி உள்ளது.

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விண்ணப்பிக்கப்பட்ட புலங்கள் புஞ்சை வகைப்பாடுடைய தரிசு நிலங்களாகும். புலங்களின் மேற்பரப்பு சமதளமாகவும், செம்மண் நிறைந்தும், விவசாய பணிகள் ஏதுமின்றி உள்ளது. புலங்களில் முதல் முறையாக உடைகள், கிராவல் குவாரி உரிமம் வழங்க கேட்டு விண்ணப்பிக்கப்பட்டுள்ளது. (Virgin area). புலங்களில் குழிகள் ஏதும் இல்லை. மேற்பரப்பில் காணப்படும் மண் கனிமத்தை தொடர்ந்து சிதைந்த பாறைகளும் (weathered Rock). சார்னகைட் (Charnockite) எனப்படும். கடின பாறைகளும் (Hard Rock). உள்ளது கடின பாறைகளின் காணப்படும் வேறுபட்ட நிறங்கள் (Different in colours) . இணைப்புகள் (Joints). புளவுகள், கீரல்கள் (Craks) வெடிப்புகள் மற்றும் மாறுபட்ட அளவு கொண்ட கனிமங்கள் , காரணமாக இப்பாறைகளில் மெருகேற்றக் கூடிய வண்ண கற்களை (Polished Granite / Block) உற்பத்தி செய்ய இயலாது.இவ்வகை பாறைகளில் இருந்து கட்டிடப்பணிகள் மற்றும் சாலை /இரயில்வே பணிகளுக்கு தேவைப்படும் கற்கள். ஜல்லிகள் மற்றும் எம்- சாண்ட் ஆகியவற்றை உற்பத்தி செய்ய இயலும்.

இதற்குகிடையில் 04.02.2022 தினத்தில் விண்ணப்பதாரர் அளித்த மனுவில் புல எண் 502/2 (2.18.00) ஹெக்டோ பரப்பளவில் 0.63.50 ஹெக்டோ பரப்பினை நீக்கி எஞ்சியுள்ள 502/2 (1.54.50) பரப்பளவில் குவாரி செய்ய மனு அளித்துள்ளார்.

எனவே விருதுநகர் மவாட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புல எண்கள் 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00) 502/1 (0.50.500) மற்றும் 502/2 (1.54.50) மொத்தப்பரப்பு 4.04.00 ஹெக்டேரில் உடைகல் மற்றும் கிராவல் குவாரி உரிமம் அரசாணை எண் .208, தொழில் (எம்.எம்.சி.1) துறை, நாள்;21.09.2020-ன் படி பத்தாண்டுகளுக்கு (10) தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதிஎண் . 19 மற்றும் 20-ன் படி பின்வரும் நிபந்தனைகளுக்குட்பட்டு வழங்க பரிந்துரை செய்கிறேன்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. வாய்கால், ஓடைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்ய வேண்டும்.
3. பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில்

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வெடித்தல் வேண்டும். குவாரியில் குறைந்த சக்தி கொண்ட வெடி மருந்துகளை பயன்படுத்தல் வேண்டும்

4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.

5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேணப்படவேண்டும்.

6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.

7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.


உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்




 भारत सरकार
 GOVERNMENT OF INDIA

 தேவராஜ்
 Devaraj
 பிறந்த நாள் / DOB : 11/05/1962
 ஆண் / MALE

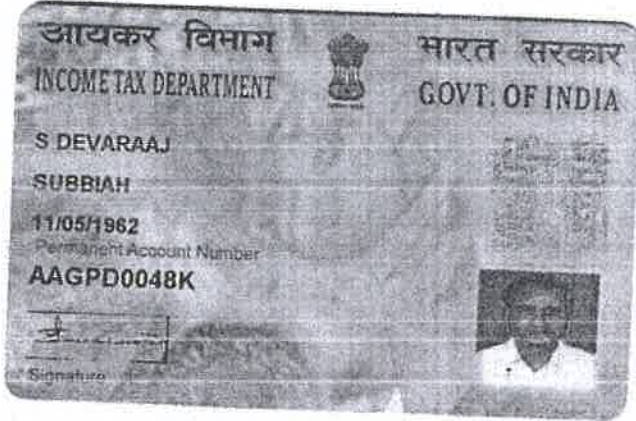
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ஆதார் - சாதாரண மனிதனின் அதிகாரம்


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नवी मुंबई-400 614.

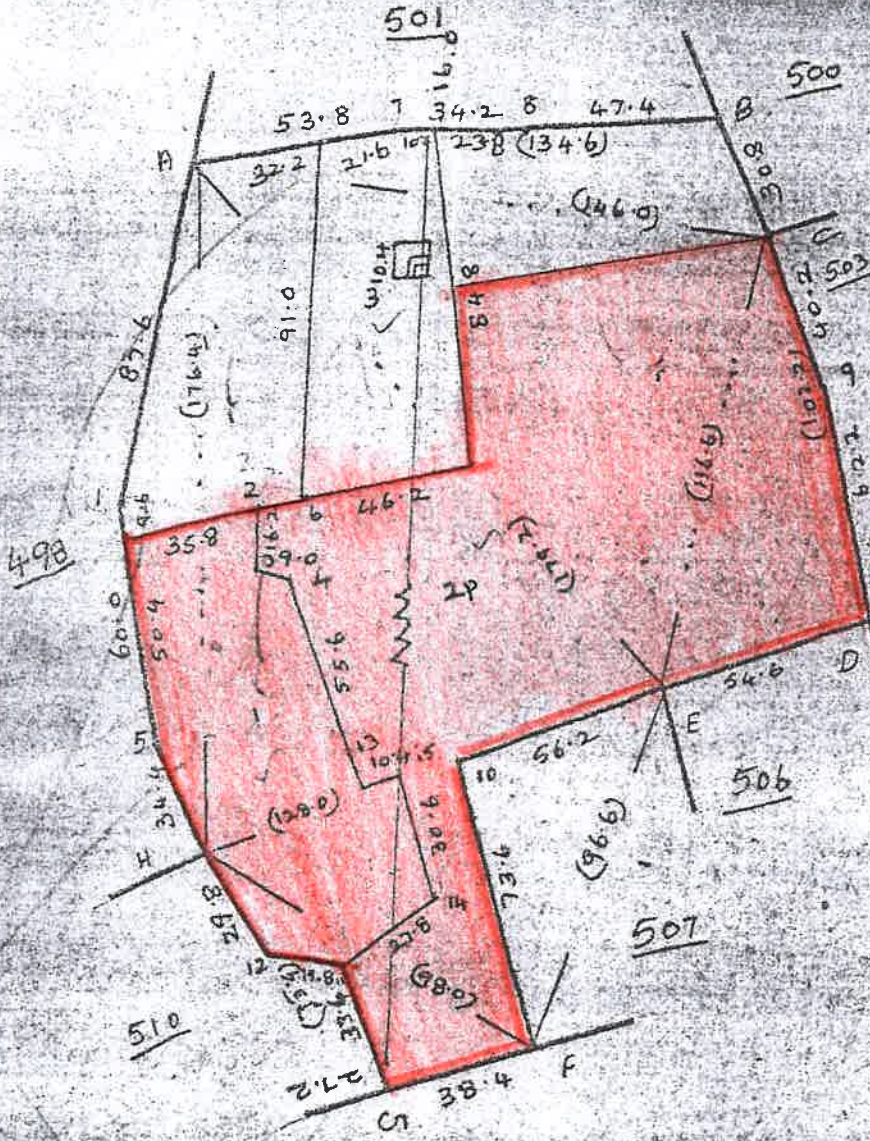
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புல எண். 502

பரப்பு: ஹெக்டேர்



		E
15	2.4	128.0
		53.6
		53.0
13	2.8	43.2
		H
		75.4
12	2.6	45.6
		31.6
		C
		E
10	4.2	96.6
		60.2
		F
		C
		102.2
		62.0
		D
		B
8	1.0	134.6
		87.2
7	5.4	53.4
		A
		H
		176.4
		144.4
5	23.8	106.2
4	15.0	103.4
3	14.8	87.2
		85.4
1	26.2	85.0
		A

LEASE AREA

சென்னை மாநகராட்சி
கிராமிய நலத்துறை அமைச்சர்
கிராமிய நலத்துறை அமைச்சர்
கிராமிய நலத்துறை அமைச்சர்

	C		
	146.0		
	59.4	11.2	H
	53.2	15.4	H
	A		

சென்னை மாநகராட்சி
கிராமிய நலத்துறை அமைச்சர்

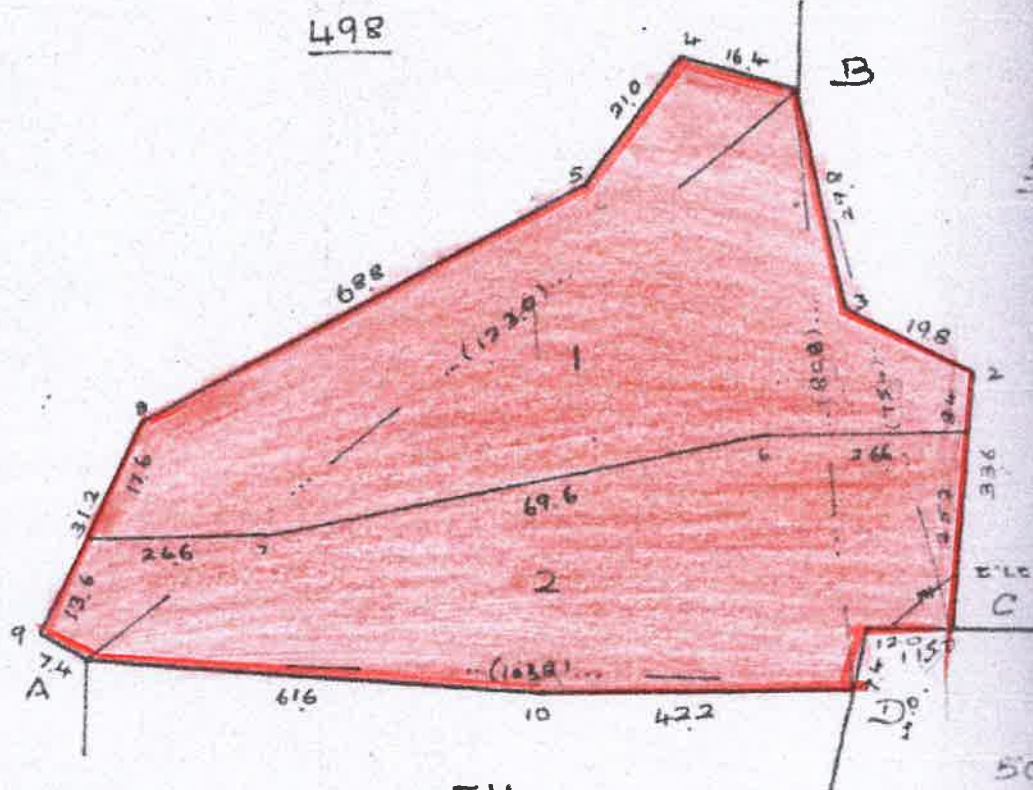
சென்னை மாநகராட்சி
கிராமிய நலத்துறை அமைச்சர்
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வட்டம்

திராமம்

பெயர். சோமசுந்தரம்

பாப்பு: ஹெக்ஸ்



 LEASE AREA

10	2.2	A 103.8 42.2 D	7 6	1.6 34.0	984 94.8 308 326 104 B	20.4 7.6 12.8	8 5 4	B 75.4 456 316 316 316 316 C D 15.0 101 C
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சிவபகவத்யை

அளவு. 1 பரிமீ: 1000 மீ.

A66

121

பொது: திருச்சி

சென்னை 65.5

சா. 65.5

பொது: சென்னை பொது

4000. 511



பொது 4000



LEASE AREA

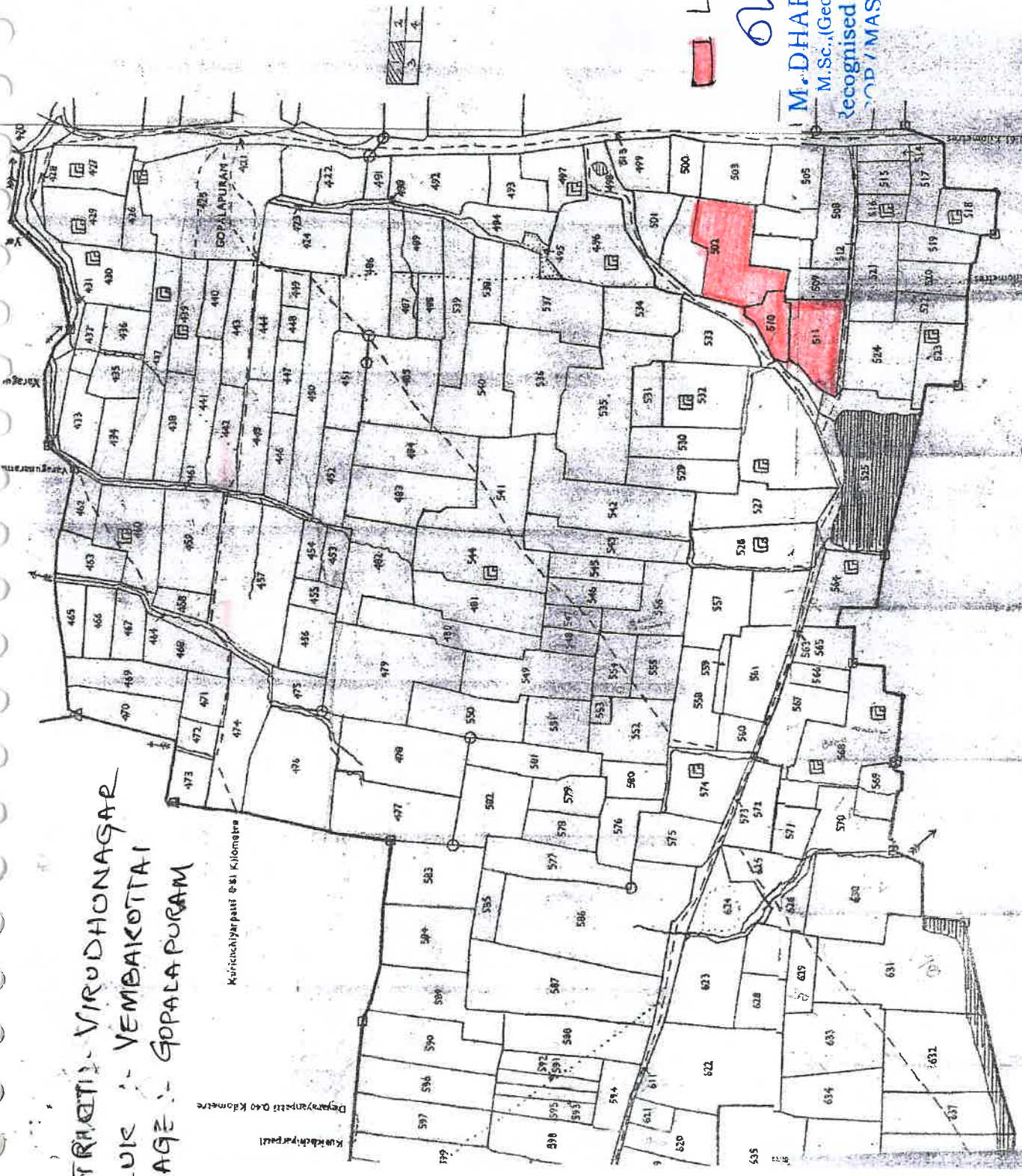
E	182.4
F	120.8
B	94.0
E	72.0
A	15.0
1	103.8
2	42.2
B	

DISTRICT - VIRUDHONAGAR
 TALUK - VEMBAIKOTTAI
 VILLAGE - GOPALAPURAM



LEASE AREA

M. DHARMALINGAM
 M.Sc., (Geol.) FCC., (Mining)
 Recognised Qualified Person
 P.O.P / MAS / 260 / 2014 / A



சென்னை 16161
 11/11/2017

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தமிழ்நாடு அரசு
வருவாய்த் துறை

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

மாவட்டம் : விருதுநகர்

வட்டம் : வெம்பக்கோட்டை

வருவாய் இராமம் : கோபாலபுரம்

பட்டா எண் : 1006

உரிமையாளர்கள் பெயர்

1. சுப்பையா நாயக்கர்

மகன்

தேவராஜ்

2. தேவராஜ்

மனைவி

ஜமுனாதேவி

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	
502	1	0 - 50.50	1.01	--	--	--	--	R10/218 --- ----- 13-08-2001
502	2	2 - 18.00	4.36	--	--	--	--	R10/218 --- ----- 13-08-2001
502	3	0 - 34.00	0.68	--	--	--	--	R10/218 --- சதுரக்கிணறு 25-07-2015
510	2	0 - 30.00	0.60	--	--	--	--	R10/218 --- ----- 13-08-2001
511	1	0 - 66.50	1.33	--	--	--	--	R10/218 --- ----- 13-08-2001
511	2	0 - 67.00	1.34	--	--	--	--	R10/218 --- ----- 08-10-2014
		4 - 66.00	9.32					

குறிப்பு :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 26/09/010/01006/90057 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 20-06-2024 அன்று 05:43:11 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழ்நாடு அரசு
வருவாய்த் துறை



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

மாவட்டம் : விருதுநகர்

வட்டம் : வெம்பக்கோட்டை

வருவாய் இராமம் : கோபாலபுரம்

பட்டா எண் : 1024

உரிமையாளர்கள் பெயர்

1. சுப்பையாநாயக்கர்

மகன்

தேவராஜ்

2. தேவராஜ்

மனைவி

ஜமுனாதேவி

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	
501	-	0 - 77.00	1.54	--	--	--	--	R11/109 --- ----- 13-08-2001
510	1	0 - 35.50	0.71	--	--	--	--	R11/109 --- ----- 13-08-2001
		1 - 12.50	2.25					

குறிப்பு :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 26/09/010/01024/90037 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 20-06-2024 அன்று 05:45:26 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1431

- ஆம் பசலியில்

29/09/2021

மாவட்டம்

02/09/2021



நில வரித் திட்டத்தின்படி
புலன்களின் விபரம்.

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					சாகுபடியாளரின் பெயர்.		புதியல் போகம். கிருஷ்ணம். புதியல் மற்றும் கரங்கத்துறை					
(1) நில அளவை எண்.	(2) உட்பிரிவு எண்.	(3) பரப்பு.	(4) தீர்வை.	(5) ஒரு போகம் அல்லது இரு போகம்.	(6) கைப்பற்று தாரருடைய பெயரும் எண்ணும் அல்லது அனுபோக தாரருடைய பெயர்.	(7) நிலத்தின் எந்த பகுதியாவது சாகுபடியாளரால் பயிரிடப்பட்டுள்ளது.	(8) எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	(9) பயிரின் பெயர்.	(10) பயிரான (அறுவடையான பரப்பு.	(11) உண்மையான பாய்ச்சல் ஆதாரம்.	(12) விளைச்சல் அளவு விழுக்காடு.	
502	1	05051.01	1006	05051.01	05051.01	1006	9/	தர்பா	—			
—	2	21804.36	1006	—do—	—do—	—do—	9/	தர்பா	—			
—	3	03400.68	1006	—do—	—do—	—do—	9/	தர்பா	—			
510	2	03000.60	1006	—do—	—do—	—do—	9/	தர்பா	—			
511	1	06651.33	1006	—do—	—do—	—do—	9/	தர்பா	—			
—	2	06701.34	1006	—do—	—do—	—do—	9/	தர்பா	—			
501	—	07701.54	1024	—do—	—do—	—do—	9/	தர்பா	—			
510	1	03550.71	1034	—do—	—do—	—do—	9/	தர்பா	—			
— 2000												

— 2021/09/2021 —
23/09/2021
திருவள்ளூர் அலுவலர்
கோயம்புரம் திராமம்
மெய்க்கோவை வட்டம்.



3	382-3				4-2	2	4	17	0	28.50	1	18	758-வெங்கிடசாமி நாயக்கர் மற்றும் 1 நபர்(கள்)
TOTAL FOR SURVEY NUMBER- 382									2	41.50	10	06	
1	383-1				4-2	2	4	17	1	0.50	4	19	810-செல்லையாத் தேவர் மற்றும் 3 நபர்(கள்)
2	383-2				4-2	2	4	17	0	24.50	1	01	759-சஞ்சீவி நாயக்கர் மற்றும் 2 நபர்(கள்)
3	383-3				4-2	2	4	17	0	37.00	1	55	1100-ஜமுனாதேவி
4	383-3				4-2	2	4	17	0	31.00	1	30	1100-ஜமுனாதேவி
5	383-3				4-2	2	4	17	0	30.50	1	27	1239-ராணி
TOTAL FOR SURVEY NUMBER- 383									2	23.50	9	32	
1	1				4-2	2	4	17	1	62.00	6	76	999-பாலகிருஷ்ணம்மாள்
2A	2A				4-2	2	4	17	0	85.50	3	57	936-கே. கல்யாணி
2B					4-2	4	4	17	0	45.00	1	80	263-சீனிவாசன் நாயக்கர் மற்றும் 1 நபர்(கள்)
2C	2P				4-2	2	4	17	0	40.50	1	69	466-மாரியப்ப நாயக்கர்
TOTAL FOR SURVEY NUMBER- 384									3	33.00	13	90	
1A	384-1				4-2	2	4	17	0	96.00	4	01	929-கோபாலசாமி நாயக்கர்
1B	384-1B				4-2	2	4	17	0	18.00	0	76	994-கோபாலசாமி
1C	384-1C				4-2	2	4	17	0	4.50	0	19	1021-கோபாலசாமி, நாயக்கர்
1D	385-1PT				4-2	2	4	17	0	9.00	0	38	1021-கோபாலசாமி நாயக்கர்
1E	384-1E				4-2	2	4	17	0	38.00	1	59	994-கோபாலசாமி
1F	384-1F				4-2	2	4	17	0	63.00	2	62	640-குருசாமி மற்றும் 1 நபர்(கள்)
2A	384-2A				4-2	2	4	17	0	28.50	1	20	994-கோபாலசாமி
2B	384-2B				4-2	2	4	17	0	12.00	1	88	1021-கோபாலசாமி நாயக்கர்
2C	384-2C				4-2	2	4	17	0	43.00	1	80	994-கோபாலசாமி
3	384-3				4-2	2	4	17	0	54.00	2	26	641-பெருமாள்சாமி மற்றும் 5 நபர்(கள்)

சென்னை (TIN)
23/9/2022
கிராம தீர்வாக அலுவல கோபாலபுரம் கிராமம் வெம்பக்கோட்டை வட்டம்

DISTRICT - VIRUDHUNAGAR TALUK - VEMBAKKOTTAI VII



497	2	497-2				7-3	4	2	00	0	16.00	0	32	26-அய்யம்மாள்
497	3	497-				7-3	4	2	00	0	9.00	0	18	244-பத்மாவதி
497	4	497-4				7-3	4	2	00	0	8.50	0	17	26-அய்யம்மாள்
497	5	497-5				7-3	4	2	00	0	2.50	0	06	778-கிருஷ்ணசாமி நாயக்கர் மற்றும் 2 நபர்(கள்)
497	6	497-6				7-3	4	2	00	0	47.00	0	94	110-கிருஷ்ணசாமி நாயக்கர்
TOTAL FOR SURVEY NUMBER- 497										0	99.00	1	99	
498		498				0-0	0	0	00	1	81.50	0	00	
498		498				0-0	0	0	00	1	81.50	0	00	
TOTAL FOR SURVEY NUMBER- 498										3	63.00	0	00	
499	1A	499-1				7-3	7	2	00	0	36.50	0	73	726-பழனிச்சாமி
499	1B	499-4B				7-3	7	2	00	0	13.50	0	27	530-இராமானுஜ நாயக்கர்
499	2A	499-5A				7-3	7	2	00	0	15.00	0	30	530-இராமானுஜ நாயக்கர்
499	2B	499-2B				7-3	7	2	00	0	10.00	0	20	887-வேலுச்சாமி
499	3A	499-3PT				7-3	4	2	00	0	18.00	0	36	887-வேலுச்சாமி
499	3B	499-3B				7-3	7	2	00	0	5.50	0	11	887-வேலுச்சாமி
TOTAL FOR SURVEY NUMBER- 499										0	98.50	1	97	
500	1	500-1				7-3	4	2	00	0	30.50	0	61	887-வேலுச்சாமி
500	2	500-2				7-3	4	2	00	0	30.00	0	60	887-வேலுச்சாமி
TOTAL FOR SURVEY NUMBER- 500										0	60.50	1	21	
501		501-				7-3	4	2	00	0	77.00	1	54	1024-தேவராஜ் மற்றும் 1 நபர்(கள்)
502	1	502-1				7-3	4	2	00	0	50.50	1	01	1006-தேவராஜ் மற்றும் 1 நபர்(கள்)
502	2	502-2				7-3	4	2	00	2	18.00	4	36	1006-தேவராஜ் மற்றும் 1 நபர்(கள்)
502	3	522-3				7-3	4	2	00	0	34.00	0	68	1006-தேவராஜ் மற்றும் 1 நபர்(கள்)



TOTAL FOR SURVEY NUMBER- 502										3	2.50	6	05		
503	1	503-1					7-3	4	2	00	0	56.50	1	13	951-ராஜேஸ்வரி
503	2	503-2					7-3	4	2	00	0	68.00	1	36	999-பாலகிருஷ்ணம்மாள்
TOTAL FOR SURVEY NUMBER- 503										1	24.50	2	49		
504		504					7-3	4	2	00	0	58.50	1	17	903-ராமநாதன்
505		505					7-3	4	2	00	0	62.00	1	24	903-ராமநாதன்
506		506					7-3	4	2	00	0	65.00	1	30	903-ராமநாதன்
507		507					7-3	4	2	00	0	68.00	1	36	903-ராமநாதன்
508	1	508-1					7-3	4	2	00	0	51.00	1	03	903-ராமநாதன்
508	2	508-2					7-3	4	2	00	0	49.50	0	90	903-ராமநாதன்
508	3	508-3					7-3	4	2	00	0	43.00	0	86	903-ராமநாதன்
TOTAL FOR SURVEY NUMBER- 508										1	43.50	2	79		
509		509					7-3	4	2	00	0	65.50	1	30	903-ராமநாதன்
510	1	510-1					7-3	4	2	00	0	35.50	0	71	1024-தேவராஜ் மற்றும் 1 நபர்(கள்)
510	2	510-2					7-3	4	2	00	0	30.00	0	60	1006-தேவராஜ் மற்றும் 1 நபர்(கள்)
TOTAL FOR SURVEY NUMBER- 510										0	65.50	1	31		
511	1	511-1					7-3	4	2	00	0	66.50	1	33	1006-தேவராஜ் மற்றும் 1 நபர்(கள்)
511	2	511-2					7-3	4	2	00	0	67.00	1	34	1006-தேவராஜ் மற்றும் 1 நபர்(கள்)
511	3	511-3					0	0-0	0	0	00	0	13.50	0	00
511	3	511-3					0	0-0	0	0	00	0	13.50	0	00
TOTAL FOR SURVEY NUMBER- 511										1	60.50	2	67		
512		512					0	0-0	0	0	00	0	34.50	0	00
512		512					0	0-0	0	0	00	0	34.50	0	00

130

Don't do it

A76

தமிழக அரசு
செய்துள்ள கட்டிடம்
5000Rs
1997



7192

Rs 5000

B. Indumathy

21/1/97

S. சேவராஜ்
திருமலை மாவட்டம்
2

நான் உங்கள் கட்டிடம் கட்டி கொடுத்தேன்
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உங்கள் கட்டிடம் கட்டி கொடுத்தேன்
உங்கள் கட்டிடம் கட்டி கொடுத்தேன்

செய்துள்ள கட்டிடம்

செய்துள்ள கட்டிடம்

[Handwritten signature]



S. தேவராஜ்
திரைப்பட இயக்குநர்

2 மா. சீனிவாசன்

134



506
20.11.91

S. Srinivasan
Director General of
Public Relations

V. Srinivasan
Director General of
Public Relations

சுமரின் கிழக்கில் உள்ளது. அதன் பக்க
வாழ்க்கை கிழக்கில் உள்ளது. அதன் பக்க
கோடலாயுடன் கிழக்கில் 510/1 க்கு
பெற்று 0.35.5 க்கு செலவு 88 ஆகும்
(2) 510/2 க்கு பெற்று 0.30.0 க்கு செலவு
74 ஆகும்
(3) 511/1 க்கு பெற்று 0.66.5 க்கு செலவு
பெற்று 64 ஆகும்
(4) 511/2 க்கு பெற்று 0.67.0 க்கு செலவு
பெற்று 65 ஆகும் - அதன் 5 க்கு செலவு
1 to 4 ஆகும் - அதன் 5 க்கு செலவு
பெற்று 65 ஆகும்

V. Srinivasan

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A80



தமிழ்நாடு வணிக வங்கி
 காலம் 20/11/91
 சி. சுவாமிநாதன்
 கிராமிய நிர்வாகி
 6

Y. சபகாங்கியன்
 ஓய்வூதியாளர் அலுவலகம்
 கிழக்கு கலெக்டரேட்.

- (5) 501 க்கு ரூபாய் 0.77.0 க்கு வசூல்
 ரூபாய் 90 ஆகும்
- (6) 502/1 க்கு ரூபாய் 0.50.5 க்கு வசூல்
 ரூபாய் 25 ஆகும்
- (7) 502/2 க்கு ரூபாய் 2.18.0 க்கு வசூல்
 5 ரூபாய் 39 ஆகும்
- (8) 502/3 க்கு ரூபாய் 0.34.0 க்கு
 ரூபாய் 84 ஆகும் சிவசுந்தரம்
 ரூபாய் 5.78.5 க்கு வசூல் 14 ரூபாய்
 29 ஆகும் 5 To 8 ரூபாய் கிராமிய நிர்வாகி

மா. மகாலட்சுமி

மா. சுவாமிநாதன்

[Handwritten signature]



பி.பொன்னையன்

509
20.11.91

ச. சேனாஜி
தொண்டியன்

முத்திரைகள் அறியவேண்டி
கீழ்க்கண்டவற்றை.

1968ல் உட்கட்டிய செலவுகள் தொகை ரொண்டியத் தொகை
உட்கட்டிய செலவுகள் 3(1) க்கு அங்கீகரிக்கப்பட்டன

வரிசை நாள்	தேதி	தொகை	பொருள்	மொத்தம்
1	510/1/1	0.88	பொதுச் செலவு	ரூ 4664.00
2	510/2/1	0.74	7	ரூ 3922.00
3	511/1/1	1.64	யு	ரூ 8692.00
4	511/2/1	1.65	யு	ரூ 8745.00
5	501/1/1	1.90	பொதுச் செலவு	ரூ 18430.00
6	502/1/1	1.25	யு	ரூ 12125.00
7	502/2/1	5.39	யு	ரூ 52283.00
8	502/3/1	0.84	யு	ரூ 8148.00
9	502/3/2	தொகை	தொகை	ரூ 8001.00
மொத்தம்	மொத்தம்	மொத்தம்	மொத்தம்	ரூ 125010.00

பா. சேனாஜி

பா. சேனாஜி



தமிழ்நாடு தமிலநாடு TAMIL NADU

02/02/2022

D. ஜெனா தேவி

00AC 780195

N. JAMES EBENEZER
STAMP VENDOR
(S.V.L. No: 12144/B1/96)
New No. 3/142, EAST COAST ROAD,
NEELANGARAI, CHENNAI-600 115.
CELL No: 9382222944

சம்பதப்பத்திரம்

நான் விருதுநகர் மாவட்டம், வெம்பக் கோட்டை வட்டம், கோபாலபுரம் கிராமத்தில் உள்ள எனது பெயர் திருமதி. ஜமுனா தேவி (ஆதார் எண். 4520 1465 4110) எனது தகப்பனார் பெயர் திரு. பெருமாள் சாமி மற்றும் கணவர் பெயர் திரு. S. தேவராஜ் (ஆதார் எண். 8736 4850 1412) அவர்களின் தகப்பனார் பெயர் திரு. K.R. சுப்பையா படிபதியப்பட்டுள்ள நிலத்தில் பட்டா எண். 1024, 1006 அதன்படி அதற்குரிய சர்வே எண்கள். 510/1, 510/2, 511/1, 511/2, 502/1, 502/2, 4.67.50. ஹெக்டர் ன் படி உள்ள இடத்தை எனது கணவர் திரு. தேவராஜ் கல்குவாரி நடத்தி மனபூர்வமாக சம்மதித்து 15 வருடங்களுக்கு மேற்கண்ட நிலத்தை பயன்படுத்தி உரிமை வழங்குகின்றேன்.

சாட்சிகள்

1.

(P. V. M. D. KUMAR)

2. minijayelani

145/kettapa

SATTUR
226203



இப்படிக்கு

உண்மையுள்ள

திருமதி. ஜமுனா தேவி

S. HAROON-EL-RASHEED, B.A., B.L.
ADVOCATE & NOTARY PUBLIC
Reg. No. 5928 / 2008 Govt. of India
Old No. 83, New No. 34, 1 Floor,
MANDAVELI STREET, MANDAVELI,
CHENNAI - 600 028. CELL: 94441 40293
8 FEB 2022



MINES LAND PHOTO



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புலன்கள். 502/1,2p, 510/1,2 & 511/1,2 ஆக மொத்தம் 4-04.00 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/848/2021-கனிமம் நாள் 28.02.2022ன் படி திரு. சு. தேவராஜ், த/பெ. கே.ஆர். சுப்பையா அவர்கள் மனு செய்துள்ளார். மேற்படி இடம் உடைகல், ஜல்லி மற்றும் கிராவல் வெட்டி எடுப்பதற்கு அங்கீகரிக்கப்பட்ட இடம் என்பதை இதன் மூலம் சான்றளிக்கிறேன்.

மேற்படி இடத்திற்கு செல்வதற்கு அணுகுபாதை வசதி உள்ளது என்றும் சான்றளிக்கிறேன்.

இடம்: கோபாலபுரம்

நாள்: 24-03-2022

(Signature) 24/03/2022
கிராம நிர்வாக அலுவலர்
கோபாலபுரம் கிராம
வெம்பக்கோட்டை வட்டம்.

(Signature)
A85



கிராம நிர்வாக அலுவலரின் சான்று

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், பட்டா புலஎண்கள். 502/1,2p, 510/1,2 & 511/1,2 ஆக மொத்தம் 4-04.00 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/848/2021-கனிமம் நாள் 28.02.2022ன் படி திரு. சு. தேவராஜ், த/பெ. கே.ஆர். சுப்பையா அவர்கள் மனு செய்துள்ளார். இவர் ஆரம்பிக்க உள்ள உடைகல், ஜல்லி மற்றும் கிராவல் குவாரி இடத்திற்கு செல்ல போதிய அணுகுபாதை வசதி உள்ளது மேலும் நிலத்தை சுற்றி 300மீட்டர் சுற்றளவில் குடியிருப்புகள், கோயில்கள், பள்ளிக்கூடம் ஏதும் இல்லை.

மேற்படி புல எண்கள். மேற்படி கிராம கணக்கு தடை ஆணை புத்தகத்தில் இடம் பெறவில்லை. மேலும் 10கி.மீ. சுற்றளவில் பிற மாவட்ட எல்லையோ, மாநில எல்லையோ இடம்பெறவில்லை. மேற்படி சான்று கனிமவளத்துறைக்கு அளிக்கும் வகைக்காக வழங்கப்படுகிறது.


24/03/2022
கிராம நிர்வாக அலுவலர்
கிராம நிர்வாக அலுவலர்.
வெம்பக்கோட்டை வட்டம்.



A86

141

22/1849 2021



அனுப்பினர்:

திருமதி. ரா.புஷ்பா, பி.எஸ்.சி.,
வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

பெறுநர்:

மாவட்ட ஆட்சியர்,
விருதுநகர்.

மு.அ.அ2/5558/2021, நாள்: 19.01.2022.

ஐயா,

வொருள் :

கணிமங்கனும் குவாரிகளும் - விருதுநகர் மாவட்டம் - சாத்தூர் கோட்டம் - வெம்பக்கோட்டை வட்டம் - கோபாலபுரம் கிராமம் - புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டேர் பரப்பு நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக்கோரியது- கருத்துரு அனுப்பதல் - தொடர்பாக.

பார்வை:

1. விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் கடிதம் எண். ந.க.கேவி1/848/2021, நாள்: 08.10.2021.

2. வெம்பக்கோட்டை வருவாய் வட்டாட்சியர் கடிதம் எண். ந.க. அ6/2322/2021, நாள்: 20.12.2021

சென்னை, வடபழனி, க.எண். 19/29, ஜி-2 கிருஷ்ணன் காலனி, நெற்குன்றம் பாதை என்ற முகவரிமையச் சேர்ந்த திரு.தேவராஜ், த/பெ. கே.ஆர்.சுப்பையா என்பவர் வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டேர் பரப்பு நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரியது தொடர்பாக, எனதுநிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

நில உரிமை:-

மனுதாரர் குவாரி செய்ய உரிமம் வழங்கக் கோரும் இடம் வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) ஆகியவை பட்டா எண். 1005-லும், புல எண். 510/1 (0.35.50) பட்டா எண். 1024-லும் சுப்பையா மகன் தேவராஜ்-1, தேவராஜ் மனைவி ஜமுனாதேவி-2 என்ற பெயரில் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.

நில அமைப்பு:-

மனுதாரர் குவாரி உரிமம் வழங்கக் கோரும் புலத்திற்கு 300 மீ சுற்றளவிற்குள் குடியிருப்பு பகுதிகளோ, பள்ளி மற்றும் கல்லூரிகளோ எதுமில்லை. மேற்படி புலத்திற்கு தென்கிழக்கு பகுதியில் புல எண்.513 இல் கோபாலபுரம் - வடகரை செல்லும் சாலை உள்ளது. இந்த சாலைக்கு கீழ்ப்புறம் புல எண். 279/1இ இல் திரு.தெய்வசிகாமணி, த/பெ. பாலகிருஷ்ணன் என்பவருக்கு சொந்தமான காரை வீடு உள்ளது. குவாரி உரிமம் கோரும் புலத்திற்கு தெற்குபக்கம் புல எண். 512 இல் கிழமேல் சாலையும், வடக்கு பக்கம் புல எண். 498 இல் 1.81.5 ஹெக்டர் பரப்பளவில் வண்டிப்பாதையும், ஓடையும் உள்ளது.

குவாரி அமைவதால் மேற்படி வண்டிப்பாதை ஒட்டியுள்ள ஒடைக்கு ஏதும் பாதிப்பு இல்லை. மேற்படி குவாரி அமையவுள்ள புல எண். 502/3, பரப்பு 0.34.0 ஹெக்ட. நிலத்தில் ஒரு தூர்ந்த கிணறு ஒன்று உள்ளது. அதேபோல் அருகிலுள்ள புல எண். 503/2 இல் வாஞ்சிநாதன் என்பவரது பெயரில் உள்ள மட்டா நிலத்தில் ஒரு சிறிய தூர்ந்த ஊரணி ஒன்று உள்ளது. மேற்படி குவாரி அமைவதால் தூர்ந்த கிணற்றுக்கும், தூர்ந்த ஊரணிக்கும் பாதிப்பு ஏதுமில்லை.

மேற்படி அருகிலுள்ள விவசாய நிலங்களுக்கோ, இதர வகை நிலங்களுக்கோ பாதிப்பு ஏதுமில்லை. குவாரி அமையவுள்ள புலத்திற்கு தென்மேற்கு மூலையில் புல எண். 525 இல் நீர்ப்பிடி என்ற வகைப்பாடுடைய புலம் ஒன்று உள்ளது. வடகரை கண்மாயில் நீட்சியாக அமைந்துள்ள இந்நீர்ப்பிடி புல எண். 498 இல் உள்ள வண்டிப்பாதையை ஒட்டியுள்ள ஒடையிலிருந்து வரும் நீர் சேருமிடமாகும். ஆனால் மேற்படி ஒடை தூர்ந்த நிலையில் உள்ளதால் இந்நீர்ப்பிடிப்பானது அதிகளவு நீர் தேங்காத இடமாகவே உள்ளது. மேலும் குவாரி அமைவதால் இந்நீர்ப்பிடிப்பு பகுதிக்கு பாதிப்பு இல்லை.

மேற்படி குவாரி அமையவுள்ள இடத்திற்கு மேற்கே சுமார் 370 மீ தூரத்தில் புல எண். 566/2 இல் ராஜ்மோகன், த/பெ. வேங்கிடபதி என்பவருக்கு சொந்தமான செயல்படாத குவாரி ஒன்றும் உள்ளது. சுமார் 450 மீ தூரத்தில் திரு.ஆறுமுகம், த/பெ. பரமகுரு என்பவருக்கு சொந்தமான குவாரி ஒன்று உள்ளது. மேற்படி புலத்திற்கு 50 மீட்டருக்குள் தெற்குபக்கம், வடக்கு பக்கம் சாலை மட்டும் உள்ளது. வேறு ரயில் பாதைகளோ, கோவில்களோ, புராதானச் சின்னங்களோ, நிர்நிலைகளோ மற்றும் வேறு நிரந்தரமான அமைப்புகளோ இல்லை.

குவாரி அமையவுள்ள புலங்களில், புல எண். 502/1, 2 ஆகிய புலங்களுக்கு ஊடாகவும், புல எண். 511/1, 2 இன் வழியாகவும் மின் கம்பிகள் செல்கிறது. இம்மின்கம்பிகளை அகற்றுவதற்கு மனுதாரர் தேவராஜ் என்பவர் கீழராஜகுலராமன் மின்சார வாரிய உதவி செயற்பொறியாளருக்கு விண்ணப்பம் செய்துள்ளதாகவும், அதற்காக ரூ.1180/- செலுத்தி ரசீதும் பெற்றுள்ளார். மேற்படி குவாரி அமையவுள்ள இடம் இராஜபாளையம் ஊராட்சி ஒன்றியம், கோபாலபுரம் பஞ்சாயத்திற்கும் உட்பட்டதாகும்.

ஆட்சேபணை:-

மேற்படி குவாரி அமைவது குறித்து கோபாலபுரம் கிராமப் பொதுமக்களிடம் "அ1" நோட்டீஸ் 22.10.2021 அன்று பிரசுரம் செய்யப்பட்டதில் ஆட்சேபணை ஏதும் வரப்பெறவில்லை.

நான்குமால்:-

புல எண். 510/1 (0.35.5):-

வடக்கு - புல எண். 498 - சாலை,

தெற்கு - புல எண். 510/2 - மனுதாரர் நிலம்,

கிழக்கு - புல எண். 502/1, 2 - மனுதாரர் நிலம்,

மேற்கு - புல எண். 498 - சாலை,



புல எண். 510/2 (0.30.0):-

வடக்கு - புல எண். 510/1 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 511/1 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 502/1, 2 - மனுதாரர் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 511/1 (0.66.5):-

வடக்கு - புல எண். 510/2 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 511/2 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 509 - ராமநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 511/2 (0.67.0):-

வடக்கு - புல எண். 511/1 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 511/3 - சாலை,
கிழக்கு - புல எண். 509 - ராமநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 502/1 (0.50.5):-

வடக்கு - புல எண். 502/2 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 502/2 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 509 - ராமநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 502/2 (2.18.0):-

வடக்கு - புல எண். 501, 502/3 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 506, 507, 509 - ராமநாதன் நிலம்,
கிழக்கு - புல எண். 500/2ஏ1 - ராஜேஸ்வரி நிலம்,
புல எண். 503/1ஏ1 - அய்யாச்சாமி நிலம்,
புல எண். 503/2 - வாஞ்சிநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

பரிந்துரை:-

வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டேர் பரப்பு நிலங்களில் அருகில் உள்ள பட்டா நிலங்களுக்கு போதிய பாதுகாப்பு தரவும் விடுத்து 1959-ம் வருடத்திய தமிழ்நாடு சிறுகுளிம் விதிகளின்படி திரு.தேவராஜ், த/பெ. கே.ஆர்.சுப்பையா



என்பவருக்கு 10 வருடங்களுக்கு உடைகல், கிராவல் குவாரி உரிமம் வழங்க பரிந்துரை செய்கிறேன் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன். இத்துடன் 10(1) , புலப்படச்சுவடி நகல், கிராம வரைபடம், "அ1" நோட்டீஸ் ஆகியனவகளை இணைத்து அனுப்பியுள்ளேன் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு:

வருவாய் வட்டாட்சியர் அறிக்கை (ம) அதனுடன் வரப்பெற்ற இணைப்புகள்.

/உத்தரவுப்படி/

ஒய்/ரா.புஷ்பா,
வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

நேர்முக உதவியாளர்

19/11/22



புலத்தணிக்கைக்குறிப்பு

புலத்தணிக்கை அலுவலர் பெயர் மற்றும் பதவி	திருமதி.ரா.புஷ்பா, வருவாய் கோட்டாட்சியர், சாத்தூர்.
தணிக்கை செய்த இடம்	வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம்
புல எண்கள்	புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டேர்
தணிக்கை நாள்	17.01.2022
புலத்தணிக்கையின் நோக்கம்	10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரியது - தொடர்பாக.

சென்னை, வடபழனி, க.எண். 19/29, ஜி-2 கிருஷ்ணன் காலனி, நெற்குன்றம் பாதை என்ற முகவரியைச் சேர்ந்த திரு.தேவராஜ், த/பெ. கே.ஆர்.கப்பையா என்பவர் வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டேர் பரப்பு நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரியது தொடர்பாக, இன்று (17.01.2022) புலத்தணிக்கை செய்யப்பட்டது. புலத்தணிக்கையின்போது வருவாய் வட்டாட்சியர், மண்டல துணை வட்டாட்சியர், குறுவட்ட ஆய்வாளர், குறுவட்ட அளவர் மற்றும் கிராம நிர்வாக அலுவலர் ஆகியோர் உடனிருந்தனர்.

நில உரிமை:-

மனுதாரர் குவாரி செய்ய உரிமம் வழங்கக் கோரும் இடம் வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) ஆகியவை பட்டா எண். 1006-லும், புல எண். 510/1 (0.35.50) பட்டா எண். 1024-லும் சுப்பையா மகன் தேவராஜ்-1, தேவராஜ் மனைவி ஐமுனாதேவி-2 என்ற பெயரில் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.

நில அமைப்பு:-

மனுதாரர் குவாரி உரிமம் வழங்கக் கோரும் புலத்திற்கு 300 மீ சுற்றளவிற்குள் குடியிருப்பு பகுதிகளோ, பள்ளி மற்றும் கல்லூரிகளோ ஏதுமில்லை. மேற்படி புலத்திற்கு தென்கிழக்கு பகுதியில் புல எண்.513 இல் கோபாலபுரம் - வடகரை செல்லும் சாலை உள்ளது. இந்த சாலைக்கு கீழ்ப்புறம் புல எண். 279/1இ இல் திரு.தெய்வசிகாமணி, த/பெ. பாலகிருஷ்ணன் என்பவருக்கு சொந்தமான காரை விடு உள்ளது. குவாரி உரிமம் கோரும் புலத்திற்கு தெற்குபக்கம் புல எண். 512 இல் கிழமேல் சாலையும், வடக்கு பக்கம் புல எண். 498 இல் 1.81.5 ஹெக்டர் பரப்பளவில் வண்டிப்பாதையும், ஓடையும் உள்ளது.

குவாரி அமைவதால் மேற்படி வண்டிப்பாதை ஒட்டியுள்ள ஓடைக்கு ஏதும் பாதிப்பு இல்லை. மேற்படி குவாரி அமையவுள்ள புல எண். 502/3, பரப்பு 0.34.0 ஹெக்ட. நிலத்தில் ஒரு தூர்ந்த கிணறு ஒன்று உள்ளது. அதேபோல் அருகிலுள்ள புல எண். 503/2 இல் வாஞ்சிநாதன் என்பவரது பெயரில் உள்ள மட்டா நிலத்தில் ஒரு சிறிய தூர்ந்த ஊரணி ஒன்று உள்ளது. மேற்படி குவாரி அமைவதால் தூர்ந்த கிணற்றுக்கும், தூர்ந்த ஊரணிக்கும் பாதிப்பு ஏதும் இல்லை.

மேற்படி அருகிலுள்ள விவசாய நிலங்களுக்கோ, இதர வகை நிலங்களுக்கோ பாதிப்பு ஏதும் இல்லை. குவாரி அமையவுள்ள புலத்திற்கு தென்மேற்கு மூலையில் புல எண். 525 இல் நீர்ப்பிடி என்ற வகைப்பாட்டைய புலம் ஒன்று உள்ளது. வடகரை கண்மையில் நீட்சிவாக அமைந்துள்ள இந்நீர்ப்பிடி புல எண். 498 இல் உள்ள வண்டிப்பாதையை ஒட்டியுள்ள ஓடையிலிருந்து வரும் நீர் சேருமிடமாகும். ஆனால் மேற்படி ஓடை தூர்ந்த நிலையில் உள்ளதால் இந்நீர்ப்பிடிப்பானது அதிகளவு நீர் தேங்காத இடமாகவே உள்ளது. மேலும் குவாரி அமைவதால் இந்நீர்ப்பிடிப்பு பகுதிக்கு பாதிப்பு இல்லை.

மேற்படி குவாரி அமையவுள்ள இடத்திற்கு மேற்கே சுமார் 370 மீ தூரத்தில் புல எண். 566/2 இல் ராஜ்மோகன், த/பெ. வேங்கிடபதி என்பவருக்கு சொந்தமான செயல்படாத குவாரி ஒன்றும் உள்ளது. சுமார் 450 மீ தூரத்தில் திரு. ஆறுமுகம், த/பெ. பரமகுரு என்பவருக்கு சொந்தமான குவாரி ஒன்று உள்ளது. மேற்படி புலத்திற்கு 50 மீட்டருக்குள் தெற்குபக்கம், வடக்கு பக்கம் சாலை மட்டும் உள்ளது. வேறு எயில் பாதைகளோ, கோவில்களோ, புராதானச் சின்னங்களோ, நிர்நிலைகளோ மற்றும் வேறு நிரந்தரமான அமைப்புகளோ இல்லை.

குவாரி அமையவுள்ள புலங்களில், புல எண். 502/1, 2 ஆகிய புலங்களுக்கு ஊடாகவும், புல எண். 511/1, 2 இன் வழியாகவும் மின் கம்பிகள் செல்கிறது. இம்மின்கம்பிகளை அகற்றுவதற்கு மனுதாரர் தேவராஜ் என்பவர் கீழராஜகுலராமன் மின்சார வாரிய உதவி செயற்பொறியாளருக்கு விண்ணப்பம் செய்துள்ளதாகவும், அதற்காக ரூ.1180/- செலுத்தி ரசீதும் பெற்றுள்ளார். மேற்படி குவாரி அமையவுள்ள இடம் இராஜபாளையம் ஊராட்சி ஒன்றியம், கோபாலபுரம் பஞ்சாயத்திற்கும் உட்பட்டதாகும்.

ஆட்சேபணை:-

மேற்படி குவாரி அமைவது குறித்து கோபாலபுரம் கிராமப் பொதுமக்களிடம் "அ1" நோட்டீஸ் 22.10.2021 அன்று பிரகடனம் செய்யப்பட்டதில் ஆட்சேபணை ஏதும் வரப்பெறவில்லை.

நான்குமூல:-

புல எண். 510/1 (0.35.5):-

வடக்கு - புல எண். 498 - சாலை,
தெற்கு - புல எண். 510/2 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 502/1, 2 - மனுதாரர் நிலம்,
மேற்கு - புல எண். 498 - சாலை,



புல எண். 510/2 (0.30.0):-

வடக்கு - புல எண். 510/1 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 511/1 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 502/1, 2 - மனுதாரர் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 511/1 (0.66.5):-

வடக்கு - புல எண். 510/2 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 511/2 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 509 - ராமநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 511/2 (0.67.0):-

வடக்கு - புல எண். 511/1 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 511/3 - சாலை,
கிழக்கு - புல எண். 509 - ராமநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 502/1 (0.50.5):-

வடக்கு - புல எண். 502/2 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 502/2 - மனுதாரர் நிலம்,
கிழக்கு - புல எண். 509 - ராமநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

புல எண். 502/2 (2.18.0):-

வடக்கு - புல எண். 501, 502/3 - மனுதாரர் நிலம்,
தெற்கு - புல எண். 506, 507, 509 - ராமநாதன் நிலம்,
கிழக்கு - புல எண். 500/2ஏ1 - ராஜேஸ்வரி நிலம்,
புல எண். 503/1ஏ1 - அய்யாச்சாமி நிலம்,
புல எண். 503/2 - வாஞ்சிநாதன் நிலம்,
மேற்கு - புல எண். 498 - சாலை,

பரிந்துரை:-

வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டேர் பரப்பு நிலங்களில் அருகில் உள்ள மட்டா நிலங்களுக்கு போதிய பாதுகாப்பு தராமல் விடுத்து 1959-ம் வருடத்திய தமிழ்நாடு சிறுகணிம விதிகளின்படி திரு.தேவராஜ், த/பெ. கே.ஆர்.சுப்பையா என்பவருக்கு 10 வருடங்களுக்கு உடைகல், கிராவல் குவாரி உரிமம் வழங்க மாவட்ட ஆட்சியர் அவர்களுக்கு கடித வரைவு அனுப்பலாம்.

வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

அனுப்பநர்

திரு.சு.தனராஜ்,
வருவாய் வட்டாட்சியர்,
வெம்பக்கோட்டை.

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22/12/2021

பெறுநர்

மாவட்ட ஆட்சியர் அலுவலகம்
விருதுநகர் மாவட்டம்
விருதுநகர்.



உரிய வழிமுறையாக
வருவாய் கோட்டாட்சியர்,
சாத்தூர்.



ந.க.அ6/2322/2021, நாள்:20.12.2021

பொருள்-

கனிமம் மற்றும் சுரங்கம் - விருதுநகர் மாவட்டம் - வெம்பக்கோட்டை வட்டம் - கோபாலபுரம் கிராமம் - புல எண்கள்.510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டர் பரப்பு நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரியுள்ளது - கருத்துரு அனுப்புதல் - தொடர்பாக.

பார்வை-

1. விருதுநகர் மாவட்ட ஆட்சியர் அலுவலக கடிதம் எண் ந.க.கே.வி1/848/2021 நாள்:08.10.2021.
2. சாத்தூர் வருவாய் கோட்டாட்சியர் அவர்களின் கடிதம் எண்.ந.க.அ2/5558/2021.நாள்:18.10.2021.
3. கோபாலபுரம் கிராம நிர்வாக அலுவலர் அறிக்கை நாள்:11.11.2021.
4. கீழராஜகுலராமன் வருவாய் ஆய்வாளர் அறிக்கை. நாள்:12.11.2021.
5. கீழராஜகுலராமன் குறுவட்ட அளவர் அறிக்கை நாள்:17.11.2021.
6. மண்டல துணை வட்டாட்சியர் அறிக்கை. நாள்:11.11.2021.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டர் பரப்பு நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரி சென்னை, வடபழனி என்ற முகவரியைச் சேர்ந்த திரு.சு.தேவராஜ் த/பெ.கே.ஆர்.சுப்பையா என்பவர் மாவட்ட ஆட்சித் தலைவர் அவர்களிடம் விண்ணப்பம் செய்துள்ளார். மனுதாரர் கோரிக்கை தொடர்பாக, 15.12.2021 அன்று புலத்தணிக்கை செய்து எனதுறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

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1.நில உரிமை:

மனுதாரர் குவாரி செய்ய உரிமம் வழங்கக் கோரும் இடம் வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமம், புல எண்கள். 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) ஆகியவை பட்டா எண்.1006-லும், புல எண்.510/1 (0.35.50) பட்டா எண்.1024-லும் சுப்பையா நாயக்கர் மகன் தேவராஜ்-(1), தேவராஜ் மனைவி ஜமுனாதேவி-(2) என்ற பெயரில் கிராமக் கணக்கில் கூட்டாக தாக்கலாகியுள்ளது.

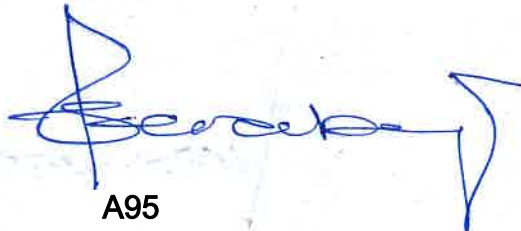
2. நில அமைப்பு:

மனுதாரர் குவாரி உரிமம் புலத்திற்கு 300மீ சுற்றளவிற்கு குடியிருப்பு பகுதிகளோ, பள்ளி மற்றும் கல்லூரிகளோ ஏதுமில்லை. மேற்படி புலத்திற்கு தென்கிழக்கு பகுதியில் புல எண்.513-ல் கோபாலபுரம் - வடகரை செல்லும் சாலை உள்ளது. இந்த சாலைக்கு கீழ்ப்புறம் புல எண்.279/1பி-ல் திரு.தெய்வசிகாமணி த/பெ.பாலகிருஷ்ணன் என்பவருக்கு சொந்தமான காரை வீடு உள்ளது. குவாரி உரிமம் கோரும் புலத்திற்கு தெற்குப்பக்கம் புல எண்.512-ல் கிழமேல் சாலையும், வடக்கு பக்கம் புல எண்.498-ல் 1.81.5 ஹெக்டார்களில் வண்டிப்பாதையும் ஒட்டையும் என உள்ளது. குவாரி அமைவதால் மேற்படி வண்டிப்பாதை ஒட்டியுள்ள ஒட்டைக்கு ஏதும் பாதிப்பு இல்லை. மேற்படி குவாரி அமையவுள்ள புல எண்.502/3-ல் பரப்பு 0.34.0 ஹெக்டார்களில் ஒரு தூர்ந்த கிணறு ஒன்று உள்ளது. அதே போல் அருகிலுள்ள புல எண்.503/2-ல் வாஞ்சிநாதன் என்பவரது பெயரில் உள்ள பட்டா நிலத்தில் ஒரு சிறிய தூர்ந்த ஊரணி ஒன்றுள்ளது. மேற்படி குவாரி அமைவதால் தூர்ந்த கிணற்றுக்கும், தூர்ந்த ஊரணிக்கும் பாதிப்பு ஏதுமில்லை.

மேற்படி அருகிலுள்ள விவசாய நிலங்களுக்கோ, இதர வகை நிலங்களுக்கோ பாதிப்பு ஏதுமில்லை. குவாரி அமையவுள்ள புலத்திற்கு தென்மேற்கு மூலையில் புல எண்.525-ல் நீர்ப்பிடி என்ற வகைப்பாடுடைய புலம் ஒன்றுள்ளது. வடகரை கண்மாயின் நீட்சியாக அமைந்துள்ள இந்நீர்ப்பிடி புல எண்.498-ல் உள்ள வண்டிப்பாதையை ஒட்டியுள்ள ஒட்டையிலிருந்து வரும் நீர் சேருமிடமாகும். ஆனால் மேற்படி ஒட்டை தூர்ந்த நிலையில் உள்ளதால் இந்நீர்ப்பிடியானது அதிகளவு நீர் தேங்காத இடமாகவே உள்ளது. மேலும் குவாரி அமைவதால் இந்நீர்ப்பிடிப்பு பகுதிக்கு பாதிப்பு இல்லை.

மேற்படி குவாரி அமையவுள்ள இடத்திற்கு மேற்கே சுமார் 370 மீ தூரத்தில் புல எண்.566/2-ல் ராஜ்மோகன் த/பெ.வேங்கிடபதி என்பவருக்கு சொந்தமான செயல்படாத குவாரி ஒன்றும் உள்ளது. சுமார் 450 மீ தூரத்தில் திரு.ஆறுமுகம் த/பெ.அரமகுரு என்பவருக்கு சொந்தமான குவாரி ஒன்று உள்ளது.

மேற்படி புலத்திற்கு 50 மீட்டருக்குள் தெற்குப்பக்கம், வடக்குப்பக்கம் சாலை மட்டும் உள்ளது. வேறு ரயில் பாதைகளோ, கோவில்களோ, புராதனச்சின்னங்களோ நீர் நிலைகளோ மற்றும் வேறு நிரந்தரமான அமைப்புகளோ இல்லை.





குவாரி அமையவுள்ள புலங்களில், புல எண்.502/1,2 ஆகிய புலங்களுக்கு உட்காகவும், புல எண்.511/1, 2ன் வழியாகவும் மின் கம்பிகள் செல்கிறது. இம்மின்கம்பிகளை அகற்றுவதற்கு மனுதாரர் தேவராஜ் என்பவர் கீழாஜகுலராமன் மின்சார வாரிய உதவி செயற்படுத்தியதற்கு விண்ணப்பம் செய்துள்ளதாகவும், அதற்காக ரூ.1180/- செலுத்தி ரசீதும் பெற்றுள்ளார். மேற்படி குவாரி அமையவுள்ள இடம் இராஜபாளையம் ஊராட்சி ஒன்றியம், கோபாலபுரம் பஞ்சாயத்திற்கும் உட்பட்டதாகும்.

4. ஆட்சேபனை:

மேற்படி குவாரி அமைவது குறித்து கோபாலபுரம் கிராமப் பொது மக்களிடம் "A1" நோட்டீஸ் 22.10.2021 அன்று பிரசுரம் செய்யப்பட்டதில் ஆட்சேபனை ஏதும் வரப்பெறவில்லை.

5. நான்குமால் விபரம்:

புல எண்:510/1(0.35.5):

வடக்கு - புல எண்.498 சாலை.

தெற்கு - புல எண்.510/2 மனுதாரர் நிலம்

கிழக்கு - புல எண்.502/1, 2 மனுதாரர் நிலம்

மேற்கு - புல எண்.498 சாலை

புல எண்:510/2(0.30.0) :

வடக்கு - புல எண்.510/1 மனுதாரர் நிலம்

தெற்கு - புல எண்.511/1 மனுதாரர் நிலம்

கிழக்கு - புல எண்.502/1, 2 மனுதாரர் நிலம்

மேற்கு - புல எண்.498 சாலை

புல எண்:511/1(0.66.5):

வடக்கு - புல எண்.510/2 மனுதாரர் நிலம்

தெற்கு - புல எண்.511/2 மனுதாரர் நிலம்

கிழக்கு - புல எண்.509 ராமநாதன்

மேற்கு - புல எண்.498 சாலை

புல எண்:511/2(0.67.0):

வடக்கு - புல எண்.511/1 மனுதாரர் நிலம்

தெற்கு - புல எண்.511/3 சாலை

கிழக்கு - புல எண்.509 ராமநாதன்

மேற்கு - புல எண்.498 சாலை

புல எண்:502/1(0.50.5):

வடக்கு - புல எண்.502/2 மனுதாரர் நிலம்

தெற்கு - புல எண். 502/2 மனுதாரர் நிலம்

கிழக்கு - புல எண்.509 ராமநாதன்

மேற்கு - புல எண்.498 சாலை

புல எண்:502/2(2.18.0):

வடக்கு - புல எண்.501, 502/3 மனுதாரர் நிலம்

தெற்கு - புல எண்.506, 507, 509 ராமநாதன் நிலம்

கிழக்கு - புல எண்.500/2A1 ராஜேஸ்வரி

புல எண்.503/1A1 அய்யச்சாமி

புல எண்.503/2 வாஞ்சிநாதன்

மேற்கு - புல எண்.498 சாலை.

பிரிந்துரை:

மனுதாரர் சமர்ப்பித்துள்ள ஆவணங்களின்படியும், சம்பந்தப்பட்ட கிராம நிர்வாக அலுவலர், வருவாய் ஆய்வாளர், சார் ஆய்வாளர் மற்றும் வெம்பக்கோட்டை மண்டல துணை வட்டாட்சியரின் பிரிந்துரையின்பேரிலும், புலத்தனிக்கையின் அடிப்படையிலும், திரு.தேவராஜ் த/பெ.கே.ஆர்.சுப்பையா என்பவருக்கு புல எண்கள். 510/1 (0.35.50), 510/2 (0.30.00), 511/1 (0.66.50), 511/2 (0.67.00), 502/1 (0.50.50) மற்றும் 502/2 (2.18.00) மொத்தம் 4.67.50 ஹெக்டர் பரப்பு நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க பிரிந்துரை செய்கிறேன் என்பதை பணிபுரன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு : தொடர்புடைய ஆவணங்கள்.

-/உத்தரவுப்படி/-

ஒம்/-க.தனராஜ்,
வட்டாட்சியர்,
வெம்பக்கோட்டை.

20/12/21
வட்டாட்சியருக்காக.

சி.சி.
20/12/21

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விருதுநகர் மாவட்டம் வெம்பக்கோட்டை வருவாய் வட்டம்
புலத்தணிக்கை அறிக்கை



1.	குத்தகை உரிமம் கோரிய விண்ணப்பம் பெறப்பட்ட தேதி	:	06.10.2021 மற்றும் 15.12.2021.			
2.	அ) புலத்தணிக்கை செய்த நாள்	:	15.12.2021.			
	ஆ) புலத்தணிக்கையின் போது உடனிருந்த அலுவலர்கள் பற்றிய விவரம்	:	கோபாலபுரம் கிராம நிர்வாக அலுவலர் மற்றும் கீழராஜகுலராமன் வருவாய் ஆய்வாளர்.			
3.	குத்தகை உரிமம் கோரும் விண்ணப்பதாரரின் பெயர் மற்றும் முகவரி	:	திரு.தேவராஜ், த/பெ.சுப்பையா, க.எண்.19/29, ஜி-2கிருஷ்ணன் காலனி, நெற்குன்றம் பாதை, வடபழனி, சென்னை- 600 026.			
4.	குத்தகை உரிமம் கோரும் கனிமங்களின் பெயர்	:	உடைகல், கிராவல்			
5.	குத்தகை உரிமம் கோரும் கால அளவு	:	10 (பத்து ஆண்டுகள்)			
6.	குத்தகை உரிமம் கோரும் இடம் அமைந்துள்ளது பற்றிய விவரம்	:				
வ. எண்	வட்டம்	கிராமம்	புல எண்கள்	மொத்த பரப்பு (ஹெக்)	குத்தகை உரிமம் கோரும் பரப்பு (ஹெக்)	வகைப்பாடு
1	வெம்பக்கோட்டை	கோபாலபுரம்	510/1 510/2 511/1 511/2 502/1 502/2	0.35.50 0.30.00 0.66.50 0.67.00 0.50.50 2.18.00	4.67.50	பட்டா நிலம்
			மொத்தம்	4.67.50	4.67.50	
7.	அ) குத்தகை உரிமம் கோரும் புல எண்கள், விண்ணப்பதாரரின் பெயரில் பட்டா நிலங்களாக இருப்பின் அது பற்றிய விவரம்	:	கோபாலபுரம் கிராமம் பட்டா எண். 1006 மற்றும் 1024 ஆனது சுப்பையா நாயக்கர் மகன் தேவராஜ்-(1), தேவராஜ் மனைவி ஜமுனா தேவி ஆகியோர் பெயரில் கூட்டாக கிராமக் கணக்கில் தாக்கலாகியுள்ளது.			
	ஆ) பட்டாதாரரிடமிருந்து குத்தகை ஒப்பந்தம் பெறப்பட்டிருப்பின் அதுபற்றிய விவரம்	:	இல்லை.			
	இ) குத்தகை கோரும் புல எண்கள் தாழ்த்தப்பட்டோர் / பழங்குடியினருக்கு ஒதுக்கீட்டின் அடிப்படையில் பட்டா வழங்கப்பட்டிருப்பின் அதுபற்றிய விவரம்	:	இல்லை.			

8.	குத்தகை உரிமம் கோரும் புல எண்களின் நான்கு எல்லைகள்.	:	புல எண்	வடக்கு	தெற்கு	கிழக்கு	மேற்கு
			510/1	498	510/2	502/1,2	498
			510/2	510/1	511/1	502/1,2	498
			511/1	510/2	511/2	509	498
			511/2	511/1	511/3	509	498
			502/1	502/2	502/2	502/2	498, 510/1,2
			502/2	501 502/3	506,507 509	500/2A1 503/1A1 503/2	498
9.	குத்தகை உரிமம் கோரும் புல எண்களுக்கு ஏற்கனவே குத்தகை உரிமம் வழங்கப்பட்டிருப்பின் அது பற்றிய விவரம்.	:	இல்லை.				
10.	குத்தகை உரிமம் கோரும் புல எண்களுக்கு அருகில் பாதுகாப்பு இடைவெளிக்குள் அமைந்துள்ள நிரந்தர அமைப்புகள் ஒதுக்கப்பட வேண்டிய பாதுகாப்பு இடைவெளி பற்றிய விவரம்	:	மேற்படி புல எண்களுக்கு அருகில் உள்ள பட்டா நிலங்களுக்கு, ஓடைகளுக்கு போதிய பாதுகாப்பு இடைவெளி விட வேண்டும்.				
11.	அ) குத்தகை உரிமம் கோரும் புல எண்களிலிருந்து 300 மீட்டர் சுற்றளவுக்குள் குடியிருப்பு பகுதிகள்/ அங்கீகரிக்கப்பட்ட வீட்டுமனைப்பிரிவுகள் மற்றும் புராதனச் சின்னங்கள் அமைந்துள்ள விவரம்	:	300 மீட்டர் சுற்றளவுக்குள் குடியிருப்பு பகுதிகள்/ அங்கீகரிக்கப்பட்ட வீட்டுமனைப்பிரிவுகள் மற்றும் புராதனச் சின்னங்கள் ஏதும் இல்லை.				
	ஆ) குத்தகை உரிமம் கோரும் பகுதிக்கு பாதை வசதி உள்ளது பற்றிய விவரம்	:	பாதை வசதி உள்ளது.				
12.	குத்தகை உரிமம் கோரும் புல எண்கள் அமைந்துள்ள கிராமம், மலையிடை பாதுகாப்பு குழுமத்தின் கீழ் வருவது மற்றும் தடையில்லா சான்று பெற வேண்டியது பற்றிய விவரம்	:	-இல்லை-				
13.	குத்தகை உரிமம் கோரும் பகுதி வனவிலங்கு சரணாலயத்திலிருந்து அமைந்துள்ள தூரம், பெறப்பட வேண்டிய தடையில்லா சான்று பற்றிய விவரம்.	:	-இல்லை-				
14.	குத்தகை கோரும் புலஎண்களில் தகுந்த அனுமதியின்றி ஏற்கனவே கனிமங்கள் எடுக்கப்பட்டு அபராதம் விதிக்கப்பட்டிருப்பின் அது பற்றிய விவரம்.	:	-இல்லை-				
15.	அ) குத்தகை உரிமம் கோரும் புலங்களின் பேரில் நிலம் கையகப்படுத்தும் நடவடிக்கைகள் இருப்பின் அது பற்றிய விவரம்.	:	-இல்லை-				
	ஆ) குத்தகை உரிமம் கோரும் புல எண்களின் பேரில் நீதிமன்றத்தில் வழக்குகள் இருப்பின் அதுபற்றிய விவரம்.	:	-இல்லை-				



16.	கிராம நிர்வாக அலுவலரின் வாக்குமூலம் பெறப்பட்டுள்ளதா?	: கிராம நிர்வாக அலுவலர் அளித்துள்ளார்.
17.	குத்தகை உரிமம் வழங்குவது தொடர்பாக "அ1" நோட்டீஸ் விளம்பரம் செய்யப்பட்டு பொது மக்களிடமிருந்து ஆட்சேபனை ஏதும் பெறப்பட்டுள்ளதா?	: "அ1" நோட்டீஸ் விளம்பரம் 22.10.2021 அன்று பிரசுரம் செய்யப்பட்டு ஆட்சேபனைகள் ஏதும் பெறப்படவில்லை.
18.	குத்தகை உரிமம் கோரும் புல எண்களின் பேரில் வருவாய்துறை பரிந்துரை செய்கின்றதா?	: ஆம்

19) குத்தகை உரிமம் கோரும் விண்ணப்பத்தின் பேரில் வெம்பக்கோட்டை வருவாய் வட்டாட்சியரின் அறிக்கையும் பரிந்துரையும்.

திரு.தேவராஜ் த/பெசுப்பையா என்பவர் விண்ணப்பித்துள்ள புல எண்கள் பட்டா நிலங்கள் என்ற அடிப்படையிலும் கோபாலபுரம் கிராம நிர்வாக அலுவலர் மற்றும் கீழராஜகுலராமன் குறுவட்ட வருவாய் ஆய்வாளர் ஆகியோர் மனுதாரர் நிறுவனத்திற்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்துள்ளதன் அடிப்படையிலும், மனுதாரர் நிறுவனத்தாருக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959, விதி 19 மற்றும் 20-ன் கீழ் கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு பத்தாண்டுகளுக்கு குத்தகை உரிமம் வழங்கலாம்.

- 1) அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
- 2) EB Line மற்றும் கிணற்றுக்கு 50மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
- 3) புல எண்களுக்கு அருகில் உள்ள குவாரிகளுக்கு போதிய பாதுகாப்பு தூரம் விட வேண்டும்.
- 4) குவாரி கழிவுகளை குத்தகை உரிமம் வழங்கப்படும் பகுதிக்கு உள்ளேயே இருப்பு வைக்க வேண்டும்.
- 5) வெடிமருந்தினை விதிகளின் படி பாதிப்பு ஏற்படா வண்ணம் பயன்படுத்த வேண்டும்.
- 6) சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.

வருவாய் வட்டாட்சியர்,
வெம்பக்கோட்டை

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வெம்பக்கோட்டை மண்டல துணை வட்டாட்சியரின் அறிக்கை பணிநிறுத்தப்படுகிறது.



சென்னை, வடபழனி என்ற முகவரியைச் சேர்ந்த திரு. க. தேவராஜ் என்பவர், வெம்பக்கோட்டை வட்டம், கோபாலபுரம் கிராமத்தில் பட்டா எண்.1006 ல் உள்ள புல எண்களில் உள்ள நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக்கோரியது தொடர்பாக மேற்படி இடத்தினை (11.11.2021) அன்று புலத்தணிக்கை செய்து எனதறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கப்படுகிறது.

மனுதார் திரு. க. தேவராஜ் என்பவர் வெம்பக்கோட்டை வட்டம், கீழராஜகுலராமன் குறுவட்டம், கோபாலபுரம் கிராமம் பட்டா எண்.1006 ல் சர்வே எண்கள். 502/1 (0.50.50) ச.எ.502/2 (2.18.0), ச.எ.510/2 (0.30.0), ச.எ.511/1 (0.65.50), ச.எ.511/2 (0.67.0) மற்றும் பட்டா எண்.1024 ல் ச.எ.510/1 (0.35.50) மொத்தம் 4.67.5 ஹெக்டேர் பரப்பளவுள்ள நிலத்தில் பத்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் உரிமம் வழங்கக்கோரியுள்ளார். மேற்கண்ட பட்டா எண்கள் மனுதாரர் மற்றும் இவரின் மனைவி ஜமுனாதேவி பெயரில் பட்டா தாக்கலாகி உள்ளது.

மனுதாரர் குவாரி உரிமம் கோரப்பட்டுள்ள புலத்திற்கு 300 மீட்டர் சுற்றளவிற்கு குடியிருப்பு பகுதிகளோ பள்ளி மற்றும் கல்லூரிகளோ ஏதும் இல்லை. மேற்படி புலத்திற்கு தென்கிழக்கு பகுதியில் புலஎண். 513 ல் கோபாலபுரம் to வடகரை செல்லும் சாலை உள்ளது. இந்த சாலைக்கு கீழ்புறம் புல எண்.279/1பி ல் திரு. தெய்வசிகாமணி த/பெ. பாலகிருஷ்ணன் என்பவருக்கு சொந்தமான காரை வீடு உள்ளது. குவாரி உரிமம் கோரும் புலத்திற்கு தெற்குப்பக்கம் புல எண்.512 ல் கிழமேல் சாலையும், வடக்குப் பக்கம் புல எண்.498. 1.81.5 ஹெக்டேர் பரப்பளவில் வண்டிப்பாதையும் ஓடையும் உள்ளது. மேற்படி வண்டிப்பாதைக்கும் ஓடைக்கும் இதனால் பாதிப்பு ஏதும் இல்லை. மேற்படி குவாரி அமைய உள்ள சர்வே எண்.502/1, 502/2 ஆகியவற்றின் இடைய உள்ள புல எண்.502/3 ல் மனுதாரர் மற்றும் இவரின் மனைவி ஜமுனாதேவி பெயரில் கூட்டாக உள்ள 0.34.0 ஏர்ஸ் பரப்புள்ள நிலத்தில் ஒரு தூர்ந்த கிணறு ஒன்று உள்ளது.

மேற்படி குவாரி அமைய உள்ள இடத்தில் அருகில் புல எண்.503/2 ல் வாஞ்சிநாதன் என்பவரது பெயரில் உள்ள பட்டா நிலத்தில் ஒரு சிறிய தூர்ந்த ஊரணி உள்ளது. மேற்படி குவாரி அமைவதால் கிணறு மற்றும் தூர்ந்த ஊரணிக்கு மற்றும் விவசாய நிலங்களுக்கோ எந்தவித பாதிப்பும் இல்லை. குவாரி அமைய உள்ள

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இடத்திற்கு தென்மேற்கு மூலையில் புல எண்.525 ல் நீர்ப்பிடி என்ற வகைப்பாடுடைய புலம் ஒன்று உள்ளது. வடகரை கண்மாயின் நீட்சியாக அமைந்துள்ள இந்த நீர்ப்பிடிப்பு பகுதி புல எண்.498 ல் உள்ள வண்டிப்பாதையையொட்டி உள்ள ஒடையிலிருந்து வரும் நீர் சேரும் இடமாகும். ஆனால் மேற்படி ஒடை தூர்ந்த நிலையில் உள்ளதால் அதிகளவு நீர் தேங்காத இடமாகவே உள்ளது. மேலும் குவாரி அமைவதால் இந்நீர்ப்பிடிப்பு பகுதிக்கு பாதிப்பு இல்லை.

மேற்படி குவாரி அமைய உள்ள இடத்திற்கு மேற்கே சுமார் 370 மீட்டர் தூரத்தில் புல எண்.556/2 ல் ராஜ்மோகன் த/பெ. வேங்கடபதி என்பவருக்கு சொந்தமான ஒரு குவாரி ஒன்று செயல்பட்டுக்கொண்டிருக்கிறது. அதே போல் சுமார் 450 மீட்டர் தூரத்தில் ஆறுமுகம் த/பெ. பரமகுரு என்பவருக்கு சொந்தமான செயல்படாத குவாரி ஒன்று உள்ளது. குவாரி அமைய உள்ள கூட்டுப்புலத்திற்கு சுமார் 50 மீட்டருக்குள் தெற்குப்பக்கமும் வடக்குப்பக்கமும் சாலை மட்டும் உள்ளது. வேறு ரயில் பாதைகளோ, கோவில்களோ, புராதனச் சின்னங்களோ நீர் நிலைகளோ மற்றும் வேறு நிரந்திரமான அமைப்புகளோ இல்லை.

ஆனால் குவாரி அமையவுள்ள கூட்டு புல எண்களில் புல எண்.502/1, 2 ஆகிய புலங்களுக்கு ஊடாகவும், புல எண்.511/1, 2 ன் வழியாகவும் மின் கம்பிகள் செல்கிறது. ஆனால் மின்கம்பிகளை அகற்றுவதற்கு மனுதாரர் தேவராஜ் என்பவர் கீழராஜகுலராமன் மின்சார வாரிய உதவி செயற்பொறியாளருக்கு விண்ணப்பம் செய்துள்ளதாகவும், அதற்காக ரூ.1180/- செலுத்தி ரசீதும் பெற்றுள்ளார்.

மேற்படி குவாரி அமைவது குறித்து கோபாலபுரம் கிராம பொதுமக்களிடம் "அ1" நோட்டீஸ் மூலமாக விளம்பரம் செய்யப்பட்டதில் ஆட்சேபனை ஏதும் வரப்பெறவில்லை.

மேற்படி குவாரி அமைய உள்ள இடத்திற்கு நான்குமால் விபரம்:-

1) புல எண்.510/1 (0.35.5) க்கான நான்குமால்.

வடக்கு - புல எண்.498 சாலை

தெற்கு - புல எண்.510/2 மனுதாரர் நிலம்.

கிழக்கு - புல எண்.502/1, 2 மனுதாரர் நிலம்.

மேற்கு - புல எண்.498 சாலை.



2) புல எண்.510/2 (0.30.0) க்கான நான்குமால்.

வடக்கு - புல எண்.510/1 மனுதாரர் நிலம்.

தெற்கு - புல எண்.511/1 மனுதாரர் நிலம்.

கிழக்கு - புல எண்.502/1, 2 மனுதாரர் நிலம்.

மேற்கு - புல எண்.498 சாலை.

3) புல எண்.511/1 (0.66.5) க்கான நான்குமால்.

வடக்கு - புல எண்.510/2 மனுதாரர் நிலம்.

தெற்கு - புல எண்.511/2

கிழக்கு - புல எண்.502/1, 2 மனுதாரர் நிலம்.

மேற்கு - புல எண்.498 சாலை.

4) புல எண்.511/2 (0.67.0) க்கான நான்குமால்.

வடக்கு - புல எண்.511/1 மனுதாரர் நிலம்.

தெற்கு - புல எண்.511/3 சாலை.

கிழக்கு - புல எண்.509 ராமநாதன்

மேற்கு - புல எண்.498 சாலை.

5) புல எண்.502/1 (0.50.5) க்கான நான்குமால்.

வடக்கு - புல எண். 502/2 மனுதாரர் நிலம்.

தெற்கு - புல எண்.502/2 மனுதாரர் நிலம்.

கிழக்கு - புல எண்.502/2 மனுதாரர் நிலம்.

மேற்கு - புல எண்.498 சாலை, பு.எண்.510/1, 2 மனுதாரர் நிலம்.

6) புல எண்.502/2 (2.18.0) க்கான நான்குமால்.

வடக்கு - புல எண்.501, 502/3 மனுதாரர் நிலம்.

தெற்கு - புல எண்.506, 507, 509 ராமநாதன் நிலம்.

கிழக்கு - புல எண்.500/2ஏ1 ராஜேஸ்வரி.

புல எண்.503/1ஏ1 அய்யாசாமி.

புல எண்.503/2 வாஞ்சிநாதன்.

மேற்கு - புல எண்.498 சாலை.

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மேற்படி குவாரி அமைய உள்ள இடம் இராஜபாளையம் ஊராட்சி ஒன்றியம், கோபாலபுரம் பஞ்சாயத்திற்கு உட்பட்டது ஆகும். எனவே, கீழராஜகுலராமன் குறுவட்டம், கோபாலபுரம் கிராமம் பட்டா எண்.1006 ல் சர்வே எண்கள். 502/1 (0.50.50) ச.எ.502/2 (2.18.0), ச.எ.510/2 (0.30.0), ச.எ.511/1 (0.65.50), ச.எ.511/2 (0.67.0) மற்றும் பட்டா எண்.1024 ல் ச.எ.510/1 (0.35.50) மொத்தம் 4.67.5 ஹெக்டேர் பரப்பளவுள்ள நிலத்தில் பத்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் எடுக்க மனுதாரர் திரு. தேவராஜ் என்பவருக்கு உரிமம் வழங்க பரிந்துரை செய்கிறேன் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

மண்டலத் துணை வட்டாட்சியர்
வெம்பக்கோட்டை.

2457mm - B. R. 26/23/2021

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(5. 2. 2. 1.)

50th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th 31st 32nd 33rd 34th 35th 36th 37th 38th 39th 40th 41st 42nd 43rd 44th 45th 46th 47th 48th 49th 50th 51st 52nd 53rd 54th 55th 56th 57th 58th 59th 60th 61st 62nd 63rd 64th 65th 66th 67th 68th 69th 70th 71st 72nd 73rd 74th 75th 76th 77th 78th 79th 80th 81st 82nd 83rd 84th 85th 86th 87th 88th 89th 90th 91st 92nd 93rd 94th 95th 96th 97th 98th 99th 100th 101st 102nd 103rd 104th 105th 106th 107th 108th 109th 110th 111th 112th 113th 114th 115th 116th 117th 118th 119th 120th 121st 122nd 123rd 124th 125th 126th 127th 128th 129th 130th 131st 132nd 133rd 134th 135th 136th 137th 138th 139th 140th 141st 142nd 143rd 144th 145th 146th 147th 148th 149th 150th 151st 152nd 153rd 154th 155th 156th 157th 158th 159th 160th 161st 162nd 163rd 164th 165th 166th 167th 168th 169th 170th 171st 172nd 173rd 174th 175th 176th 177th 178th 179th 180th 181st 182nd 183rd 184th 185th 186th 187th 188th 189th 190th 191st 192nd 193rd 194th 195th 196th 197th 198th 199th 200th 201st 202nd 203rd 204th 205th 206th 207th 208th 209th 210th 211st 212nd 213th 214th 215th 216th 217th 218th 219th 220th 221st 222nd 223rd 224th 225th 226th 227th 228th 229th 230th 231st 232nd 233rd 234th 235th 236th 237th 238th 239th 240th 241st 242nd 243rd 244th 245th 246th 247th 248th 249th 250th 251st 252nd 253rd 254th 255th 256th 257th 258th 259th 260th 261st 262nd 263rd 264th 265th 266th 267th 268th 269th 270th 271st 272nd 273rd 274th 275th 276th 277th 278th 279th 280th 281st 282nd 283rd 284th 285th 286th 287th 288th 289th 290th 291st 292nd 293rd 294th 295th 296th 297th 298th 299th 300th 301st 302nd 303rd 304th 305th 306th 307th 308th 309th 310th 311st 312nd 313th 314th 315th 316th 317th 318th 319th 320th 321st 322nd 323rd 324th 325th 326th 327th 328th 329th 330th 331st 332nd 333rd 334th 335th 336th 337th 338th 339th 340th 341st 342nd 343rd 344th 345th 346th 347th 348th 349th 350th 351st 352nd 353rd 354th 355th 356th 357th 358th 359th 360th 361st 362nd 363rd 364th 365th 366th 367th 368th 369th 370th 371st 372nd 373rd 374th 375th 376th 377th 378th 379th 380th 381st 382nd 383rd 384th 385th 386th 387th 388th 389th 390th 391st 392nd 393rd 394th 395th 396th 397th 398th 399th 400th 401st 402nd 403rd 404th 405th 406th 407th 408th 409th 410th 411st 412nd 413th 414th 415th 416th 417th 418th 419th 420th 421st 422nd 423rd 424th 425th 426th 427th 428th 429th 430th 431st 432nd 433rd 434th 435th 436th 437th 438th 439th 440th 441st 442nd 443rd 444th 445th 446th 447th 448th 449th 450th 451st 452nd 453rd 454th 455th 456th 457th 458th 459th 460th 461st 462nd 463rd 464th 465th 466th 467th 468th 469th 470th 471st 472nd 473rd 474th 475th 476th 477th 478th 479th 480th 481st 482nd 483rd 484th 485th 486th 487th 488th 489th 490th 491st 492nd 493rd 494th 495th 496th 497th 498th 499th 500th 501st 502nd 503rd 504th 505th 506th 507th 508th 509th 510th 511st 512nd 513th 514th 515th 516th 517th 518th 519th 520th 521st 522nd 523rd 524th 525th 526th 527th 528th 529th 530th 531st 532nd 533rd 534th 535th 536th 537th 538th 539th 540th 541st 542nd 543rd 544th 545th 546th 547th 548th 549th 550th 551st 552nd 553rd 554th 555th 556th 557th 558th 559th 560th 561st 562nd 563rd 564th 565th 566th 567th 568th 569th 570th 571st 572nd 573rd 574th 575th 576th 577th 578th 579th 580th 581st 582nd 583rd 584th 585th 586th 587th 588th 589th 590th 591st 592nd 593rd 594th 595th 596th 597th 598th 599th 600th 601st 602nd 603rd 604th 605th 606th 607th 608th 609th 610th 611st 612nd 613th 614th 615th 616th 617th 618th 619th 620th 621st 622nd 623rd 624th 625th 626th 627th 628th 629th 630th 631st 632nd 633rd 634th 635th 636th 637th 638th 639th 640th 641st 642nd 643rd 644th 645th 646th 647th 648th 649th 650th 651st 652nd 653rd 654th 655th 656th 657th 658th 659th 660th 661st 662nd 663rd 664th 665th 666th 667th 668th 669th 670th 671st 672nd 673rd 674th 675th 676th 677th 678th 679th 680th 681st 682nd 683rd 684th 685th 686th 687th 688th 689th 690th 691st 692nd 693rd 694th 695th 696th 697th 698th 699th 700th 701st 702nd 703rd 704th 705th 706th 707th 708th 709th 710th 711st 712nd 713th 714th 715th 716th 717th 718th 719th 720th 721st 722nd 723rd 724th 725th 726th 727th 728th 729th 730th 731st 732nd 733rd 734th 735th 736th 737th 738th 739th 740th 741st 742nd 743rd 744th 745th 746th 747th 748th 749th 750th 751st 752nd 753rd 754th 755th 756th 757th 758th 759th 760th 761st 762nd 763rd 764th 765th 766th 767th 768th 769th 770th 771st 772nd 773rd 774th 775th 776th 777th 778th 779th 780th 781st 782nd 783rd 784th 785th 786th 787th 788th 789th 790th 791st 792nd 793rd 794th 795th 796th 797th 798th 799th 800th 801st 802nd 803rd 804th 805th 806th 807th 808th 809th 810th 811st 812nd 813th 814th 815th 816th 817th 818th 819th 820th 821st 822nd 823rd 824th 825th 826th 827th 828th 829th 830th 831st 832nd 833rd 834th 835th 836th 837th 838th 839th 840th 841st 842nd 843rd 8

(5-20-20)

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14/

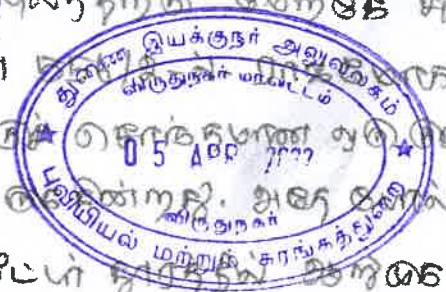
ശ്രീമദ് ഭഗവദ് ഗീത (അഥവാ ഭഗവദ് ഗീത) എന്ന പേരിൽ
പ്രസിദ്ധപ്പെടുത്തിയ, മേൽപ്പറഞ്ഞ പ്രസിദ്ധപ്പെടുത്തിയ, പ്രസിദ്ധപ്പെടുത്തിയ
പ്രസിദ്ധപ്പെടുത്തിയ, പ്രസിദ്ധപ്പെടുത്തിയ, പ്രസിദ്ധപ്പെടുത്തിയ
പ്രസിദ്ധപ്പെടുത്തിയ.

പ്രസിദ്ധപ്പെടുത്തിയ
പ്രസിദ്ധപ്പെടുത്തിയ
പ്രസിദ്ധപ്പെടുത്തിയ
പ്രസിദ്ധപ്പെടുത്തിയ



A108

இவ்வாறு அமைப்பதற்கான கட்டடப் படிவத்திற்கு மேற்கே சிபார்சு
 370 ஸ்டீப் டிராப்டிங் புளாண்
 5100 மேம்பாட்டினைக் கொண்டிருக்கின்றது. மேலும்
 ஏற்றுக் கொள்ளப்படும் தகவல்கள்
 மேற்கே (தரப்பட்ட) 450-ஸ்டீப் டிராப்டிங்
 5100 பரமக்குள் கொண்டுவரப்பட்டிருக்கின்றன. மேலும்
 இவ்வாறு ஏற்றுக் கொள்ளும் இவ்வாறு அமைப்பதற்கான கட்டடப்
 - படிவத்திற்கு 50 ஸ்டீப்களுக்குள்ளாகவே தரப்பட்டிருக்கின்றன.
 உட்கட்டிடம் பக்கம் சாலை மட்டுமே உள்ளது. மேலும் ரயில்
 பாதையிலே, கோவில்களிலே, புராணத்திற்கு சிவனாகிய கோ
 கில் கிணர்களிலே, மற்றும் மேலும் கட்டுப்பாட்டின் அமைப்புகளின்
 ஏதாவது இல்லை. ஆகையால் இவ்வாறு அமைப்பதற்கான கட்டடப் புளா
 ண்டினைப் புளாண்-502/1, 2 - ஆகிய புளாண்டுகளை
 உட்கட்டிடம், புளாண்-511/1, 2-ன் உட்கட்டிடம் மீது
 கட்டுப்பாட்டை தரவேண்டியது (அல்லாதது மீது). ஆகையால்
 மேற்படி மீது கட்டுப்பாட்டை அதிகாரத்திற்கு மீது தர
 தேவையான ஒன்றியம் இவ்வாறுகூறியதால் மீது தர மாநில
 உதவி தரவேண்டியது. அங்குள்ளிருந்து உணர்ச்சியால்
 தரவேண்டியது. அங்குள்ளிருந்து 1180/- தரவேண்டியது
 தரவேண்டியது. மேற்படி இவ்வாறு அமைப்பது குறித்து கோரியு
 இவ்வாறு தரவேண்டியது. "அ-1-கோட்டை"- இவ்வாறு
 உணர்ச்சியால் தரவேண்டியது. உட்கட்டிடம் ஏதாவது உட்கட்டிடம்
 - உட்கட்டிடம். மேற்படி இவ்வாறு அமைப்பதற்கான கட்டடத் தரவேண்டியது
 - உட்கட்டிடம் உட்கட்டிடம் - கோவில்களில் உட்கட்டிடம்
 உட்கட்டிடம் உட்கட்டிடம் உட்கட்டிடம் உட்கட்டிடம் உட்கட்டிடம்
 உட்கட்டிடம் உட்கட்டிடம் உட்கட்டிடம் உட்கட்டிடம் உட்கட்டிடம்



11/11/2024
 கிராம துறைமுக அலுவலர்
 கோயம்புரம் கிராமம்
 கவம்பக்கோட்டை அலுவலர்

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சென்னை சிவில் அமைச்சர் அலுவலகம்

4வது மாற்றம் செய்யப்பட்டுள்ள பிண்குலியை



1) 510/1 - 0.35.5 - க்கான பிண்குலியை

- நுணர்வு தபுத்கு (510/2) உபகரு
- சாணல்கு (498) தகற்கு
- நுணர்வு தபுத்கு (502/1, 2) தகற்கு
- சாணல்கு (498) தகற்கு

2) 510/2 - (0.30.0) க்கான பிண்குலியை

- நுணர்வு தபுத்கு (511/1) உபகரு
- நுணர்வு தபுத்கு (510/1) தகற்கு
- சாணல்கு (498/-) தகற்கு
- நுணர்வு தபுத்கு (502/1, 2) தகற்கு

3) 511/1 - 0.66.5 - க்கான பிண்குலியை

- நுணர்வு தபுத்கு (511/2) உபகரு
- நுணர்வு தபுத்கு (510/2) தகற்கு
- சாணல்கு (498/-) தகற்கு
- நுணர்வு தபுத்கு (509/-) தகற்கு

4) 511/2 - 0.67.0 - க்கான பிண்குலியை

- நுணர்வு தபுத்கு (511/1) தகற்கு
- சாணல்கு (511/3) உபகரு
- சாணல்கு (498/-) தகற்கு
- நுணர்வு தபுத்கு (509/-) தகற்கு

Secretary

- நண்பு கப்ஜெடு (502/2) உபகடு
- நண்பு கப்ஜெடு (502/2) கெற்கடு
- நண்பு கப்ஜெடு (500/1, 2), சாணகெடு (498) கெடு
- நண்பு கப்ஜெடு (502/2) - கெற்கடு

5) புல ரண்: 502/2-2.18.0-50/1000000

- நாமநாந் கப்ஜெடு (506/- 507/- 509/-) உபகடு
- நண்பு கப்ஜெடு (501/- 502/3) கெற்கடு
- கெய்யுச்சும (500/2A) நாமநாந், சாய்யாந் கப்ஜெடு (503/1A), நாமநாந் (503/2) கெடு கெற்கடு
- சாணகெடு (498/-) கெடு


11/11/2024
கிராம நிர்வாக அலுவலர்
கோபாலபுரம் கிராமம்
வெம்பக்கோட்டை வட்டம்

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தமிழ்நாடு தமில்நாடு TAMILNADU

BF 961723

NEW PRINCE EXPLOSIVES

ELAYIRAMPANNAI

P. Subramanian
S.R.O. சப்தமம் வெங்கட்டர்
கோவில்க்குடி.
L. No. B 7123000180

2022 கமிட்டி :
மதிப்பு : ரூ. 50/-
தேதி : 28.3.2022

AGREEMENT

This Agreement made on the day of Licence to be granted Mr. S. DEVARAJ S/O K.R. SUBBAIYA , Gobalapuram village, Vembakottai taluk , Virudhunagar (Dist)Tamilnadu (herein after called the owner of quarry) and Licensee Mr. G. Vikramathith poopathi S/O . Gunasekaran , M/S NEW PRINCE EXPLOSIVES 7/72, MIDDLE , STREET, Elayirampannai (Post) VEMBAKOTTAI (TALUK) VIRUDHUNAGAR (DISTRICT) Licence No E/SC/TN/22/719 (E99261) from 22 (Herein after called as Dealer of Explosives)

For New Prince Explosives

Partner



Where as the owner of the quarry having Licence to be granted for survey No.. 502/1,502/2p,510/2,510/2,511/2&511/2 Total Hectares 4.04.00 the survey number are within **Gopalapuram Village,Vembakottai (Taluk), Virudhunagar (District) KV1/848/2021 Date:28-02-2022**

And where as the dealer of Explosives have agree to carry our the blasting operation in skillful scientific shot firer till the valid date

Where as the party of the second part has decided to entrust the work of conduction blasting operation in his/her quarry work to the party of the first part on contract basic as per mutually agreed terms and condition.

Where as the part of the first part is responsible or blasting operation and also making his own agreement for the explosives and exploding machines/equipments required for the work.the entire blasting in the above quarry and the possesment of blasting equipments will be handle by the party of the first part having valid Licence and short firer permit under the explosives Rules, 2008 issued by the Department of Explosives and hereby undertake the responsibility for the work entrusted.

Where as payments will be made periodically by the party of the second part for the Explosives used and hours and time of the exploding equipments put into use calculations will be made and elements will be arrived at on the completion of blasting operations.

For New Prince Explosives

Partner

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अनुज्ञप्ति प्रारूप एनई - 7 / LICENCE FORM LE 75 APP
(विस्फोटक नियम 2008 की अनुसूची 4 के भाग 1 का अनुच्छेद 7 देखें)
(See article no 7 of Part I of Schedule IV of Explosives Rules, 2008)

अनुज्ञप्ति : सड़क वैन में विस्फोटकों के परिवहन के लिए
Licence to : transport explosives in a road van

अनुज्ञप्ति संख्या / Licence No. : E/SC/TN/25/1370(E110077)
वार्षिक फीस रूप / Annual Fee Rs : 2500/-



- अनुज्ञप्ति एतद्वारा जारी की जाती है
Licence is hereby granted to : J. Prince Nimal Doss (Occupier : J.Prince Nimal Doss)
7/71, Middle Street, Elayirampennai, Sattur (Tk),
District-VIRUDHUNAGAR, State-Tamil Nadu, Pincode-626201
- अनुज्ञप्तिधारी की प्रस्थिति / Status of licensee : Individual
- सड़क वैन की विशिष्टियाँ / Particulars of the road van:

पंजीकरण संख्या / Registration No.	TN-67/BF-4312
यान का मेक एवं मॉडल / Make and model of vehicle	Mahindra and Mahindra Ltd
लदान रहित वजन / Unladen weight	1860 Kg(s)
लदान सहित अधिकतम वजन / Maximum laden weight	2960 Kg(s)
परिवहन के लिए अनुज्ञेय विस्फोटकों की अधिकतम मात्रा Maximum quantity of explosives permitted for transport	1100 Kg(s)
इंजिन संख्या / Engine No.	TBHIK31351
चैसिस संख्या / Chassis No.	MA1ZR2TBKH1K79750
अन्य फिटिंग्स का विवरण / Description of Other Fittings	As per approved plan attached
वाहन के लिए अनुमत्य विस्फोटकों की मात्रा / Quantity of Explosives permitted to carry	1100 Kg(s)

- अनुज्ञप्त परिसर निम्नलिखित आरेखण (आरेखणों) के अनुरूप होना चाहिए / The licensed premises shall conform to the following drawing(s):
आरेखण संख्या / Drawing No : E/SC/TN/25/1370(E110077) दिनांक / dated : 30/07/2018
- समय समय पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुलग्नकों के अधीन अनुज्ञप्ति प्रदान की जाती है।
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following annexures....
(क) उपर्युक्त क्रम संख्या 4 में यथाकथित सड़क वैन का आरेखण / (a) Drawings of the road van as stated in serial no.4 above.
(ख) अनुज्ञापन प्राधिकारी द्वारा हस्ताक्षरित शर्तें / (b) Conditions signed by the licensing authority.
- यह अनुज्ञप्ति तारीख 31 मार्च 2023 तक विधिमन्य रहेगी / This licence shall remain valid till 31st day of March 2023

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या इस अनुज्ञप्ति की शर्तों के उल्लंघन, अनुसूची 5 के भाग 4 में सन्दर्भित, जहाँ भी लागू हो, या यदि अनुज्ञप्त परिसर आरेखण या उससे संबंधित उपबन्धों में दर्शाए गए विवरण के अनुरूप नहीं पाए जाने पर निलम्बित या प्रतिसंहत की जा सकती है।

This licence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and annexure attached hereto.

दिनांक / Date: 30/07/2018

संयुक्त मुख्य विस्फोटक नियंत्रक / Joint Chief Controller of Explosives
दक्षिणार्चल, चेन्नई / South Circle, Chennai

अनुज्ञप्ति के नवीनीकरण हेतु पृष्ठान्न / Endorsement for renewal of licence:

नवीनीकरण की तिथि
Date of Renewal

वैधता समाप्ति की तिथि
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर
Signature of licensing authority

वैधानिक चेतावनी : विस्फोटकों का तापरवाही से प्रयोग या दुरुपयोग, विधि के अधीन गम्भीर दण्डित अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.



अनुज्ञापित प्रारूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग I के अनुच्छेद 3(क) से (घ) देखिए)
(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापित
Licence to possess : (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञापित सं. (Licence No.): E/SC/TN/22/719(E99261)
वार्षिक फीस रूपए (Annual Fee Rs): 9200/-

1. Licence is hereby granted to

M/s. New Prince Explosives (अधिभोगी / Occupier : G. VIKRAMATHITHABOOPATHY), 7/71, Middle Street,
Elayirampainai, Vembakottai Tq., Town/Village - Elayirampainai, District-VIRUDHUNAGAR, State-Tamil Nadu,
Pincode - 626201



को अनुज्ञापित अनुदत्त की जाती है।

2. अनुज्ञापितधारी की प्राप्ति | Status of licensee : Company

3. अनुज्ञापित निम्नलिखित प्रयोजनों के लिए विधिमन्य है।
Licence is valid only for the following purpose.

4. अनुज्ञापित विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमन्य है।
Licence is valid for the following kinds and quantity of explosives: - (क) (a)

क्र. सं.	नाम और विवरण	वर्ग और प्रभाग	उप-प्रभाग	मात्रा किसी एक समय में
Sr. No.	Name and Description	Class & Division	Sub-division	Quantity at any one time
1.	Nitrate Mixture	2.0	0	4000 Kg
2.	Safety Fuse	6.1	0	5490 Mtrs
3.	Electric and/or Ordinary Detonators	6.3	0	44000 Nos
4.	Detonating Fuse	6.2	0	30000 Mtrs

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापित के लिए]
(b) Quantity of explosives to be purchased in a calendar month [applicable for licence under article 3(b) and (c)] :

15 times
as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापित परिसर की पुष्टि होती है।
The licensed premises shall conform to the following drawing(s):

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/719(E99261)
दिनांक (Dated) 02/11/2021

6. अनुज्ञापित परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:
Survey No. 1759/2, ग्राम (Town/Village) : Duraisamparam village.

जिला (District) VIRUDHUNAGAR

राज्य (State)

Tamil Nadu

पुलिस थाना (Police Station) : Maraneri

पिनकोड (Pincode)

626201

दूरभाष (Phone)

ई.मेल (E-Mail)

princenimaldoss@gmail.com

फैक्स (Fax)

7. अनुज्ञापित परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।
The licensed premises consist of following facilities.

RCC Building

8. अनुज्ञापित समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और
निम्नलिखित उपबंधों के अधीन रहते हुए अनुदत्त की जाती है।
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2004 framed there under
and the conditions, additional conditions and the following Annexures.

- उपर्वृत्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, संरचना संबंधी और अन्य विवरण दर्शित करते हुए)
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
- अनुज्ञापित प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापित की शर्त और अतिरिक्त शर्तें।
Conditions and Additional Conditions of this licence signed by the licensing authority.
- दूरी प्रारूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञापित तारीख 31 मार्च 2023 तक विधिमन्य रहेगी। This licence shall remain valid till 31st day of March 2023.

यह अनुज्ञापित, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपवर्णित इस अनुज्ञापित की शर्तों का
अधिक्रमण करने या यदि अनुज्ञापित परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिबंधित की जा सकती है, जहां
वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth
under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in
the plans and Annexure attached hereto.

तारीख | The Date - 05/04/2018

संयुक्त मुख्य विस्फोटक नियंत्रक

Joint Chief Controller of Explosives
South Circle, Chennai

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 02/11/2021

नवीनीकरण के पृष्ठान्न के लिए स्थान
Space for Endorsement of Renewal

नवीनीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टांप
Signature of licensing authority and stamp

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical
signature. Applicant may take printout for their records.

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http://10.0.50.11/IntFrm/ExplosivesLicenceForm

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செய்தி எண்: 107/2018
 ஷாட் ஫ைரர் கர்ட்ஸ் பிரமாண-பத்ரா | Shot Firing Certificate
 (அட்டிச்சி IV கட்டளை 10 கீழ்) See article 10 of Part I of Schedule IV
 [விசயத்தின் கீழ், 2008 கட்டளை 107(5) கீழ்] see rule 107(5) of Explosives Act, 1884

(खान अधिनियम, 1952 के अधीन न आने वाले क्षेत्र में विस्फोट करने के लिए मंजूरी प्रमाणपत्र)

(Certificate of competency to carry out blasting of explosives in area not coming under)

மனுவை No.: E/SC/TN/30/2180(E114333)

சான்றிதழ் பெற்றவர்: **K.SELVAKUMAR S/O.KANT**

பிறந்த நாள்: 17/05/1990, இவரது முகவரி: 7/71, MIDDLE STREET, ELAIYARAMPANNAL, SATTUR 626201, VIRUDHUNAGAR, Tamil Nadu - 626201. இவரது புகை வெடி வெடிவெட்டுகளை நிர்வகிப்பதில் தகுதி பெற்ற நாள்: 30/10/2018. இவரது புகை வெடி வெடிவெட்டுகளை நிர்வகிப்பதில் தகுதி பெற்ற நாள்: 30/10/2018. இவரது புகை வெடி வெடிவெட்டுகளை நிர்வகிப்பதில் தகுதி பெற்ற நாள்: 30/10/2018.

This is to certify that **Shri K.SELVAKUMAR S/O.KANT**, born on 17/05/1990, resident of 7/71, MIDDLE STREET, ELAIYARAMPANNAL, SATTUR 626201, VIRUDHUNAGAR, Tamil Nadu - 626201 passed the shotfirer's examination held on 30/10/2018 conducted by Dy. Controller of Explosives, Chennai and is authorised to conduct blasting operations as mentioned below using explosives in areas other than mines coming under the purview of the Mines Act 1952, subject to the provisions of the Explosives Act, 1884 and the rules framed thereunder.

சான்றிதழ் பெற்றவர்: **K.SELVAKUMAR S/O.KANT**

பிறந்த நாள்: 17/05/1990, இவரது முகவரி: 7/71, MIDDLE STREET, ELAIYARAMPANNAL, SATTUR 626201, VIRUDHUNAGAR, Tamil Nadu - 626201.

Authorised class, category and type of blasting :

Class : (B), Category : General aboveground, All phases of aboveground blasting operation

[பகுதி 107-ன் கீழ் (5) க்கு உட்பட்ட பகுதி] See explanation of sub-rule (5) of rule 107]

यह प्रमाणपत्र 14/11/2023 (आरो करने की तारीख से पांच वर्ष) तक विधिमान्य होगा।

This certificate shall remain valid till 14/11/2023 (five years from the date of issue)

இந்த சான்றிதழ், அதன் அடர்த்தி கீழ்க்கண்ட விதிகளின் கீழ், அதன் பிற்பகுதியில் குறிப்பிடப்பட்டுள்ள பகுதிகளில் வெடி வெடிவெட்டுகளை நிர்வகிப்பதில் தகுதி பெற்ற நாள்: 30/10/2018.

This certificate is liable to be suspended or revoked for any violation of the Act or rules framed thereunder or the conditions of this certificate or if there is any discrepancy or deviation in the information or suppression of facts furnished by the applicant in his application form.

இடம்: **Chennai**

திகதி: **14/11/2018**

சங்குக்குடி வெடி வெடிவெட்டுகளை நிர்வகிப்பதில் தகுதி பெற்றவர்: **Joint Chief Controller of Explosives**
 திண்டிவனம், சென்னை: **South Circle, Chennai**

புதிதான சான்றிதழ் பெறும்
 Indorsement for revalidation

புதிதான சான்றிதழ் பெறும்
 Date of Revalidation

சான்றிதழ்
 Date of Expiry

சங்குக்குடி வெடி வெடிவெட்டுகளை நிர்வகிப்பதில் தகுதி பெற்றவர்
 Signature of licensing authority

कानूनी चेतावनी: विस्फोटकों के गलत से बचने का सख्त दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।

Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.



NAME OF THE APPLICANT:

**SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.**

PLATE NO. I

ROUGH STONE AND GRAVEL QUARRY

LOCATION PLAN

SCALE:- 1CM = 12.5KMs

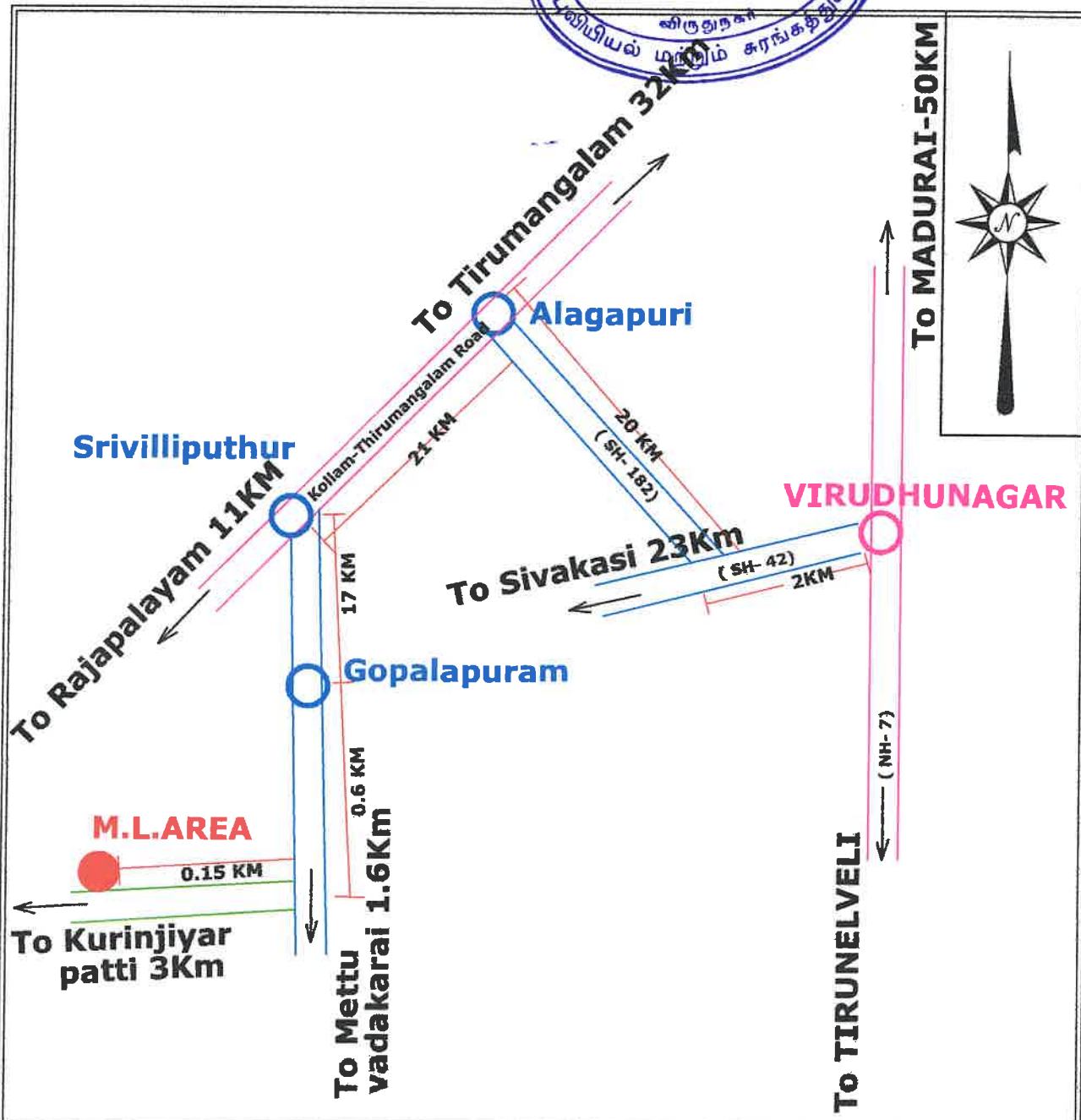
INDEX:-

MINING LEASE APPLIED AREA

	State capital		Golden Quadrilateral
	District headquarters		North-South & East-West Corridors
	Other town		National Highway
	National Highway number		Railway

PREPARED BY:-

M. Dharmalingam
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
RQP / MAS / 260 / 2014 / A



NAME OF THE APPLICANT:	PLATE NO. IA
SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH, 19/29, G2, KRISHNAN COLONY, NERKUNDRAM PATHAI, VADAPALANI, CHENNAI, TAMILNADU - 600 026.	ROUGH STONE AND GRAVEL QUARRY KEY MAP SCALE:- NOT TO SCALE
INDEX:- MINING LEASE APPLIED AREA NATIONAL HIGHWAY MAIN ROAD (STATE HIGHWAY & VILLAGE ROAD) APPROACH ROAD (Cart track)	PREPARED BY:- M. DHARMALINGAM M.Sc.,(Geol.) FCC.,(Mining) Recognised Qualified Person RQP/ MAS / 260 / 2014 / A

A123



PLATE NO. II

NAME OF THE APPLICANT:

**SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.**

TOPO SHEET No.58-G/11

LATITUDE : 9° 21' 08.4" To 9° 21' 16.4"

LONGITUDE : 77° 37' 14.5" To 77° 37' 23.7"

INDEX:- MINING LEASE APPLIED AREA

WIND DIRECTION

1KM RADIUS

5KM RADIUS

10KM RADIUS

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 Four track with pass Foot-path	
Streams with track in bed, undefined Canal	
Dams masonry or rock filled, earthwork Weir	
River dry with water channel, with island & rocks Tidal river	
Submerged rocks Shoal Swamp Reeds	
Wells lined, unlined Tubewell Spring Tanks perennial, dry	
Embankments road or rail, tank Broken ground	
Railways broad gauge double, single with station, under constr	
Railways other gauges double, single with distance stone, do	
Mineral line or tramway Kin. 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	

ROUGH STONE AND GRAVEL QUARRY

TOPO SKETCH - 10KM RADIUS

SCALE:- 1: 1,00,000

PREPARED BY:-

M. Dharmalingam
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
POP/MAS/260/2014/A

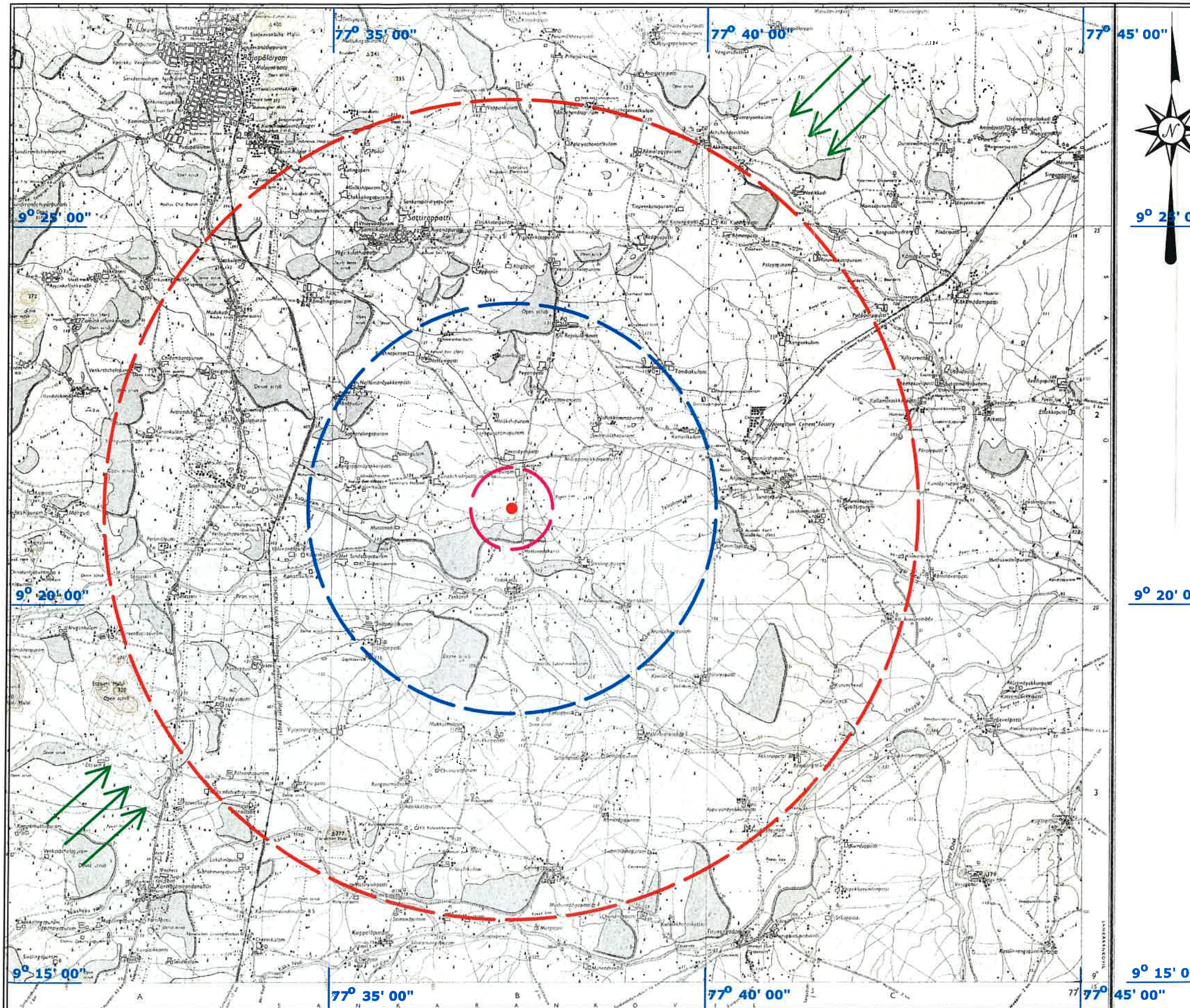
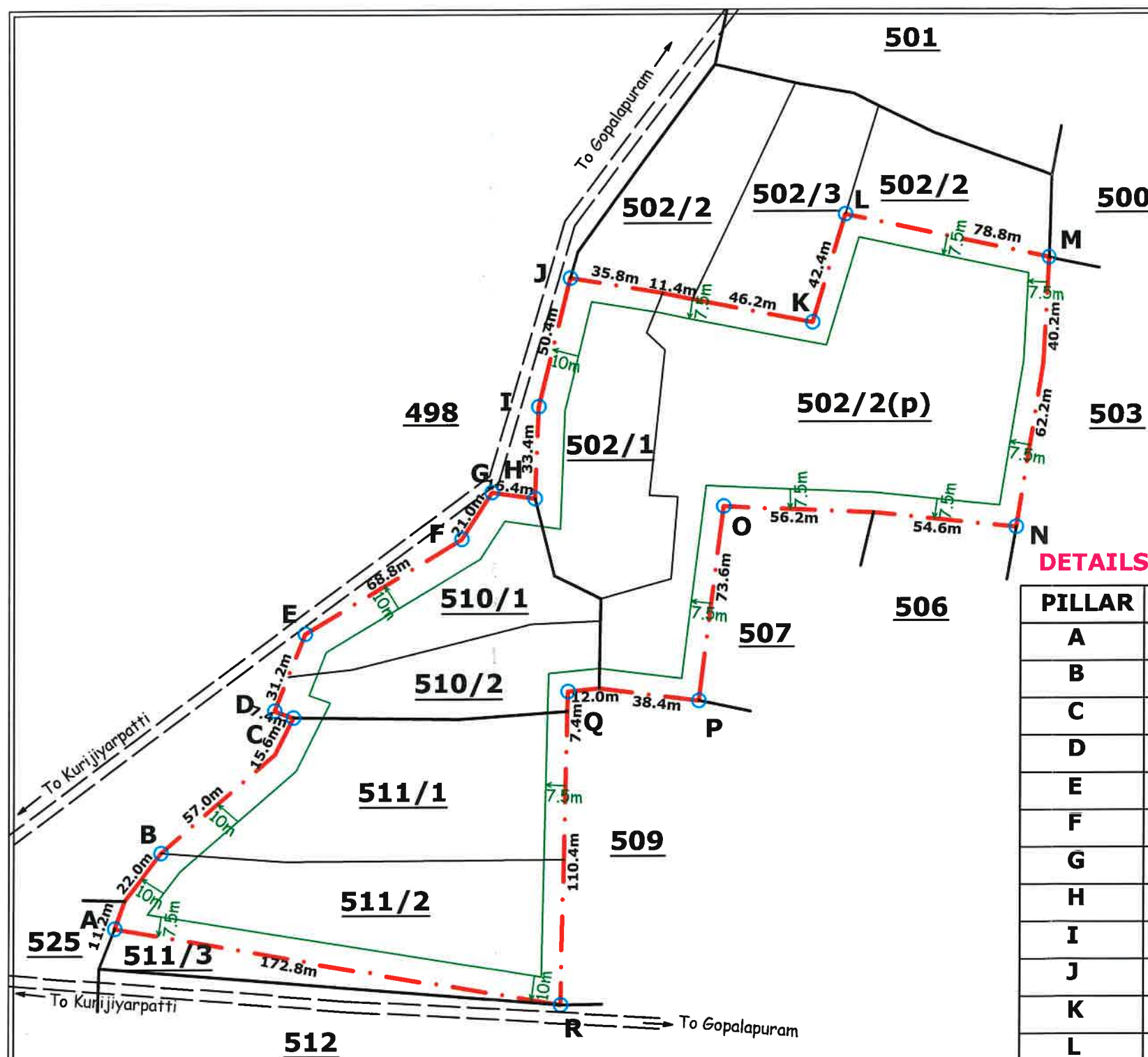




PLATE NO. III



DETAILS OF BOUNDARY PILLARS

PILLAR	LATITUDE	LONGITUDE
A	9° 21' 08.4"	77° 37' 14.5"
B	9° 21' 09.3"	77° 37' 15.1"
C	9° 21' 11.0"	77° 37' 16.8"
D	9° 21' 11.1"	77° 37' 16.5"
E	9° 21' 12.1"	77° 37' 16.9"
F	9° 21' 13.2"	77° 37' 18.9"
G	9° 21' 13.8"	77° 37' 19.2"
H	9° 21' 13.7"	77° 37' 19.8"
I	9° 21' 14.9"	77° 37' 19.8"
J	9° 21' 16.5"	77° 37' 20.2"
K	9° 21' 15.7"	77° 37' 23.2"
L	9° 21' 17.3"	77° 37' 23.7"
M	9° 21' 16.4"	77° 37' 26.0"
N	9° 21' 13.4"	77° 37' 25.6"
O	9° 21' 13.7"	77° 37' 22.2"
P	9° 21' 11.4"	77° 37' 21.9"
Q	9° 21' 11.3"	77° 37' 20.2"
R	9° 21' 07.5"	77° 37' 20.1"

NAME OF THE APPLICANT:

**SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.**

INDEX:-

LEASE APPLIED BOUNDARY	
SAFETY DISTANCE 7.5M & 10m from cartrack	
CART TRACK	
BOUNDARY PILLARS	A B C . .

PROPOSED QUARRY LOCATION :-

**DISTRICT : VIRUDHUNAGAR
TALUK : VEMBAKOTTAI
VILLAGE : GOPALAPURAM
S.F.Nos. : 502/1,2(p), 510/1,2 & 511/1,2
EXTENT : 4-04.00 HECTARE.**

S.F.Nos	EXTENT (Ha)
502/1	0-50.50
502/2(p)	1-54.50
510/1	0-35.50
510/2	0-30.00
511/1	0-66.50
511/2	0-67.00
TOTAL	4-04.00 Hectare

ROUGH STONE AND GRAVEL QUARRY

LEASE PLAN

SCALE:- 1: 2000

**ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.**

M. Dharmalingam
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
OP/MAS/260/2014/A



PLATE NO. IV

GEOLOGICAL RESERVES

MINERAL	SECTION	LENGTH [M]	WIDTH [M]	DEPTH [M]	VOLUME IN CUM	TOTAL VOLUME IN CUM
GRAVEL	PQ - AB	180	136	5.0	122400	2,32,800
	PQ - CD	184	120	5.0	110400	
ROUGH STONE	PQ - AB	180	136	30.0	734400	13,96,800
	PQ - CD	184	120	30.0	662400	
0.00M (M.S.L)	TOTAL GEOLOGICAL RESERVES				16,29,600 Cu.m.	

NAME OF THE APPLICANT:

SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.

INDEX:-

LEASE APPLIED BOUNDARY

SAFETY DISTANCE 7.5m
& 10m from carttrack

BOUNDARY PILLARS

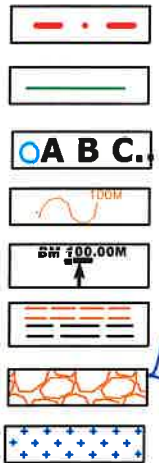
CONTOURS

BENCH MARK (M.S.L.)

APPROACH ROAD (CART TRACK)

GRAVEL

ROUGHSTONE



ROUGH STONE AND GRAVEL QUARRY

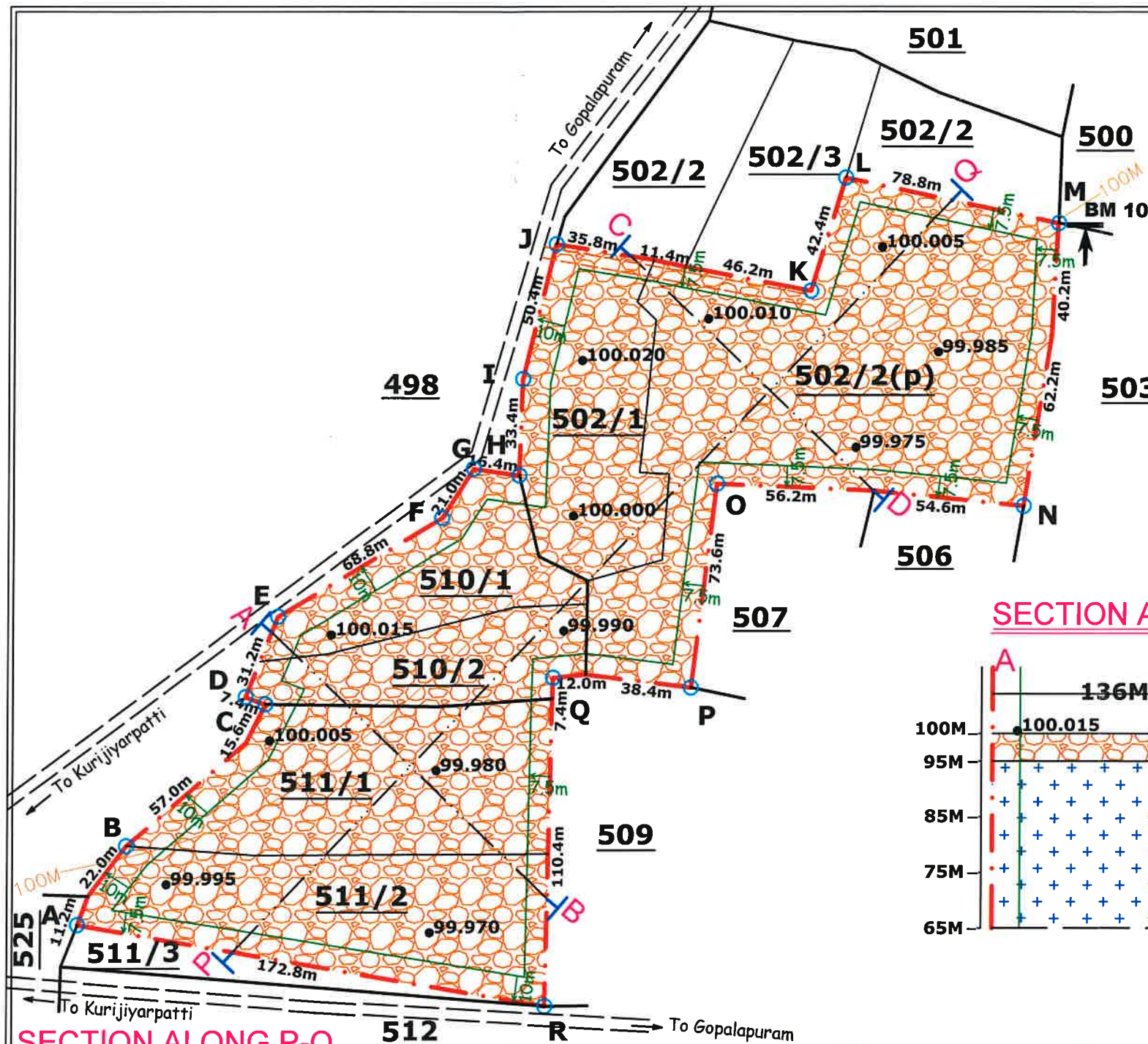
SURFACE CUM GEOLOGICAL PLAN & SECTIONS

PLAN SCALE:- 1: 2000

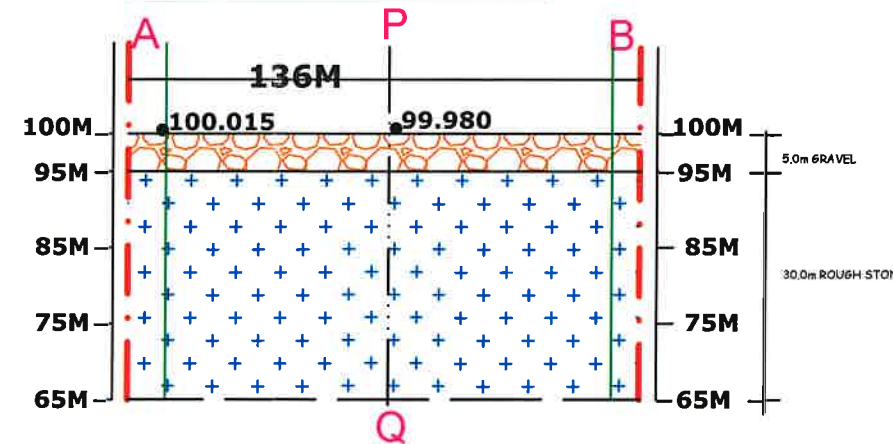
SECTION SCALE:- HOR- 1: 2000, VER- 1:1000

ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.

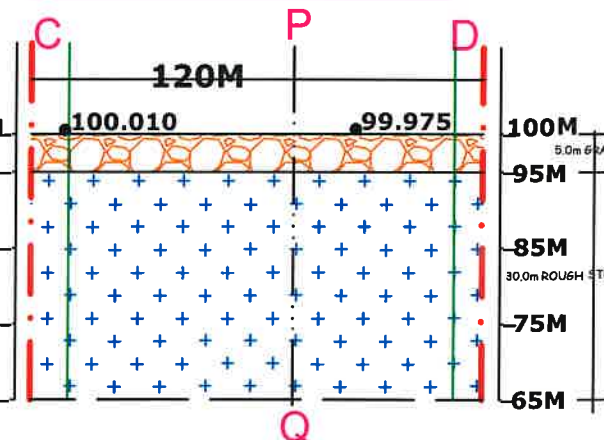
A. Dharmalingam
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M.Sc.,(Geol.) FCC.,(Mining)
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TAS / 260 / 2014 / A



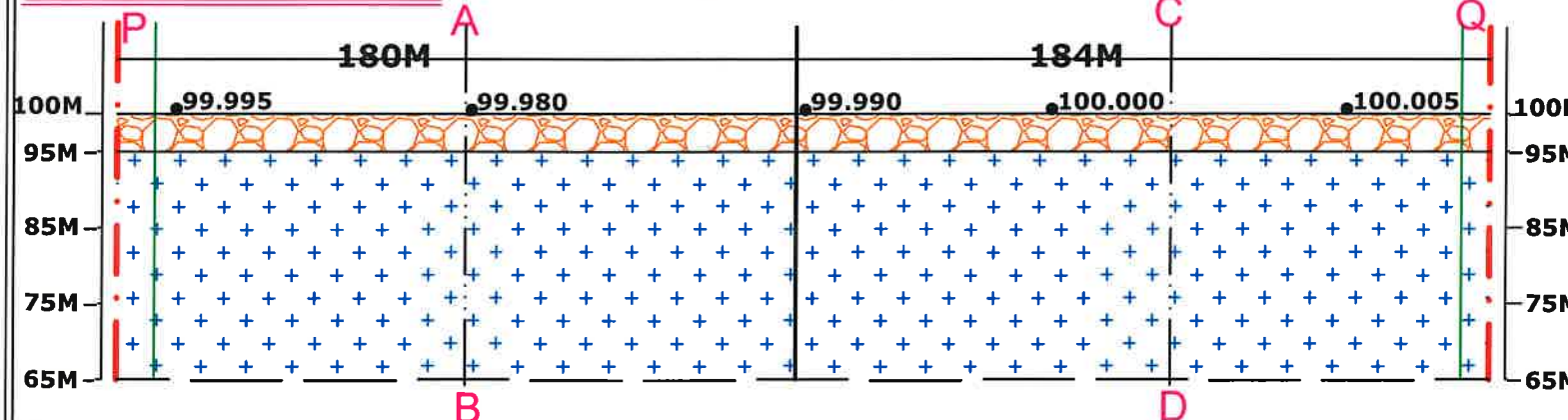
SECTION ALONG A-B

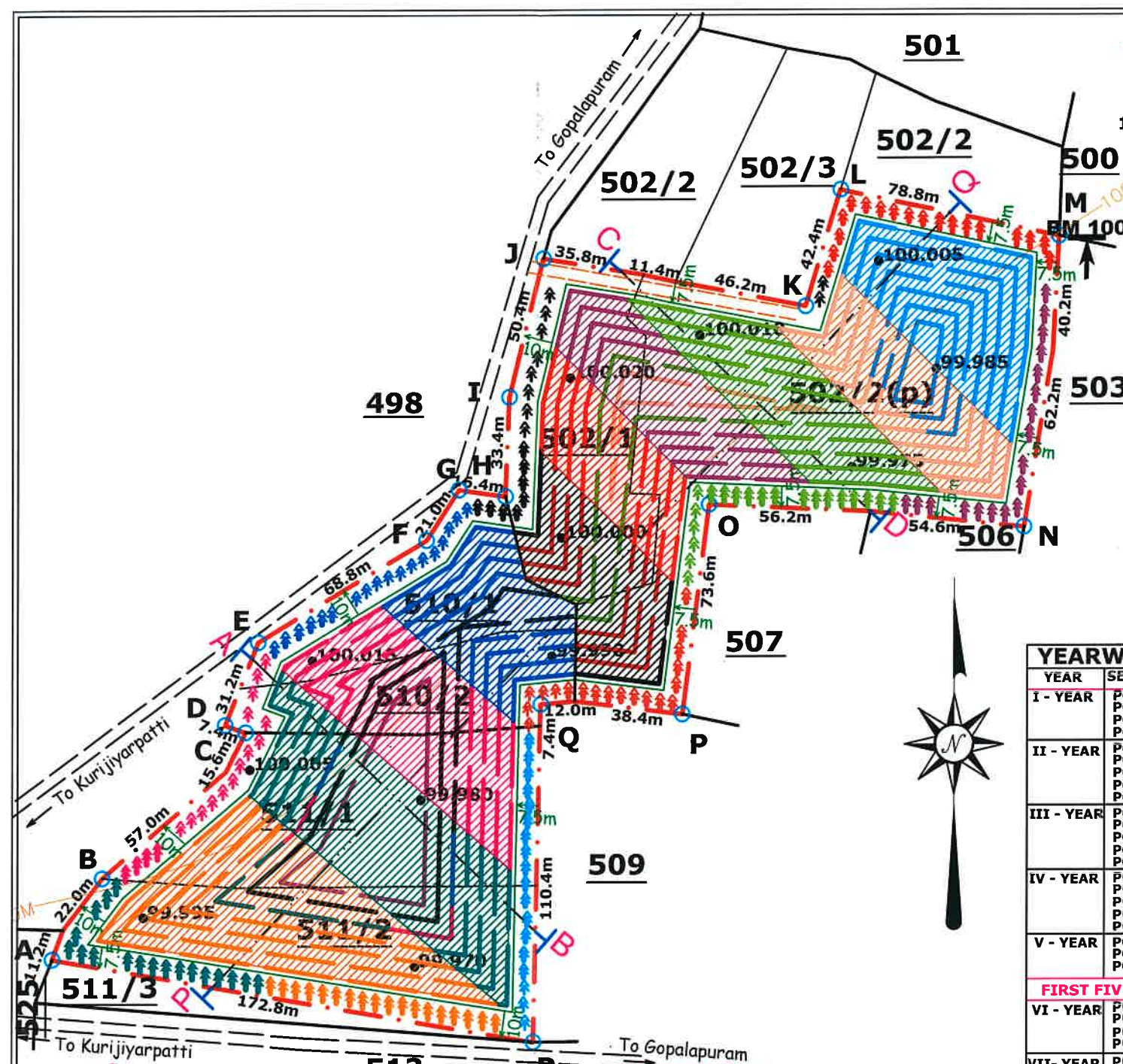


SECTION ALONG C-D

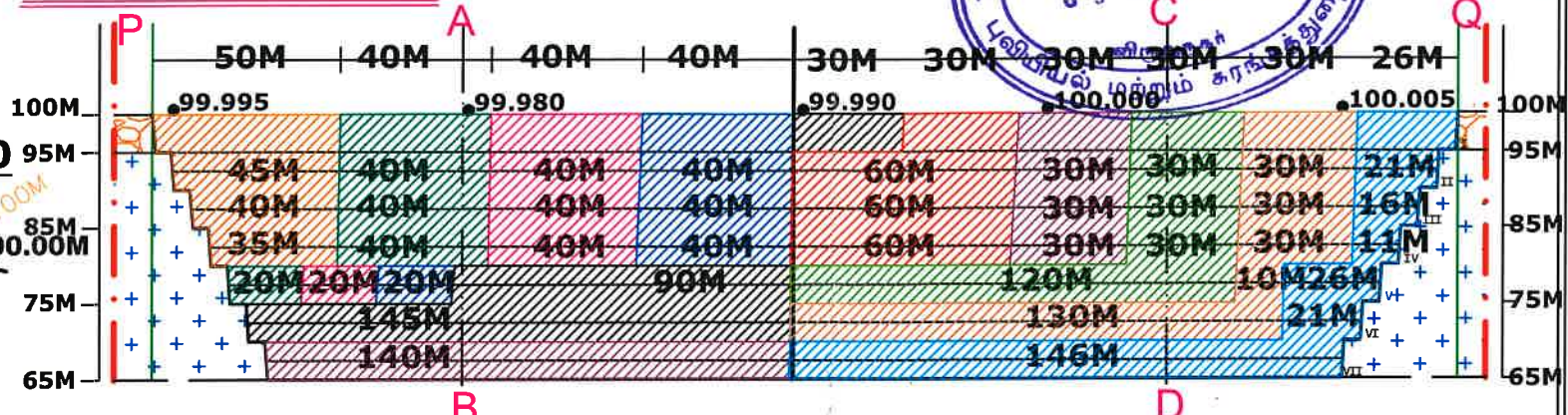


SECTION ALONG P-Q





SECTION ALONG P-Q



AFFORESTATION PROGRAMME

PLANTATION	TYPE	No of TREES	SPACING	AREA (Ha)	SURVIVAL
I - YEAR	NEEM	20	3m x 3m	0-01.8	80%
II - YEAR	NEEM	20	3m x 3m	0-01.8	80%
III - YEAR	NEEM	20	3m x 3m	0-01.8	80%
IV - YEAR	NEEM	20	3m x 3m	0-01.8	80%
V - YEAR	NEEM	20	3m x 3m	0-01.8	80%
VI - YEAR	NEEM	20	3m x 3m	0-01.8	80%
VII - YEAR	NEEM	20	3m x 3m	0-01.8	80%
VIII - YEAR	NEEM	20	3m x 3m	0-01.8	80%
IX - YEAR	NEEM	20	3m x 3m	0-01.8	80%
X - YEAR	NEEM	20	3m x 3m	0-01.8	80%
TOTAL PLANTATION		200	3m x 3m	0-18.0Ha	

YEARWISE PRODUCTION SCHEDULE						VOLUME IN CUM		TOTAL PRODUCTION IN CUM
YEAR	SECTION	BENCH	LENGTH [M]	WIDTH [M]	DEPTH [M]	GRAVEL	ROUGHSTONE	
I - YEAR	PQ - AB	I	50	118	5.0	29500	----	59300
	PQ - AB	II	45	108	5.0	---	24300)	
	PQ - AB	III	40	98	5.0	---	19600	
	PQ - AB	IV	35	88	5.0	---	15400)	
II - YEAR	PQ - AB	I	40	118	5.0	23600	----	66600
	PQ - AB	II	40	108	5.0	---	21600)	
	PQ - AB	III	40	98	5.0	---	19600	
	PQ - AB	IV	40	88	5.0	---	17600)	
	PQ - AB	V	20	78	5.0	---	7800)	
III - YEAR	PQ - AB	I	40	118	5.0	23600	----	66600
	PQ - AB	II	40	108	5.0	---	21600)	
	PQ - AB	III	40	98	5.0	---	19600	
	PQ - AB	IV	40	88	5.0	---	17600)	
	PQ - AB	V	20	78	5.0	---	7800)	
IV - YEAR	PQ - AB	I	40	118	5.0	23600	----	66600
	PQ - AB	II	40	108	5.0	---	21600)	
	PQ - AB	III	40	98	5.0	---	19600	
	PQ - AB	IV	40	88	5.0	---	17600)	
	PQ - AB	V	20	78	5.0	---	7800)	
V - YEAR	PQ - CD	I	30	102	5.0	15300	----	84400
	PQ - AB	V	90	78	5.0	---	35100)	
	PQ - AB	VI	145	68	5.0	---	49300)	
FIRST FIVE YEARS PRODUCTION (Ist - Vth YEAR)						115600	343500	4,59,100
VI - YEAR	PQ - CD	I	30	102	5.0	15300	----	73800
	PQ - CD	II	60	92	5.0	---	27600)	
	PQ - CD	III	60	82	5.0	---	24600	
	PQ - CD	IV	60	72	5.0	---	21600)	
VII - YEAR	PQ - CD	I	30	102	5.0	15300	----	77500
	PQ - CD	II	30	92	5.0	---	13800)	
	PQ - CD	III	30	82	5.0	---	12300	
	PQ - CD	IV	30	72	5.0	---	10800)	
	PQ - AB	VII	140	58	5.0	---	40600)	
VIII - YEAR	PQ - CD	I	30	102	5.0	15300	----	74100
	PQ - CD	II	30	92	5.0	---	13800)	
	PQ - CD	III	30	82	5.0	---	12300	
	PQ - CD	IV	30	72	5.0	---	10800)	
	PQ - CD	V	120	62	5.0	---	37200)	
IX - YEAR	PQ - CD	I	30	102	5.0	15300	----	74100
	PQ - CD	II	30	92	5.0	---	13800)	
	PQ - CD	III	30	82	5.0	---	12300	
	PQ - CD	IV	30	72	5.0	---	10800)	
	PQ - CD	V	10	62	5.0	---	3100)	
	PQ - CD	VI	130	52	5.0	---	33800)	
X - YEAR	PQ - CD	I	26	102	5.0	13260	----	64360
	PQ - CD	II	21	92	5.0	---	9660)	
	PQ - CD	III	16	82	5.0	---	6560)	
	PQ - CD	IV	11	72	5.0	---	3960)	
	PQ - CD	V	26	62	5.0	---	8060)	
	PQ - CD	VI	21	52	5.0	---	5460)	
	PQ - CD	VII	146	42	5.0	---	30660)	
NEXT FIVE YEARS PRODUCTION (Vith - Xth YEAR)						74460	363560	4,38,020
TOTAL TEN YEARS PRODUCTION						190060	707060	8,97,120 Cu.m.

NAME OF THE APPLICANT:
SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.

- INDEX:-**
- LEASE APPLIED BOUNDARY
 - SAFETY DISTANCE 7.5M & 10m from cartrack
 - I - YEAR EXCAVATION
 - II - YEAR EXCAVATION
 - III - YEAR EXCAVATION
 - IV - YEAR EXCAVATION
 - V - YEAR EXCAVATION
 - VI - YEAR EXCAVATION
 - VII - YEAR EXCAVATION
 - VIII - YEAR EXCAVATION
 - IX - YEAR EXCAVATION
 - X - YEAR EXCAVATION

ROUGH STONE AND GRAVEL QUARRY
LAND USE CUM YEARWISE
PLAN & SECTIONS

PLAN SCALE:- 1: 2000
SECTION SCALE:- HOR- 1: 2000, VER- 1:1000

ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.

M. Dharmalingam
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Recognised Qualified Person
DP/MAS/260/2014/A





PLATE NO. VII

500m Radius from the proposed quarry (S. Devaraj applied area)

Quarries	SL.No.	Name of owner	Village name	Survey no	Extent (Ha)	Distance(m)
A. Existing	1.	A. Seethakumar	Gopalapuram	533/1234	2-12.5	30
B. Abandoned	2.	R. Vengadapathi	Gopalapuram	532/36	1-14.5	435
C. present proposed	---	---	---	502/1,2p	nil	---
	3.	S. Devaraj	Gopalapuram	510/1,2	4-04.0	applied
				511/1,2		
TOTAL EXTENT (Ha)					7-31.0 Ha.	

NAME OF THE APPLICANT:

SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.

DISTRICT : VIRUDHUNAGAR

TALUK : VEMBAKOTTAI

VILLAGE : GOPALAPURAM

S.F.Nos. : 502/1,2(p), 510/1,2 &

EXTENT : 4-04.00 HECTARE. 511/1,2

INDEX:-

LEASE APPLIED BOUNDARY



300M RADIUS LINE



500M RADIUS



WIND DIRECTION



APPROACH ROAD



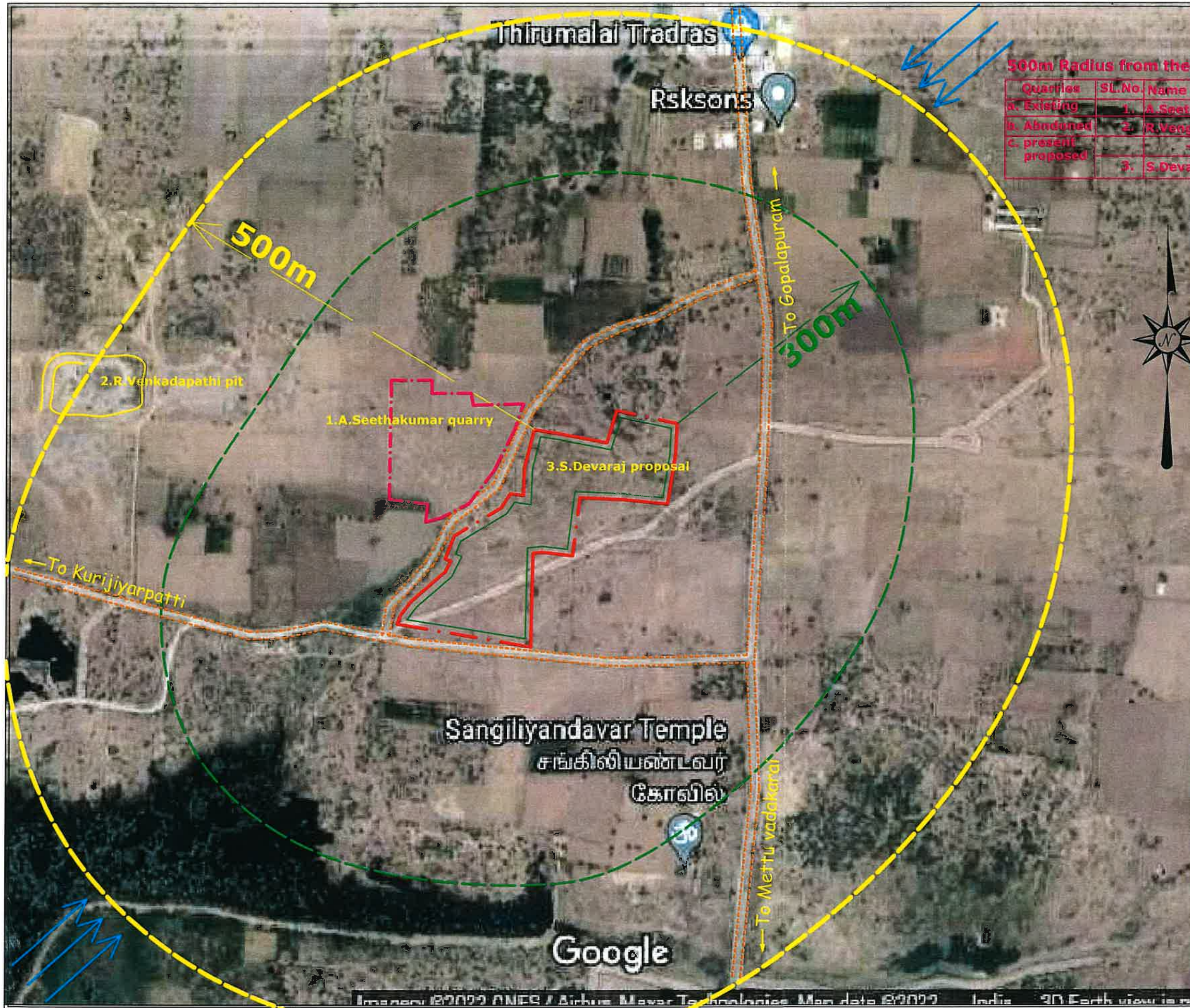
ROUGH STONE AND GRAVEL QUARRY

ENVIRONMENTAL PLAN

SCALE:- 1: 5000

**ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.**

M. Dharmalingam
M. DHARMALINGAM
M.Sc., (Geol.) FCC., (Mining)
Recognised Qualified Person
ROP/MAS/260/2014/A





BASE LINE DATA FOR WATER BODIES

SL.No.	SL.No.	DIRECTION	DISTANCE (M)	DEPTH (M)	WATER LEVEL
1.	Well	North	200	15	dry
2.	Well	North	100	14	dry
3.	Well	East	185	12	dry
4.	Well	East	300	15	dry
5.	Well	East	165	14	dry
6.	kulam	South	60	0.5	dry
7.	Well	South	235	12	dry
8.	Well	South	155	14	dry
9.	Well	South	165	14	dry

NAME OF THE APPLICANT:

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CHENNAI, TAMILNADU - 600 026.

DISTRICT : VIRUDHUNAGAR

TALUK : VEMBAKOTTAI

VILLAGE : GOPALAPURAM

S.F.Nos. : 502/1,2(p), 510/1,2 & 511/1,2

EXTENT : 4-04.00 HECTARE.

INDEX:- Static water table in winter - 45M
in summer - 50M

- AREA APPLIED FOR QUARRY LEASE
- APPROACH ROAD
- 300M RADIUS LINE
(No well, No historical monuments)
- 500M RADIUS LINE
(No habitations, No temples, No school with in 500m &
No other structures like culverts, head works, bridges etc.,)

ROUGH STONE AND GRAVEL QUARRY

VILLAGE MAP

showing environmental features

SCALE:- 1: 5000

ALL PLANS AND SECTIONS ARE PREPARED
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M. DHARMALINGAM
M.Sc., (Geol. FCC., (Mining)
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MAS/260/2014/A

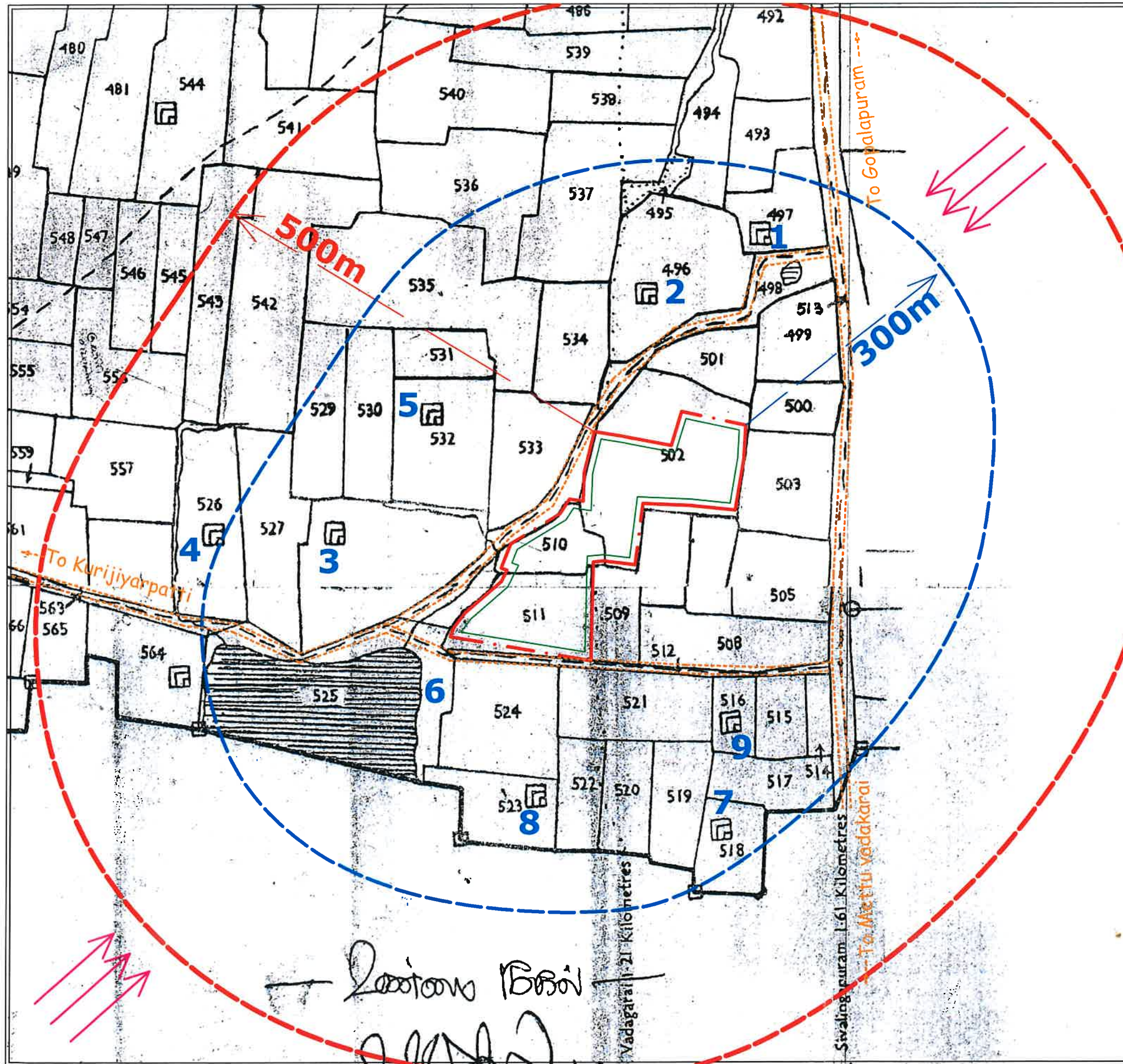
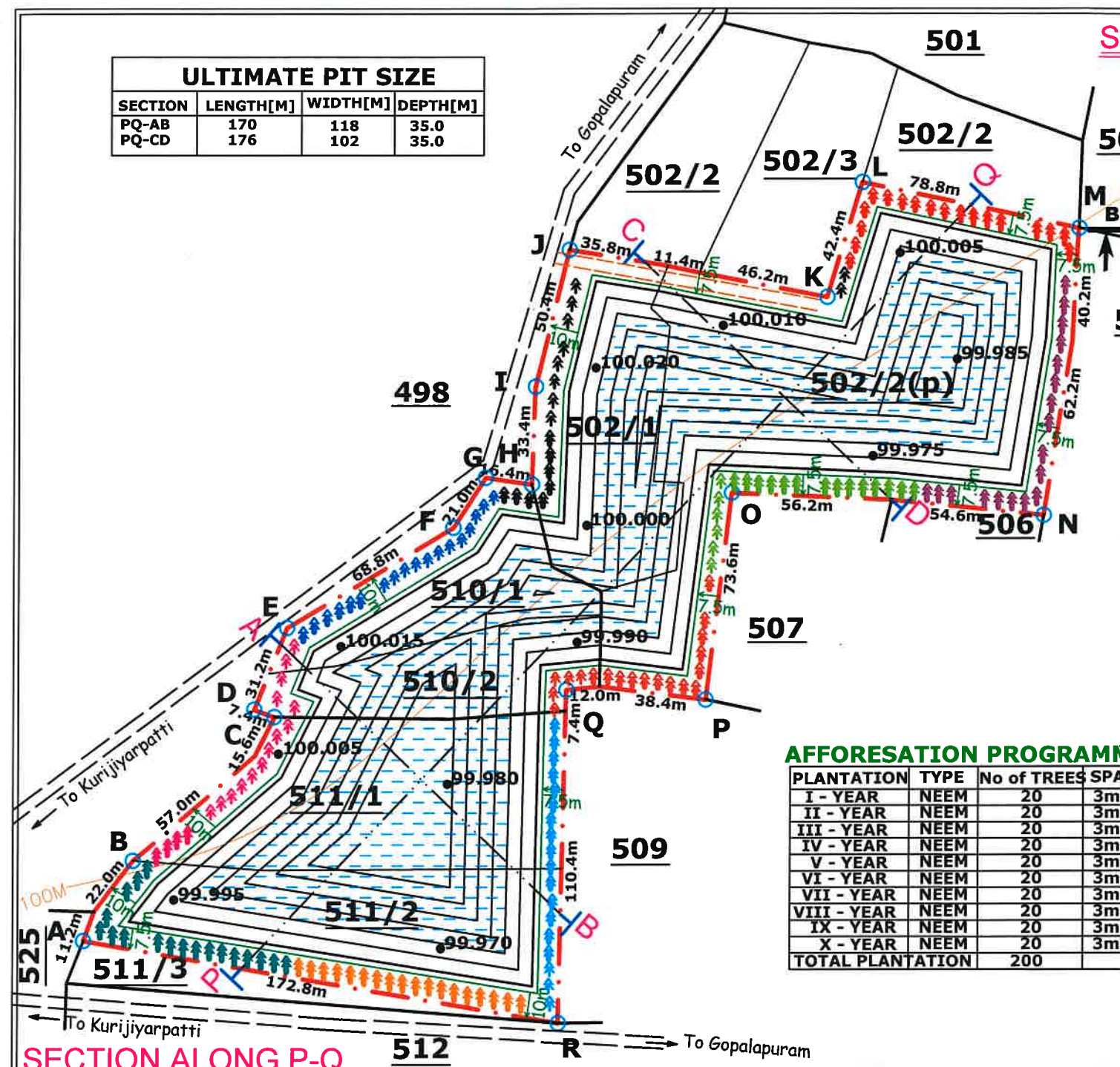


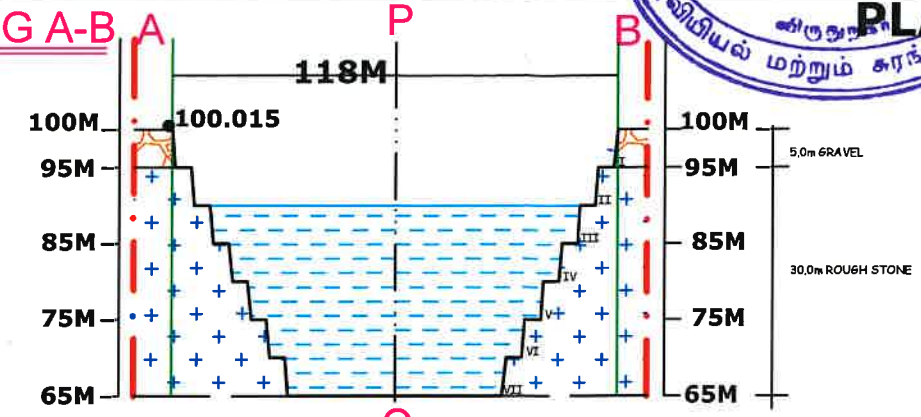


PLATE NO.VIII

ULTIMATE PIT SIZE			
SECTION	LENGTH[M]	WIDTH[M]	DEPTH[M]
PQ-AB	170	118	35.0
PQ-CD	176	102	35.0



SECTION ALONG A-B



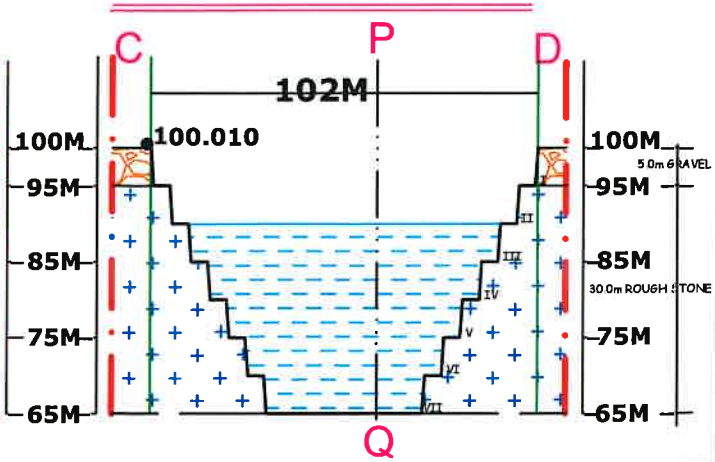
PRESENT MINING LAND USE PLANNING (BREAKUP ALONG WITH GREENBELT ETC.;

SL.No.	LAND USE CATEGORY	AT THE END OF LIFE OF MINE
1.	Area under quarrying	3-80.0 hectare
2.	Infrastructure & Road	0-02.0 hectare
3.	Fencing	0-04.5 hectare
4.	Afforestation (greenbelt & plantation)	0-18.0 hectare
5.	Unutilized area	0-00.0 hectare
TOTAL		4-04.5 Hectare.

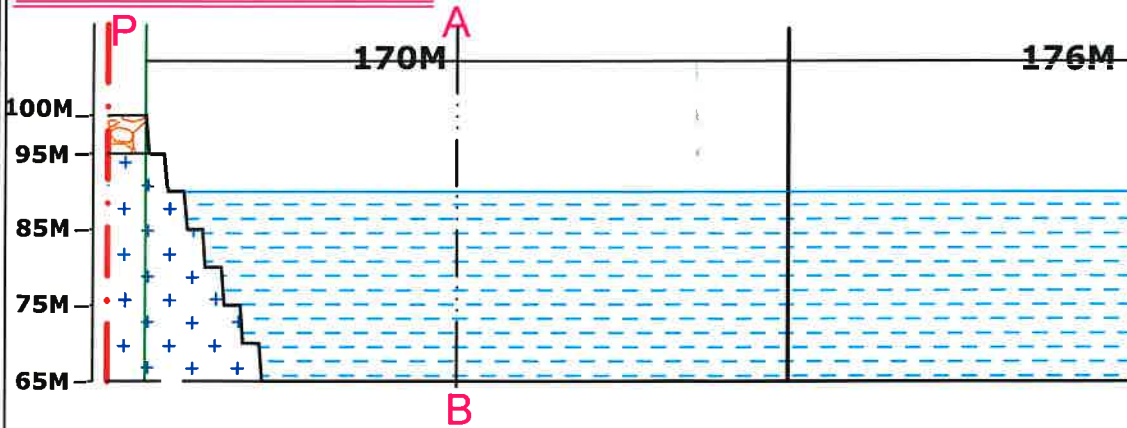
AFFORESTATION PROGRAMME

PLANTATION	TYPE	No of TREES	SPACING	AREA (Ha)	SURVIVAL
I - YEAR	NEEM	20	3m x 3m	0-01.8	80%
II - YEAR	NEEM	20	3m x 3m	0-01.8	80%
III - YEAR	NEEM	20	3m x 3m	0-01.8	80%
IV - YEAR	NEEM	20	3m x 3m	0-01.8	80%
V - YEAR	NEEM	20	3m x 3m	0-01.8	80%
VI - YEAR	NEEM	20	3m x 3m	0-01.8	80%
VII - YEAR	NEEM	20	3m x 3m	0-01.8	80%
VIII - YEAR	NEEM	20	3m x 3m	0-01.8	80%
IX - YEAR	NEEM	20	3m x 3m	0-01.8	80%
X - YEAR	NEEM	20	3m x 3m	0-01.8	80%
TOTAL PLANTATION		200		0-18.0Ha	

SECTION ALONG C-D



SECTION ALONG P-Q



NAME OF THE APPLICANT:

SRI. S. DEVARAJ, S/o. SRI. K.R. SUBBIAH,
19/29, G2, KRISHNAN COLONY,
NERKUNDRAM PATHAI, VADAPALANI,
CHENNAI, TAMILNADU - 600 026.

INDEX:-

- LEASE APPLIED BOUNDARY
- SAFETY DISTANCE 7.5M & 10m from cartrack
- BOUNDARY PILLARS
- APPROACH ROAD
- BENCH MARK
- CONTOURS
- LAYOUT OF MINE WORKING (FUTURE WATER RESERVOIR)

ROUGH STONE AND GRAVEL QUARRY
PROGRESSIVE MINE CLOSURE PLAN

SCALE:- 1: 2000

ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.

M. DHARMALINGAM
M.Sc., (Geol.) FCC., (Mining)
Recognised Qualified Person
POP/260/2014/A