DRAFT EIA / EMP REPORT

FOR

ROUGH STONE AND GRAVEL QUARRY

Extent	**1.215 Ha**
Land Type	**Patta Land**
Production for 5 years	**Roughstone – 87,982.25 m^3** **Gravel – 14,978.75 m^3**
Depth	**20m bgl**
Lease Period	**5 years**

SURVEY NO -202/1A2

VILLAGE – APPAINAICKENPATTI, TALUK – VEMBAKOTTAI TALUK,

DISTRICT – VIRUDHUNAGAR, STATE – TAMILNADU.

- **Terms of Reference issued by SEIAA, Tamil Nadu vide SEIAA-TN/F.No.8925/SEAC/TOR-1118/2022 dated 23.03.2022**
- **Baseline Monitoring Period – Winter Season (December 2021 to February 2022)**

PROJECT PROPONENT

THIRU G.KANIRAJ

NO.60C, INDRA NAGAR, THIRUVENKADAM, SANKARANKOVIL TALUK, TENKASI DISTRICT – 627719.

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,

DECEMBER 2022

REVISIONS OF EIA/EMP REPORT

Revision number	Report Status	Date of submission
00/DEC/22	Draft EIA /EMP Report	31.12.2022

Environmental Impact Assessment & Environmental Management Plan Report for Rough Stone and Gravel Quarry of Thiru G.Kaniraj at Survey Nos.202/1A2 over an area of 1.215Ha in Appainaickenpatti village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu was prepared by Creative Engineers & Consultants and authorized for submission by Mr. P.Giri, EIA Coordinator, CEO, of Creative Engineers & Consultants on 31.12.2022 after due review by the personnel and consultation with Thiru G.Kaniraj. Current Revision number of the EIA/EMP report is 00/DEC/22, signifying as per the revision mentioned in the above table that this is a draft EIA/EMP report.

PROJECT PROPONENT DECLARATION

I, Thiru G.Kaniraj received ToR under EIA Notification 2006 from SEIAA, Tamil Nadu vide their SEIAA-TN/F.No.8925/SEAC/ToR-1118/2022 dated 23.03.2022 for Rough stone and Gravel Quarry at Survey Nos.202/1A2 over an area of 1.215 Ha in Appainaickenpatti 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 23.03.2023.

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 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 our knowledge.

Thiru G.Kaniraj

Place: Virudhunagar

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. The Certificate of Reaccreditation is issued with validity up to 23.03.2023.

I, Thiru G.Kaniraj received ToR under EIA Notification 2006 from SEIAA, Tamil Nadu vide their SEIAA-TN/F.No.8925/SEAC/ToR-1118/2022 dated 23.03.2022 for Roughstone and Gravel Quarry at Survey Nos.202/1A2 over an area of 1.215 Ha in Appainaickenpatti 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

9/4b, Bharathwajar Street, East Tambaram, Chennai – 600 059.
Ph : 22395170, 9444133619, fax : 91-44-22396643.
e-mail : cecgiri@yahoo.com, web : www.creativeengineers.co.in

Annexure – VII

Declaration by Experts contributing to the EIA Report for

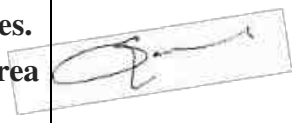
Rough Stone and Gravel Quarry of Thiru G.Kaniraj at S.F.No. 202/1A2 over an area of 1.215 Ha in Appanayakkanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu

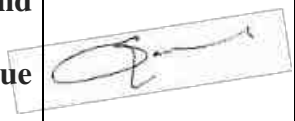
I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

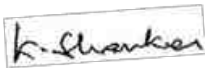
EIA coordinator:
Name: **P.Giri**
Signature and Date:
Period of involvement: **December 2021 onwards**
Contact information: **09444133619, 044-22395170**

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: December 2021 onwards**	
		B.Swamynathan	• **Data interpretation of Micro meteorological data for wind rose.** • **Identification of polluting source and suggestion of suitable mitigation measures.** **Period: March 2022 onwards**	
2	WP*	**V.Sivaranjani**	• **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: July 2022 onwards**	
		G.Sandhya	• **Identification of impact of the project on the water quality and suggestion of suitable mitigation measures.** • **Preparation of sections relevant to WP functional area in the EIA/EMP report.** **Period: July 2022 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: December 2021 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 2022 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 2022 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 2022 onwards**	
7	GEO*	**K.Shankar**	• **Study of geology of the ML area and the surrounding areas.** • **Provide details about Mineral composition** **Period: March 2022 onwards**	
8	SC*	**B.Swamynathan**	• **Study of soil profile** • **Assessment of Impact on soil and suggesting plantation scheme.** **Period: March 2022 onwards**	
9	AQ*	**V.Sivaranjani**	• **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** **Period: July 2022 onwards**	
		G.Sandhya	• **Calculation of the emission rates** • **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: July 2022 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: December 2021 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 2022 onwards**	
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 2022 onwards**	

*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 **Rough Stone and Gravel Quarry of Thiru G.Kaniraj at S.F.No. 202/1A2 over an area of 1.215 Ha in Appanayakkanpatti 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: 

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/2023/RA 0187 & date Dec 18th, 2020**

Quality Council of India

National Accreditation Board for Education & Training

CERTIFICATE OF ACCREDITATION

Creative Engineers and Consultants, Chennai

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

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

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals- opencast only	1	1 (a) (i)	A
2	Thermal power plants	4	1 (d)	A
3	Mineral beneficiation	7	2 (b)	A
4	Cement plants	9	3 (b)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Nov 20, 2020 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/20/1575 dated Dec 18, 2020. The accreditation needs to be renewed before the expiry date Creative Engineers and Consultants, Chennai following due process of assessment.

Sr. Director, NABET
Dated: Dec 18, 2020

Certificate No.
NABET/EIA/2023/RA 0187

Valid till
March 23, 2023

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

CONTENTS

CONTENTS

CHAPTER-WISE CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ANNEXURES

* * * * * * * *

TERMS OF REFERENCE & ITS COMPLIANCE

TMT.P.RAJESWARI, I.F.S.,
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY – TAMIL NADU
3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai-15.
Phone No. 044-24359973
Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.8925/ToR-1118/2022 Dated:23.03.2022.

To

Thiru.G.Kaniraj
S/o.Gurusamy
No,60C, Indra Nagar
Thiruvenkadam
Sankarankovil Taluk
Tenkasi District-627719.

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the proposed Rough stone & gravel quarry lease over an extent of 1.21.5Ha in S.F.No.202/1A2 Appainaickenpatti Village, Vembakottai Taluk, Viruthunagar District,Tamil Nadu by Thiru. G. Kaniraj - 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/70518/2021 Dt. 13.1.2022
2. Your application submitted for Terms of Reference dated: 28.01.2022.
3. Minutes of the 251st SEAC meeting held on 04.3.2022.
4. Minutes of the 495th Authority meeting held on 23.03.2022.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

MEMBER SECRETARY
SEIAA-TN

The proponent, Thiru.G.Kaniraj has submitted application for Terms of Reference (ToR) with public Hearing on 28.01.2022, in Form-I, Pre- Feasibility report for the proposed Rough stone & gravel quarry lease over an extent of 1.21.5 Ha in S.F.No.202/1A2 Appainaickenpatti Village, Vembakottai Taluk, Viruthunagar District, Tamil Nadu.

Discussion by SEAC and the Remarks:-

Proposed Rough stone & gravel quarry lease over an extent of 1.21.5 Ha in S.F.No.202/1A2 Appainaickenpatti Village, Vembakottai Taluk, Viruthunagar District,Tamil Nadu by Thiru. G. Kaniraj - For Terms of Reference.

(SIA/TN/MIN/70518/2021 Dt. 13.1.2022)

The proposal was placed in 251st SEAC meeting held on 4.3.2022. The project proponent has given a detailed presentation. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The project proponent gave detailed presentation. SEAC noted the following:

1. The Project Proponent Thiru. G. Kaniraj has applied for Terms for Reference for the proposed Rough stone & gravel quarry lease over an extent of 1.21.5 Ha in S.F.No.202/1A2 Appainaickenpatti Village, Vembakottai Taluk, Viruthunagar District,Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Production for the five years states that total quantity should not exceed 87,982.25$m^3$of Rough stone & 14,978.75 m^3 of gravel with an ultimate depth of mining is 20m (existing depth 6m) below ground level.

Based on the presentation made by the proponent and the documents furnished, SEAC decided to **recommend the proposal for the grant of Terms of Reference (TOR) with Public Hearing** for the production for the five years states that total quantity should not exceed 87,982.25 m^3 of Rough stone & 14,978.75m^3 of gravel with an ultimate depth of mining is 20m (existing depth 6m) below ground level, 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. The Proponent shall carry out the cumulative & comprehensive impact study due to mining operations carried out in the quarry cluster specifically with reference to the environment in terms of air pollution, water pollution & health impacts, accordingly the Environment Management plan should be prepared keeping the concerned quarry and the surrounding

MEMBER SECRETARY
SEIAA-TN

habitations in the mind.

2. The certified existing EC compliance report shall be included in the EIA Report.
3. The entire Cluster of mine lease area along with green belt shall be video graphed through Drone and submit the same along with EIA report.
4. 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,
   a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
   b) Quantity of minerals mined out.
   c) Highest production achieved in any one year
   d) Detail of approved depth of mining.
   e) Actual depth of the mining achieved earlier.
   f) Name of the person already mined in that leases area.
   g) If EC and CTO already obtained, the copy of the same shall be submitted.
   h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
5. 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).
6. 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.
7. 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.
8. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.

MEMBER SECRETARY
SEIAA-TN

9. 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.
10. 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.
11. 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.
12. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
13. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
14. The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No. 981/2016, M.A.No.982/2016 & M.A.No.384/2017).
15. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix** in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
16. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper espacement as per the advice of local forest

MEMBER SECRETARY
SEIAA-TN

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.

17. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
18. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.
19. 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.
20. 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.
21. 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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.

Appendix

List of Native Trees Suggested for Planting

1. ***Aegle marmelos*** – Vilvam
2. ***Adenaanthera pavonina*** - Manjadi
3. ***Albizia lebbeck*** – Vaagai
4. ***Albizia amara*** - Usil
5. ***Bauhinia purpurea*** - Mantharai
6. ***Bauhinia racemosa*** - Aathi
7. ***Bauhinia tomentosa*** – Iruvathi
8. ***Buchanania aillaris*** - Kattuma
9. ***Borassus flabellifer*** - Panai
10. ***Butea monosperma*** - Murukka maram
11. ***Bobax ceiba*** – Ilavu, Sevvilavu
12. ***Calophyllum inophyllum*** - Punnai

MEMBER SECRETARY
SEIAA-TN

13. ***Cassia fistula*** - Sarakondrai
14. ***Cassia roxburghii***- Sengondrai
15. ***Chloroxylon sweitenia*** - Purasa maram
16. ***Cochlospermum religiosum*** – Kongu, Manjal Ilavu
17. ***Cordia dichotoma*** – Mookuchali maram
18. ***Creteva adansonii*** – Mavalingum
19. ***Dillenia indica*** – Uva, Uzha
20. ***Dillenia pentagyna*** – Siru Uva, Sitruzha
21. ***Diospyros ebenum*** - Karungali
22. ***Diospyros chloroxylon*** – Vaganai
23. ***Ficus amplissima*** – Kal Itchi
24. ***Hibiscus tiliaceous*** – Aatru poovarasu
25. ***Hardwickia binata*** – Aacha
26. ***Holoptelia integrifolia*** - Aayili
27. ***Lannea coromandelica*** - Odhiam
28. ***Lagerstroemia speciosa*** - Poo Marudhu
29. ***Lepisanthus tetraphylla*** - Neikottai maram
30. ***Limonia acidissima*** - Vila maram
31. ***Litsea glutinosa*** –Pisin pattai
32. ***Madhuca longifolia*** - Illuppai
33. ***Manilkara hexandra*** – Ulakkai Paalai
34. ***Mimusops elengi*** - Magizha maram
35. ***Mitragyna parvifolia*** - Kadambu
36. ***Morinda pubescens*** – Nuna
37. ***Morinda citrifolia*** – Vellai Nuna
38. ***Phoenix sylvestre*** - Eachai
39. **Pongamia pinnata** – Pungam
40. **Premna mollissima** – Munnai
41. **Premna serratifolia** – Narumunnai
42. **Premna tomentosa** - Purangai Naari, Pudanga Naari
43. **Prosopis cinerea** - Vanni maram
44. **Pterocarpus marsupium** - Vengai

MEMBER SECRETARY
SEIAA-TN

45. **Pterospermum canescens** – Vennangu, Tada
46. **Pterospermum xylocarpum** - Polavu
47. **Puthranjiva roxburghii** – Puthranjivi
48. **Salvadora persica** – Ugaa Maram
49. **Sapindus emarginatus** - Manipungan, Soapu kai
50. **Saraca asoca** - Asoca
51. **Streblus asper** - Piraya maram
52. **Strychnos nuxvomica** – Yetti
53. **Strychnos potatorum** - Therthang Kottai
54. **Syzygium cumini** - Naval
55. **Terminalia bellerica** - Thandri
56. **Terminalia arjuna** - Ven marudhu
57. **Toona ciliate** – Sandhana vembu
58. **Thespesia populnea** - Puvarasu
59. **Walsura trifoliata** – valsura
60. **Wrightia tinctoria** - Vep

Discussion by SEIAA and the Remarks:-

The subject was placed in the 495th Authority meeting held on 23.03.2022. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal condition in addition to the following conditions:

1. 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.
2. 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.

MEMBER SECRETARY
SEIAA-TN

3. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
4. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
5. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
6. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
7. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
8. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
9. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.
10. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.
11. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
12. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.
13. The project proponent shall study and furnish the impact of project on plantations in adjoing patta lands, Horticulture, Agriculture and livestock.
14. The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.
15. 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.
16. 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.

MEMBER SECRETARY
SEIAA-TN

17. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
18. The project proponent shall detailed study on impact of quarry on Devanadi (Nikshopa Nadi) in 90m and Vaippar River in 320m (NE) are located.
19. The project proponent shall furnish the impact on other odai may be studied.
20. The project proponent shall furnish the permission from PWD, WRD for operating quarry in this area.

A. STANDARD TERMS OF REFERENCE

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

MEMBER SECRETARY
SEIAA-TN

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

MEMBER SECRETARY
SEIAA-TN

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

MEMBER SECRETARY
SEIAA-TN

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

MEMBER SECRETARY
SEIAA-TN

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

MEMBER SECRETARY
SEIAA-TN

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

MEMBER SECRETARY
SEIAA-TN

the Ministry shall also be filled and submitted.

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

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

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

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

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

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

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

MEMBER SECRETARY
SEIAA-TN

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

MEMBER SECRETARY
SEIAA-TN

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.

Rajendra.P

MEMBER SECRETARY
SEIAA-TN

- 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.

MEMBER SECRETARY
SEIAA-TN

Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Viruthunagar District.
7. The EO/BDO, Appainaickenpatti Village, Vembakottai Taluk, Viruthunagar District
8. Stock File.

TOR COMPLIANCE

S.No	ToR Points	Reply	Pg. No
A. ToR in Addition to Standard ToR			
1.	The Proponent shall carry out the cumulative & comprehensive environmental impact assessment study due to mining operations carried out in the quarry cluster specifically with reference to the environment in terms of air pollution, water pollution, & health impacts, and accordingly the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	• **The details of other quarries located in 500m radius of the project is provided in Annexure-12. The baseline monitoring carried out for this project reflects the cumulative impact of this existing quarry.** **The identification of impact due to air, water, health impacts etc. has been carried out in Chapter-IV. The environmental management plan has been provided elaborately in Chapter-X.**	**A-27** **4-1** **10-1**
2.	The certified existing EC compliance report shall be included in the EIA Report.	**Under process**	**-**
3.	The entire Cluster of mine lease area along with green belt shall be video graphed through Drone and submit the same along with EIA report.	**Under process**	**-**
4	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 a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? b) Quantity of minerals mined out. c) Highest production achieved in any one year d) Detail of approved depth of mining. e) Actual depth of the mining achieved earlier.	• **Quarrying in this lease area was earlier carried out by G. Kaniraj for the period of 06.10.2016 to 05.10.2021 with the proceeding no. KV1/33631/2013 dated 16.09.2016** • **Environmental clearance for the earlier lease area obtained from SEIAA-TN/F.NO.3260/EC/1(a)/2629/2015 dated 05.01.2016 for Rough stone blue metal & Gravel quarrying at SF no 202/1A2, Appainaickanpatti village, Vembakottai taluk, Virudhunagar District, Tamil Nadu over 1.21.5 Ha of the lease area.** • **The details of the workings of earlier quarry are provided vide letter from Assistant Director, Geology & Mining,**	**2-11**

	f) Name of the person already mined in that leases area. g) If EC and CTO already obtained, the copy of the same shall be submitted. h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	**Virudhunagar vide Roc.No.KV1/1582/2021 dated 26.10.2021 (Annexure-13)**	
5	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.**	**2-6** **3-2**
6	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.	• **Photographs of the site are provided in Chapter-II.** • **Besides, good plantation will also be carried out in the safety zone. Green netting will be carried out around the lease periphery on the other sides.**	**2-7**
7	The Project Proponent shall provide the details of geological 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 proposed mitigation measures for the same.	• **The details of the geological and mineable reserves are provided in Table No.2.3, Chapter-II.** • **The mining method will be Opencast semi mechanized(Without blasting) mining using drilling, excavation through excavator & mineral transport through tippers.** • **The production schedule during plan period is given in Table No.2.7, Chapter-II.** • **Anticipated Impacts of the mining operations and mitigation measures are discussed elaborately in Chapter-IV.**	**2-9** **2-10** **4-1**

8	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	• **The organization chart has been provided in Figure No.10.1, Chapter-X.**	**10-3**
9	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 aetual 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**
10	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 Winter Season (December 2021 to February 2022) and detailed in Section 3.3 to 3.5 of Chapter-III. The details of Traffic Study is provided under Section 4.9, Chapter-IV.**	**3-11 & 3-36** **4-23**
11.	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.	**The details of flora in the core zone, project impact zone (PIZ) and the buffer zone are provided from Table No.3.23–3.24, Chapter-III.**	**3-38**
12.	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 7.6, Chapter-VII.**	**7-17**
13.	The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.	**Agreed.**	**--**

14.	The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and 0.A.No.580/2016 (M.A.No.1182/2016) and 0.A.No.102/2017 and 0.A.No.404/2016 (M.A.No.758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.NO.981/2016, M.A.No.982/2016 & M.A.No .384/2017).	**Agreed.**	**-**
15.	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	**In the lease area, safety barrier 7.5m around the periphery, and 10m safety zone for cart tracks. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 650 trees will be planted in and around the lease area. Details of the same is provided under Table No.4.14, Chapter-IV.**	**4-19**
16.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper spacing as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.	**Agreed**	**--**
17.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	**The disaster management plan has been provided under section 7.4.1, Chapter-VII.**	**7-16**

18.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.	**Details about Risk Assessment has been provided under section 7.4, Chapter-VII.**	**7-15**
19.	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.** **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.**	**3-9** **4-21**
20.	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.	**Replied above in Point No.2.**	**--**
21.	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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986"	**Agreed.**	**--**

B. Additional ToR			
1	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.	• **This draft EIA/EMP report will be exposed to public consultation 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.**	**7-1**
2	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.	**Considering that the quantum of production is less, only 1 excavator, 6 tippers will be engaged. These equipment's will be properly and regularly maintained. Besides, as mentioned earlier, 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 650 number of plants will be planted in and around the lease area.**	**4-3**
3	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	**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**
4	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	• **In the post mining stage, entire 1.00.0 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads& infrastructure, 0.07.0 Ha will be covered with vegetation and 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing. The land use during the post operational**	**4-20**

		period is given under Table No.4.14, Chapter-IV.	
5	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.**	**3-46**
6	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	• **Soil samples were collected in 3 locations in the core and buffer zone to analyses the physiochemical characteristics of the soil in the area. The soil quality data is provided in Table No.3.18, Chapter-III.** • **The soil of the study area is characterized by Entisols, Inceptisol, Alfisols.The lease are falls under the category of Inceptisol. The soil map is provided in Figure No.3.24, Chapter-III.** **Topsoil will be used for bund formation and for plantation purposes.**	**3-29** **3-48**
7	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-III.**	**3-36**
8	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	**Replied in Additional ToR Point No.7.**	**--**
9	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	**The nearest major water bodies** **Nadi - 90m (W), Vaippar River-320m- (N), Uppu Odai – 3.3km-(SE), Marugal Odai – 5.0km – (NE), Kayalkudi River - 7.2km – (NE).There is no proposal to discharge any effluent into this water body. No major impact is envisaged on the nearby water bodies due to project operations.**	**3-3** **4-10**
10	The Environmental Impact Assessment	• **Detailed environmental management plan is**	**10-7**

	should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.	**provided in Chapter-X.** • **The environmental management cost is provided under Table No.10.1, Chapter-X.** • **Disaster management plan is provided under section 7.4.1, Chapter-VII.**	**7-16**
11	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	• **Considering that the quantum of production is less, only 1 excavator, 6 tippers will be engaged. These equipment's will be properly and regularly maintained. Besides, as mentioned earlier, 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 650 number of plants will be planted in and around the lease area.** • **Besides, there is no waste generation, disposal or stacking involved in this project. Hence, no adverse impact on this front is envisaged.**	**4-3**
12	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	• **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.**	**4-17**
13	The project proponent shall study and furnish the impact of project on plantations in adjoing patta lands, Horticulture, Agriculture and livestock.	**Due to poor soil condition and non-availability of 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**	**4-17**
14	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	**In the post mining stage, entire 1.00.0 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads& infrastructure, 0.07.0 Ha will be covered with vegetation and 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing.**	**4-20**

15	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.** • **Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 650 trees will be planted in and around the lease area.**	**3-36** **4-15** **4-19**
16	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.**	**4-25**
17	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.	**There are no reserve forests in the 10Km radius. Details of impact on biological environment is provided under section 4.6.2, Chapter-IV.**	**4-17**
18.	The project proponent shall detailed study on impact of quarry on Devanadi (Nikshopa Nadi) in 90m and Vaippar River in 320m (NE) are located.	**Details of hydrological scenario of the study area were given in para 3.6, Chapter – III**	
19	The project proponent shall furnish the impact on other odai may be studied.	**Details of the same is provided under section 3.6.4.4, Chapter-III.**	**3-52**
20	The project proponent shall furnish the permission from PWD, WRD for operating quarry in this area.	**Under process**	**-**

C. Standard ToR			
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.	• **Quarrying in this lease area was earlier carried out by G. Kaniraj for the period of 06.10.2016 to 05.10.2021 with the proceeding no. KV1/33631/2013 dated 16.09.2016** • **Environmental clearance for the earlier lease area obtained from SEIAA-TN/F.NO.3260/EC/1(a)/2629/2015 dated 05.01.2016 for Rough stone blue metal & Gravel quarrying at SF no 202/1A2, Appainaickanpatti village, Vembakottai taluk, Virudhunagar District, Tamil Nadu over 1.21.5 Ha of the lease area.** **The details of the workings of earlier quarry are provided vide letter from Assistant Director, Geology & Mining, Virudhunagar vide Roc.No.KV1/1582/2021 dated 26.10.2021 (Annexure-13)**	**2-11**
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 received from the Assistant Director Department of Geology & Mining, Virudhunagar Vide KV1/158/2021 Dated: 13.08.2021. (Annexure-1)**	**A-1**
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	**The production capacity, quantity of waste, its management and mining technology in mine plan and EIA, etc., are compatible with one another.**	**--**
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	• **Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II.** • **The geology and geomorphology map is**	**2-6** **3-45**

	the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	**provided in Figure No.3.21, 3.22, Chapter-III. The Lithology map and Soil map are provided under Figure No. 3.23, 3.24, Chapter-III.** **The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III.**	**3-46** **3-47** **3-48** **3-2**
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 land use board or the concerned authority.	**Not Applicable**	**--**
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or	• **The proponent 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**

	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.	**Various risks likely to arise due to mining activities are detailed under section 7.4, Chapter-VII. This being an opencast mine without blasting, subsidence is not applicable. Since there no blasting, so there no impact due to ground vibrations due to blasting is given in para 4.3.2, Chapter-IV.**	**7-15** **4-8**
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 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, Chapter-IV.** • **In the post mining stage, entire 1.00.0 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads& infrastructure, 0.07.0 Ha will be covered with vegetation and 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.**	**3-29** **4-15** **4-20**
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	**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.**	**2-12**

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.**	**4-17**

	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	**Not Applicable**	**--**

	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 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 he undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoml 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-	**The mining activities will be carried out within the mine lease area only. The entire mine lease area is a patta land in proponent's possession. There is no population within the ML area. Hence, the question of R& R does not arise.**	**7-17**

	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.	• **The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Winter Season (December 2021 to February 2022) 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.**	**3-11 & 3-36**
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**	**4-2**

		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 the resultant added concentrations with baseline figures even at worst scenario, show that the values of ambient air quality with respect to PM10 are in the range of 55.1 μg/m3 to 77.8 μg/m3 and with respect to PM2.5 are in the range of 25.9 μg/m3 to 37.6 μg/m3 which are within the statutory limits in each case.**	**4-5 & 4-6**
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 5.0 KLD comprising 1.0 KLD for drinking water and domestic use, 3.0 KLD for dust suppression and 1.0 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 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.**	**4-9**

		• **Towards surface runoff management, a garland drain of length 600m 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 4.4, Chapter-IV.** • **The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.**	**4-11**
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.	• **Non- perennial Vaippar river and Nadhi is located 320 meter (North) and 90 m (west) respectively from the lease area. Based on geophysical study there is no observation of fractured zone/ fissure vein up to depth of 60m in the study area. Besides, good plantation will also be carried out in the safety zone. There is no proposal to discharge any effluent into this water body.** • **During the rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry. As such no major impact is envisaged on the nearby water bodies due to project operations.** • **The ultimate pit depth of mining is 20m. 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**	**4-10**

		to the quarrying operation.	
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.	**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 sometimes become dry during summer. Bore wells > 300 ft reflects that the yield is only better at deeper water levels. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.** • **The ultimate pit depth of mining is 20m. 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, Chapter – III.**	**3-52** **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.	**Replied above in Standard ToR point No.27.**	**--**
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	• **The area applied for mining lease is a gentle plain terrain. Part of the lease area has already been mined out. The topography of the lease area ranges**	**2-2**

	for the same.	**around 97m RL.** • **The ultimate pit depth of mining is 20m. The ground water table in this area is below this level.**	**2-13**
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.	**In the lease area, safety barrier 7.5m around the periphery, 10m for cart track. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 650 trees will be planted in and around the lease area. Details of the same is provided under Table No.4.14, Chapter-IV.**	**4-19**
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 building stones, fencing stones, manual loading & transportation by trucks to needy customers. Details of the traffic study is provided under section 4.9, Chapter-IV.**	**4-23**

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.**	**2-14**
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 1.00.0 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads& infrastructure, 0.07.0 Ha will be covered with vegetation and 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing.**	**4-15**
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 4.8.2, Chapter-IV.**	**4-22**
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	• **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**	**4-21**

	implementation.	**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 4.7, Chapter-IV**	
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 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.	• **This draft EIA/EMP report will be exposed to public consultation 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.**	**7-1**
40	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	• **There is no litigation pending against the project.**	**--**
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should	• **The cost of the project is Rs. 32,16,876/- Lakhs.**	**2-14**

	be clearly spelt out.	• **Towards EMP measures, Rs.7.98 Lakhs is allocated under capital cost. Besides, Rs.5.18 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.**	**10-9**
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	**The disaster management plan has been provided under section 7.4.1, Chapter-VII.**	**7-16**
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 18 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 planned to allocate 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.**	**8-1**

* * * * * * * *

CHAPTER - I

INTRODUCTION

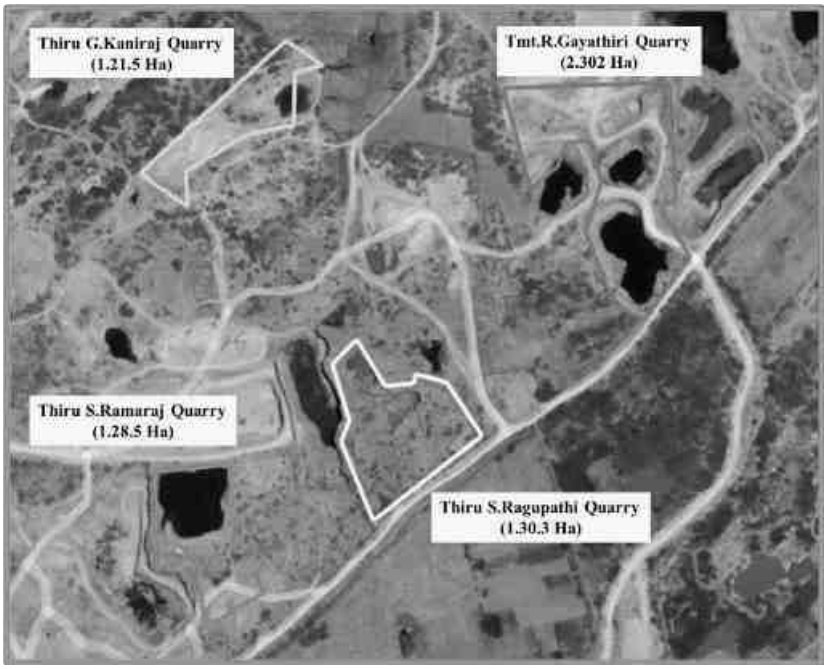
CHAPTER 1
INTRODUCTION

1.1 PURPOSE OF THE REPORT:

Thiru G.Kaniraj proposes to operate a **Rough Stone and Gravel Quarry** at Survey Nos.202/1A2 over 1.215 Ha In Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar, District, Tamil Nadu and has initiated action towards obtaining environmental clearance. It is proposed to mine 87,982.25m^3 of Rough stone and 14,978.75m^3 of Gravel for a period of five years up to a depth of 20m for a period of 5 years.

Although the individual lease area of this project is less than 5 Ha, the other existing 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. As such Common EIA for Rough Stone and Gravel Quarries of Thiru G.Kaniraj, Tmt.R.Gayathiri, Thiru S.Ragupathi and Thiru S.Ramraj falling in the cluster along with separate assessment of impacts and EMP for each project is carried out. The details of the quarries located within the 500m radius of the project is given vide **Annexure-12.** Besides, there are other mines in the cluster extension. A cumulative impact study has been carried out and furnished in **Para 7.3, Chapter-VII.**

Figure 1.1: Satellite Imagery of Proposed Quarries in Cluster



This draft EIA/EMP report pertains to the Rough Stone and Gravel Quarry of Thiru G.Kaniraj.

This EIA/EMP report is prepared based on standard and specific Terms of Reference issued by SEIAA, Tamil Nadu vide their letter No. SEIAA-TN/F.No.8925/SEAC/ToR-1118/2022 Dated: 23.03.2022 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 PROJECT:

Table 1.1 Identification of project

1	**Project Name**	Rough stone and Gravel Quarry of Thiru G.Kaniraj
2	**Extent**	1.215 Ha
3	**Production**	Roughstone - 87,982.25m^3 Gravel - 14,978.75m^3
4	**Ultimate Depth**	20m
5	**Land Classification**	It is patta land registered in the name of Thiru G. Kaniraj vide Patta no. 1783.
6	**Location**	Survey no : 202/1A
		Village: Appanayakkanpatti
		Taluk: Vembakottai
		District: Virudhunagar
		State: Tamil Nadu

Table 1.2: Identification of Project Proponent

1	**Proponent Name**	Thiru. G. Kaniraj
2	**Address**	S/O. Sri. Gurusamy 60c, Indra Nagar, Thiruvenkadam, Sankarankovil Taluk, Tenkasi District. – 627719.
3	**Contact Number**	9942017748
4	**Email-ID**	kanirajg@yandex.com

The Proponent can meet the requirement the financial requirement of this project and will ensure that the mining activities are carried out as per statutory requirements.

Table 1.3: Statutory Approvals

S.No	Approval	Given by	Letter Number and Date	Reference
1.	**Precise Area Communication Letter**	Assistant Director, Geology & Mining Virudhunagar	KV1/158/2021 Dated: 13.08.2021	**Annexure-1**
2.	**Mining Plan Approval**	Assistant Director, Geology & Mining Virudhunagar	KV1/158/2021, dated 01.09.2021	**Annexure-2**
3.	**Details of other quarries within 500m radius**	Assistant Director, Geology & Mining Virudhunagar	KV1/158/2021 Dated: 26.10.2021	**Annexure-12**

Based on the conditions of Precise Area Communication letter, a safety distance of 10m is provided for the cart track passing near the lease area and 7.5m safety distance has been left for the adjoining patta lands.

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

1.3.1 NATURE, SIZE AND LOCATION OF THE PROJECT:

Table 1.4: Brief Description of Nature of project

1.	**Sector**	1(a), Non-Coal Mining
2.	**Type**	Fresh Project
3.	**Category**	B1 (Cluster Situation)
4.	**Mineral Mined**	Rough stone and Gravel
5.	**Major/Minor Mineral**	Minor
6.	**Mining method**	Opencast Semi mechanized (without blasting)Mining with jackhammer drilling, splitting by feather & wedges, manual dressing in to building stones, fencing stones, manual loading & transportation by trucks to needy customers.
7.	**End use**	The top Gravel will be loaded using loader into trucks and marketed to needy customers. The excavated rough stone will be manually dressed into small building stones for foundation purpose and then loaded manually into trucks for transportation to the needy customers.

Table 1.5: Location of the project

S.No	Particulars	Details
1.	**Location**	Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu
2.	**Corner Coordinates**	**Latitude:** 9°17'44.4"N to 9°17'50.3"N **Longitude:** 77°41'36.6"E to 77°41'43.0"E
3.	**Toposheet Number**	58 G / 11.12 14 & 15

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

1.3.2 IMPORTANCE TO THE COUNTRY AND REGION:

Rough stone and Gravel from this quarry 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 give employment opportunities to 18 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/70518/2021
File no	8925/2022
SEAC meeting for issue of TOR	251st Meeting held on 04.03.2022
SEIAA meeting for issue of TOR	495th Meeting held on 23.03.2022
Terms of Reference	Letter No. SEIAA-TN/F.No.8925/SEAC/ToR-1118/2022 Dated: 23.03.2022
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Winter Season (December 2021 to February 2022)

Based on the terms of reference, 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.
- Formulation of an Environmental Management plan including administrative aspects for proposed implementation of mitigative measures in time.

This draft EIA/EMP report will be exposed to public hearing 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, Tamilnadu in the final EIA/EMP report.

* * * * * * * *

CHAPTER - II

PROJECT DESCRIPTION

CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT:

This proposal involves quarrying of rough stone and gravel by Thiru G.Kaniraj using mechanized opencast method without blasting for the lease period of 5 years.

2.2 NEED & JUSTIFICATION FOR THE PROJECT:

There is a good demand for building stones, fencing stones 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 and 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: Project site description

Location	Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar, District, Tamil Nadu
Survey No.	202/1A2
Coordinates	**Latitude:** 9°17'44.4"N to 9°17'50.3"N **Longitude:** 77°41'36.6"E to 77°41'43.0"E
Nearest Village	Sevalpatti – 3.6km (NE) Kundampatti – 1.5km (S) Appanayakkanpatti – 2.2Km (SW)
Nearest Town	Kovilpatti – 25 Km - SE
Nearest Highway	SH-187 (Sivakasi – Kalugumalai) – 5.70Km – E SH-44 (Balvannanthapuram - Ettaiyapuram) -3.9Km - S

Nearest Railway Station	Kovilpatti RS – 25km - SE
Nearest Airport	Thoothukudi - 85km - SE
Topography	Partly mined and Plain terrain, dry lands with scarce vegetation.
Accessibility	The lease area can be approached road from Sevalpatti – Thiruvengadam road which joins SH-187 (Sivakasi – Kalugumalai) at a distance of 5.7Km on the eastern side of the lease area and SH-44(Balvannanthapuram - Ettaiyapuram) in the southern side of the lease area at a distance of 3.9Km.
Drainage	There is no major water body in the core zone. There is a nadi located at a distance of 90m on the western side and Non- perennial Vaippar river lies at a distance of 320m on the northern side. Ammaiyarpatti Tank lies at a distance of 1.2 Km in north eastern side,

Location map & approachability map is provided in **Figure No.2.1 & 2.2 respectively.** Corner co-ordinates of the project area boundary in map and satellite imagery, village map are shown in **Figure No. 2.3 2.4 & 2.5** respectively.

Figure 2.1: Location Map

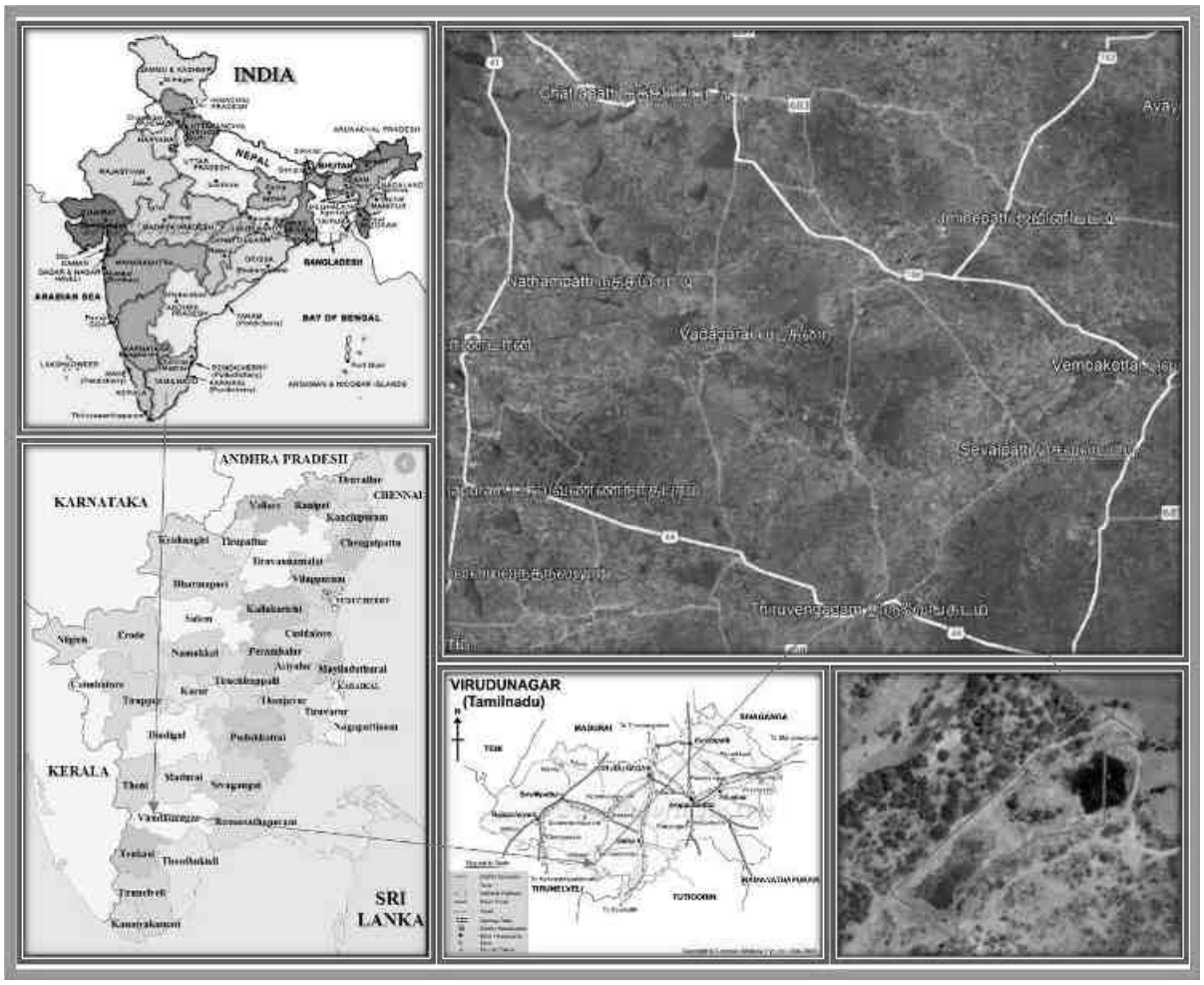


Figure 2.2: Approachability Map

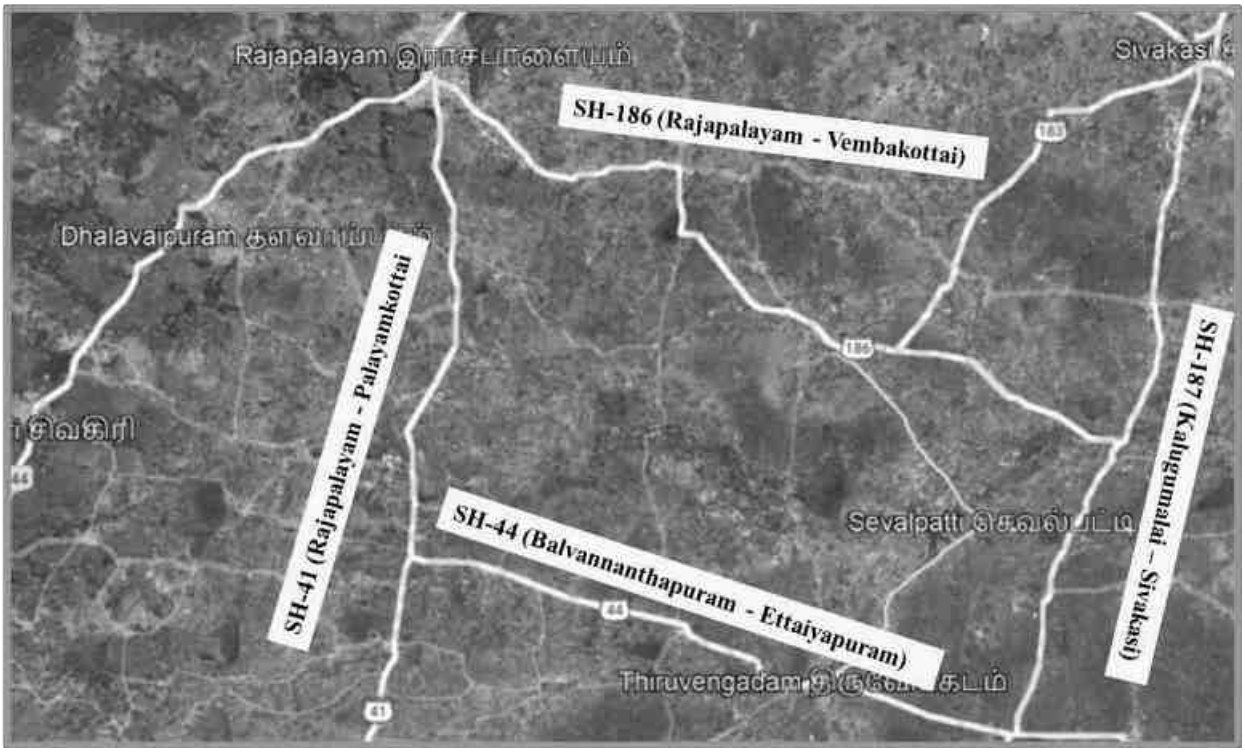
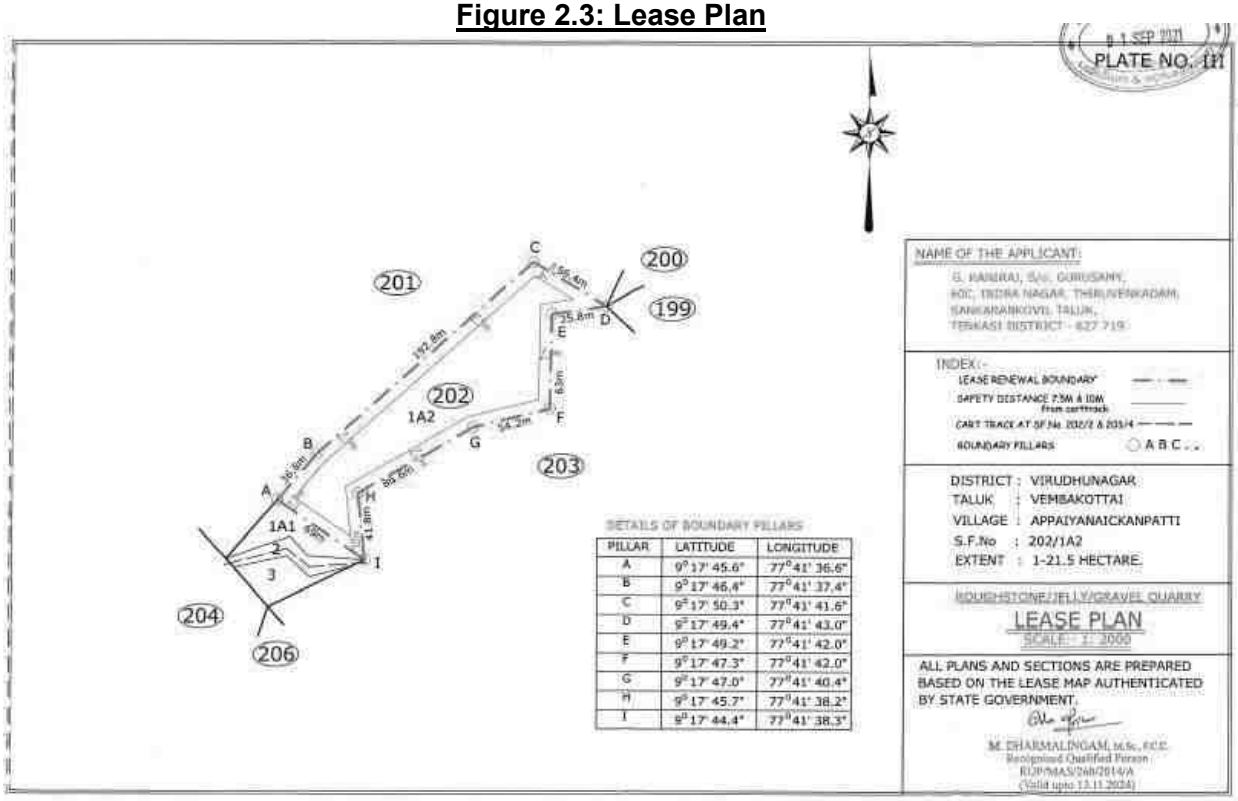


Figure 2.3: Lease Plan



DETAILS OF BOUNDARY PILLARS

PILLAR	LATITUDE	LONGITUDE
A	9°17' 45.6"	77°41' 36.6"
B	9°17' 46.4"	77°41' 37.4"
C	9°17' 50.3"	77°41' 41.6"
D	9°17' 49.4"	77°41' 43.0"
E	9°17' 49.2"	77°41' 42.0"
F	9°17' 47.3"	77°41' 42.0"
G	9°17' 47.0"	77°41' 40.4"
H	9°17' 45.7"	77°41' 38.2"
I	9°17' 44.4"	77°41' 38.3"

Figure 2.4 : Satellite Imagery Showing Corner Co-ordinates of the Project Area

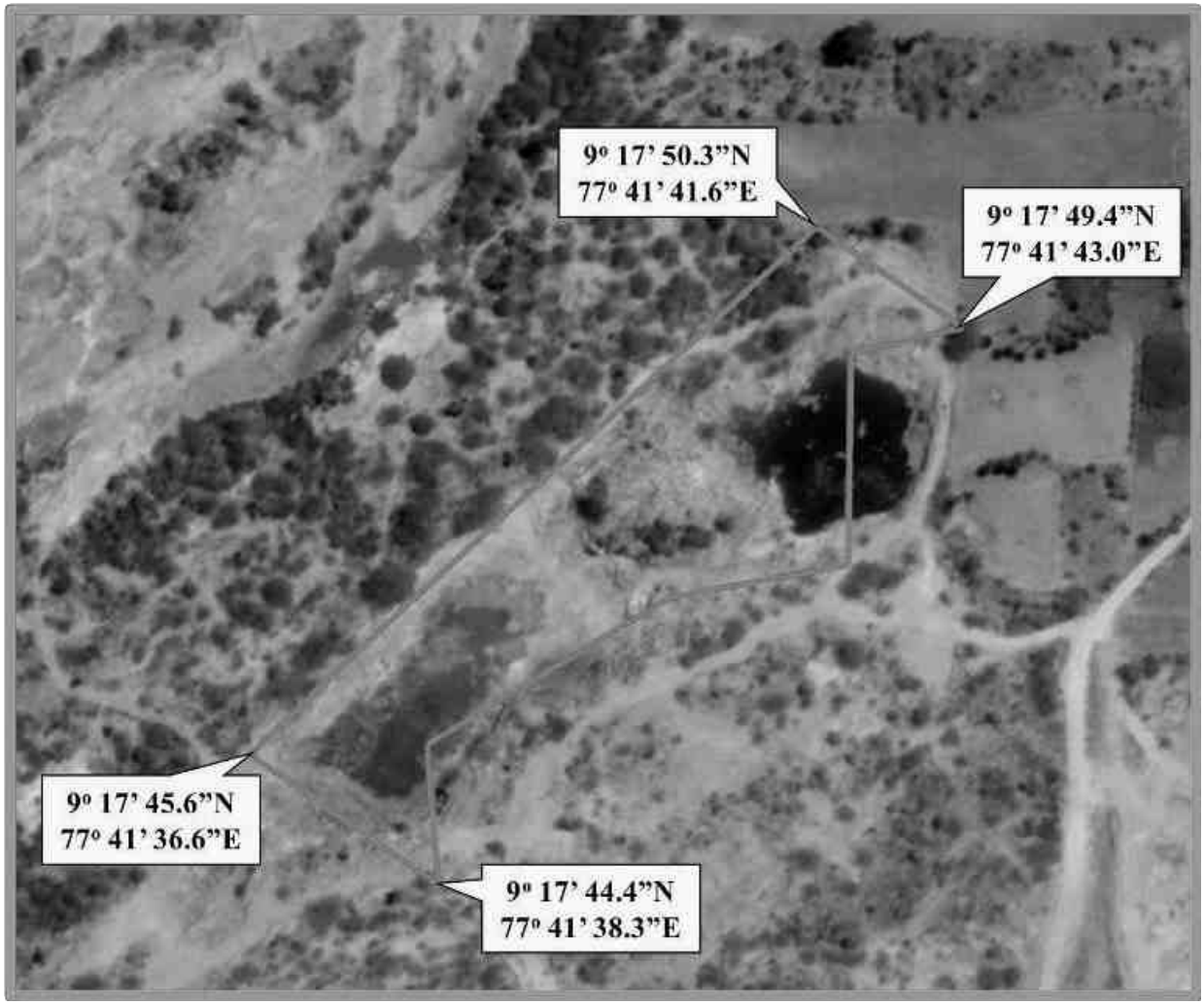
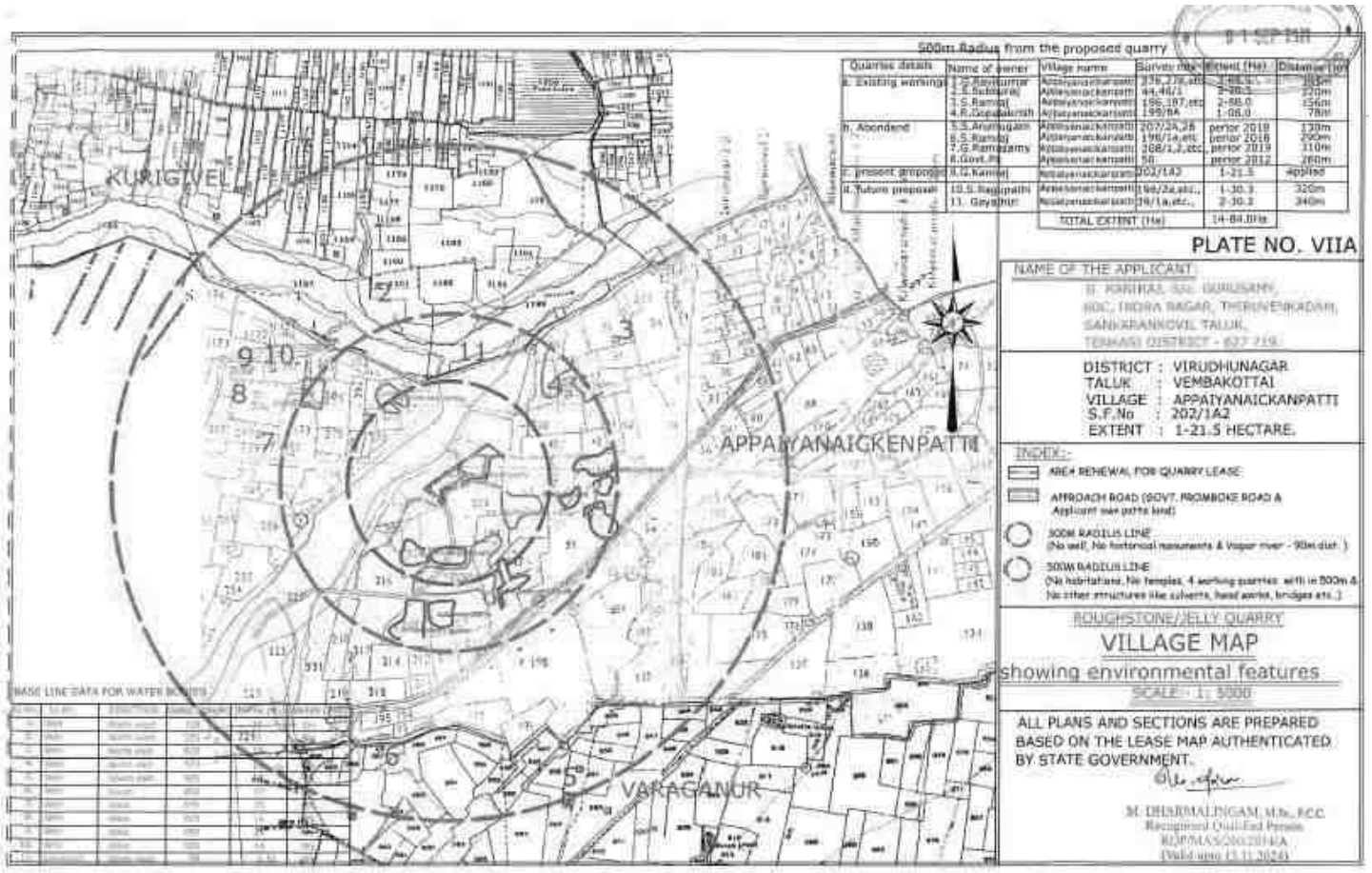


Figure 2.5: Village Map



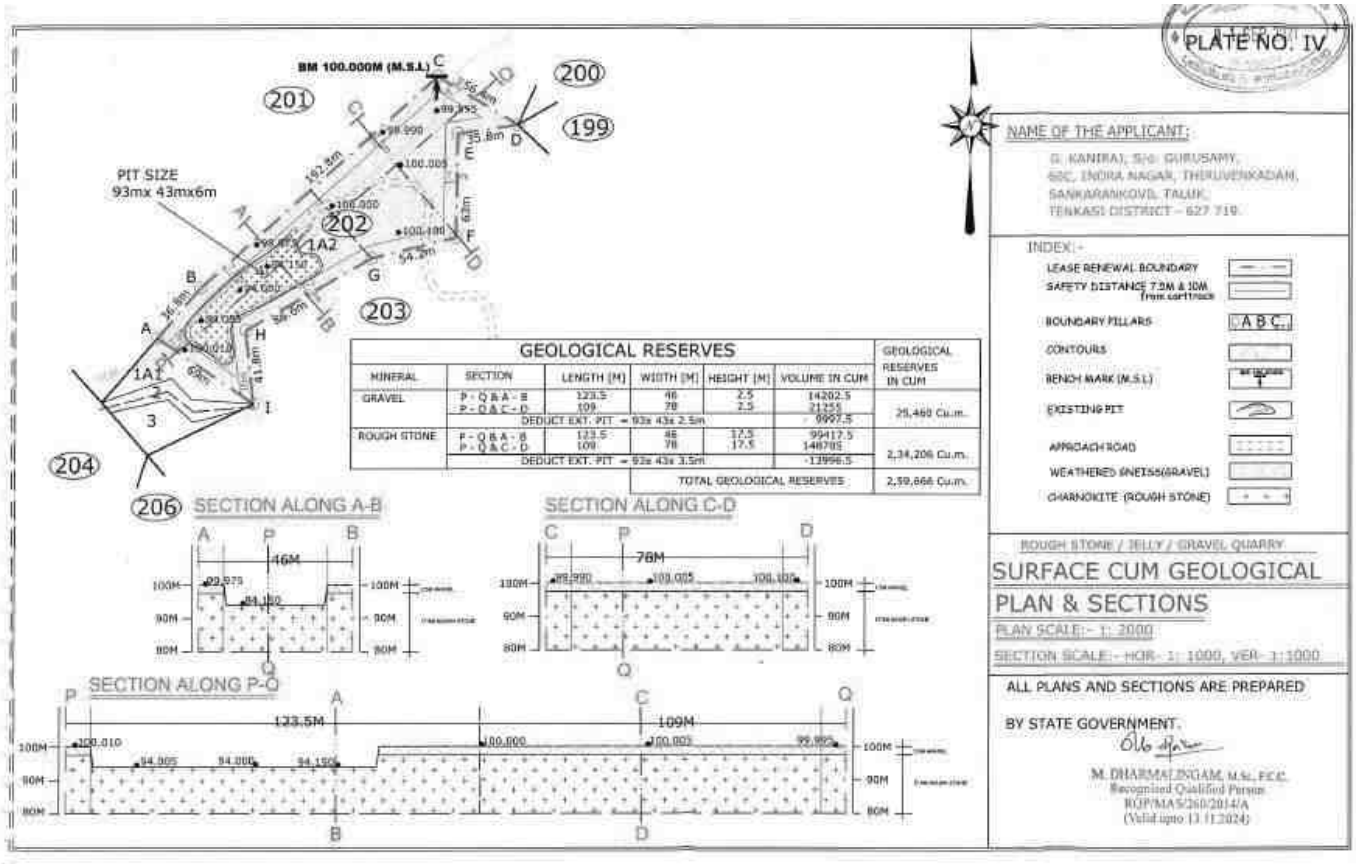
2.3.1 LAND USE:

The lease area over an extent of 1.215 Ha located in survey number 202/1A2 is a patta land in the name of the applicant Thiru G.Kaniraj.

2.3.2 GEOLOGY:

The rocks in this area belonging to Archean group of rocks. Below the Gravel formation a hard Rough stone Charnockite is noticed. The rocks are Phaneric to medium grained nature. And in these rocks there are mineral constituents of Blue Quarts, Micro Cline Feldspar, Hypersthene and flakes of Biotite Mica. The rocks are striking towards North west – South east direction dipping 80^0 Vertical towards South west direction. The strike length of the deposit is 123.5m with an average width of 46meter on southwest side and the strike length of the deposit is 109m with an average width of 78meter on northeast side.

Figure 2.6: Geological Plan and Cross Section



2.4 SIZE AND MAGNITUDE OF THE OPERATION:

- Total Mineral resources in the lease area is 2,34,206m^3 of Roughstone and 25,460 m^3 of Gravel
- The recoverable mineable reserves is 87,982.25m3 of Roughstone and 14,978.75m3 of Gravel.
- Lease period is 5 years.
- No waste generation is expected from this quarry operation as all recoverable mineral reserves from this project will be used for construction purposes.

2.4.1 RESERVES:

The geological and recoverable reserves are estimated by cross sectional method.

Table 2.2: Geological and Mineable Reserves

S. No	Type of reserves	Rough Stone m^3	Gravel m^3
1	Mineral resources	2,34,206	25,460
2	Recoverable mineral reserves	87,982	14,978.75
4	Locked up reserves	1,46,224	10,481.25

The mineable reserves is arrived after considering the safety distance of 7.5m peripheral safety distance, 10m safety distance for the cart track on the south.

2.4.2 MINING METHOD:

Opencast Semi mechanized Mining with jackhammer drilling without blasting , splitting by feather & wedges, manual dressing in to building stones, fencing stones, manual loading & transportation by trucks to needy customers. The top gravel is soft and can be directly excavated. Bench height of 5.0m & 5m width is considered.

Table 2.3: Details Of Equipments

S. NO	NAME OF THE EQUIPMENT	CAPACITY	REQUIREMENT
1	Excavator / Loader	-	1
2	Tipper	10 Tonnes	6
3	Tractor compressor for drilling	175 CFM	2
4	Dewatering Pump	5 Hp Diesel Pump	1

2.5 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION:

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

Table 2.4 : Proposed Schedule of Implementation

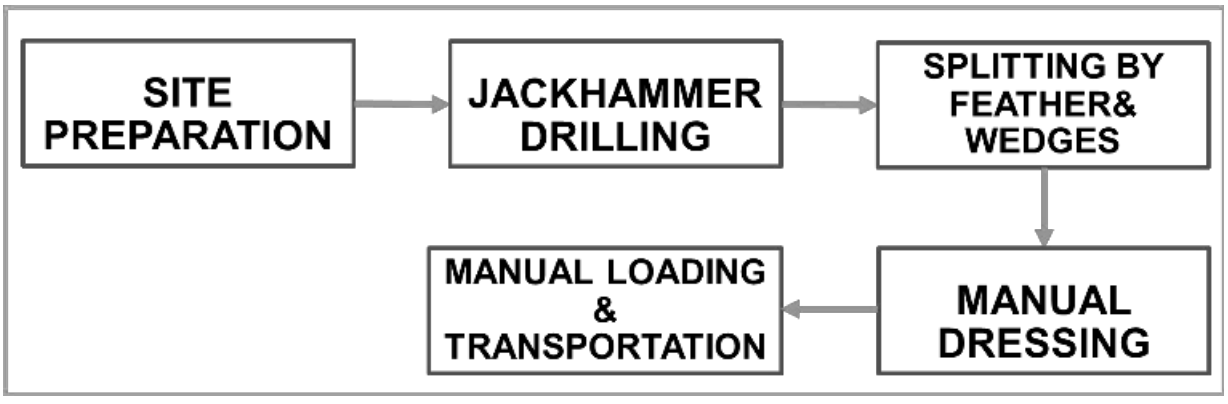
Activities	Months					
	Zero Date	1	2	3	4	5
Obtaining Environmental Clearance						
Obtaining Consent from State Pollution Control Board						
Lease Execution						
Equipment mobilization and Commencement of Mining activity after following all the Statutory Requirements						

2.6 TECHNOLOGY AND PROCESS DESCRIPTION:

The quarry operations involve Opencast Semi mechanized Mining with jackhammer drilling (without blasting), splitting by feather & wedges, manual dressing in to building stones, fencing stones, manual loading & transportation by trucks to needy customers. The top Gravel will be directly removed & loaded using loader into tipper and marketed to needy customers.

The process flow diagram of this project is provided below.

Figure 2.7: Process Flow Diagram



2.7 PROJECT DESCRIPTION:

2.7.1 PAST PRODUCTION:

Quarrying in this lease area was earlier carried out by G. Kaniraj for the period of 06.10.2016 – 05.10.2021 with the proceeding no. KV1/33631/2013 dated 16.09.2016. Environmental clearance for the earlier lease area obtained from SEIAA – TN vide letter no Lr.No. SEIAA-TN/F.No.3260/EC/1(a)/2629/2015 dated 05.01.2016 for Rough stone & Gravel quarrying at SF no 202/1A2, Appaiyanaickenpatti village, Vembakottai taluk, Virudhunagar District, Tamil Nadu over 1.21.5 Ha of the lease area. **(Annexure-4)**

Table 2.5: Existing Pit Dimensions

Pit No	Length (m)	Width (m)	Depth (m)
Old Pit No 1	93	43	2.5
Old Pit No 2	93	43	3.5
Total	93	43	6.0

Table 2.6: Earlier Lease Details

S.No	Extent	SF. Nos.	Village & Taluk	Proceedings No. & date	Period
1	0.96.5	202/1A2	Appaiyanaickenpatti Vembakottai	KV1/4091/2009 dated 21.04.2009	25.04.2009 - 24.04.2014
2	1.21.5	202/1A2	Appaiyanaickenpatti Vembakottai	KV1/33631/2013 dated 16.09.2016	06.10.2016 - 05.10.2021

Table 2.7: Past Production

Environmental Clearance	Proceeding & Lease period	Permitted Quantity as per Approved mining plan & EC			Quantity transit Permit issued & Transported		
		Rough Stone	Gravel	Depth	Rough Stone	Gravel	Depth
SEIAA-TN/F.NO.3260/EC/1(a)/2629/2015. Dated: 05.01.2016	KV1/33631/2013, dated: 16.09.2016 06.10.2016 – 05.10.2021	34833 Cu.m	12303 Cu.m	6m	16782 Cu.m	1274.85 Cu.m	4m (overall 6m including 2m of previous lease period)

Letter had been obtained from Assistant Director, Geology and Mining, Virudhunagar vide letter no. Roc No:KV1/158/2021 dated 26.10.2021. **(Annexure-5)**

2.7.2 PLAN PERIOD-PRODUCTION & WASTE DISPOSAL:

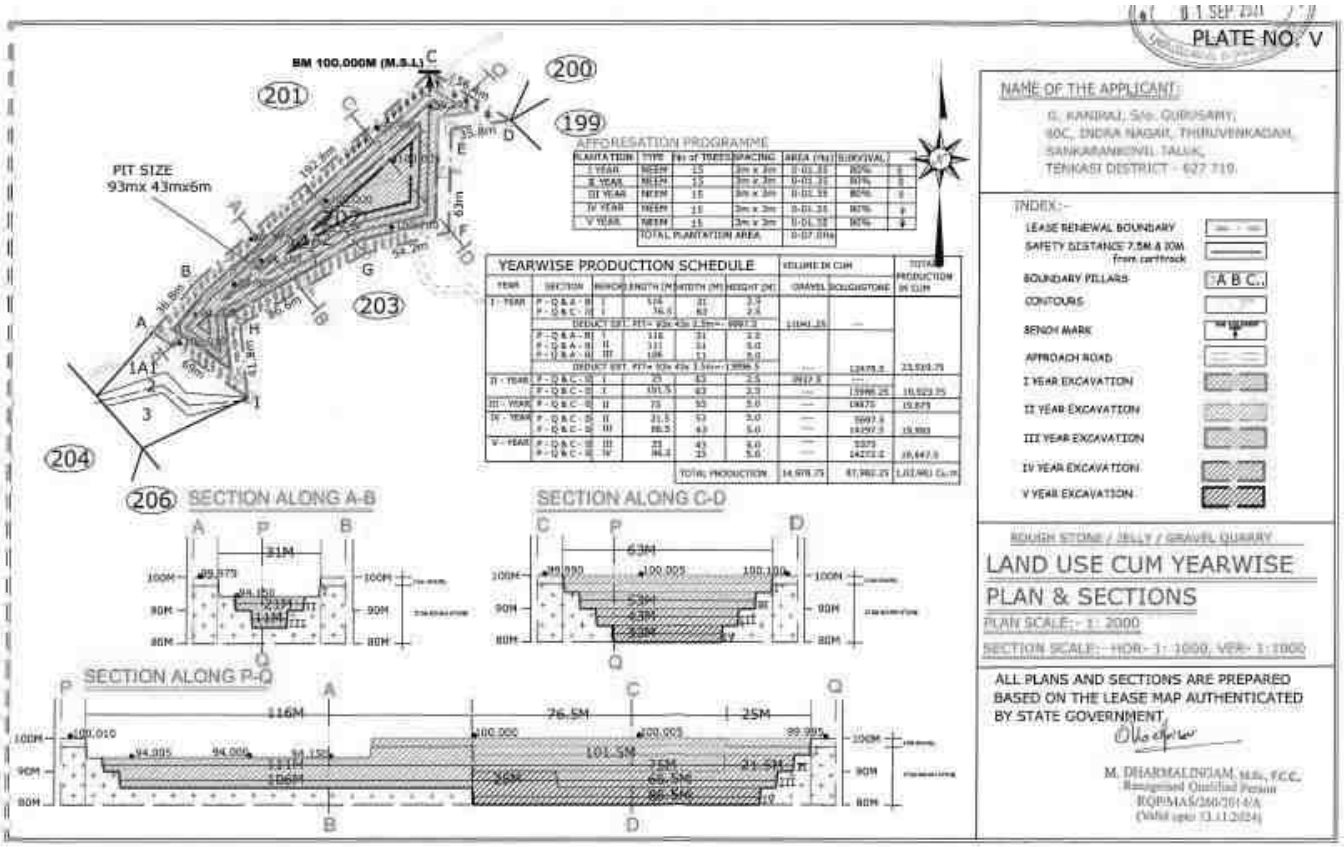
The production schedule during the plan period has been provided below:

Table 2.8: Production Schedule During Plan Period

YEAR	Rough Stone m^3	Gravel in m^3
1	12478.50	11041.25
2	15986.25	3937.50
3	19875.00	--
4	19995.00	--
5	19647.50	--
Total	**87982.25**	**14978.75**

Waste Disposal during Plan Period: There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized.

Figure 2.8: Production Plan and Cross Section



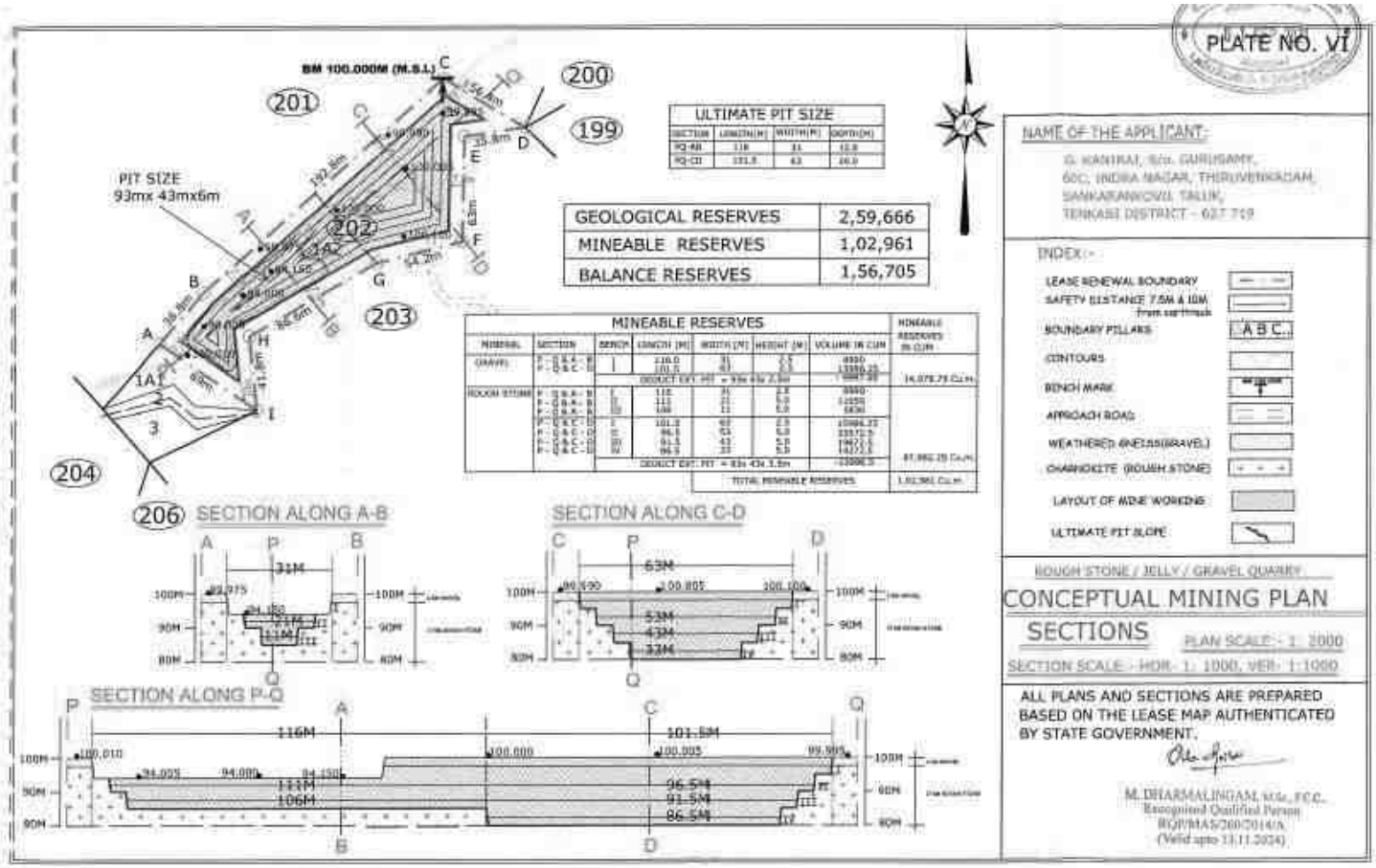
2.7.3 CONCEPTUAL STAGE:

Table 2.9: Ultimate Pit Dimensions

	LENGTH(M)	WIDTH(M)	DEPTH(M)
CS - AB	116	31	15
CS-CD	101	63	20

The ground water table on the surface in this area is ranging beyond this depth. Hence, ground water intersection in not envisaged. The Conceptual Plan & Cross section are shown in **Figure No. 2.9.**

Figure 2.9: Conceptual Plan and Cross Section



2.7.4 LAND DEGRADATION/UTILIZATION:

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

Table 2.10: Land Use Table

S.No	Land Use	Present Area (Hect)	Area in use End of the lease period(Ha)
1.	Quarrying Pit	0.31.0	1.00.0
2.	Infrastructure & Road	Nil	0.03.0
3.	Green Belt	Nil	0.07.0
4.	Undisturbed	0.90.5	0.05.5
4.	Fencing	Nil	0.06.0
	Total	**1.21.5**	**1.21.5**

At the end of the 5 year period about 1.00.0 Ha will be used as mined out area at 20m depth. Ultimately the entire mined out area will be left as water body 0.03.0 Ha is road & infrastructure, 0.07.0 ha will be under afforestation, 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing.

2.7.5 PROJECT REQUIREMENTS:

Table 2.11: Project Requirements

<table>
<tr><td>Manpower</td><td>18 people</td></tr>
<tr><td>Water Requirement and Source</td><td>Water Requirement: 5.0 KLD
<table>
<tr><th>Details</th><th>Quantity (KLD)</th></tr>
<tr><td>Drinking water and Domestic Use</td><td>1.0</td></tr>
<tr><td>Dust Suppression</td><td>3.0</td></tr>
<tr><td>Green belt</td><td>1.0</td></tr>
<tr><td>Total</td><td>5.0</td></tr>
</table>
Source: The required water will be procured initially from outside agencies. Later Rain water harvested in the mine sump can also be used.</td></tr>
<tr><td>Power Requirement</td><td>No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.</td></tr>
<tr><td>Site Services</td><td>This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.</td></tr>
<tr><td>Project Cost</td><td>Rs. 32,16,876/- (Including operational + Fixed Asset).</td></tr>
<tr><td>Funds allocated for socio-economic development</td><td>Rs.5.0 Lakhs is allocated under CER budget.</td></tr>
</table>

2.8 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 has been dealt in Chapter- IV.

2.9 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY:

There is no new technology that is being implemented. Opencast method of mining without blasting 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.

2.10 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 - III

DESCRIPTION OF ENVIRONMENT

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 **Winter Season (December 2021 to February 2022)** 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 leases in 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	Virudhunagar District
		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

Figure 3.1: Study Area Map

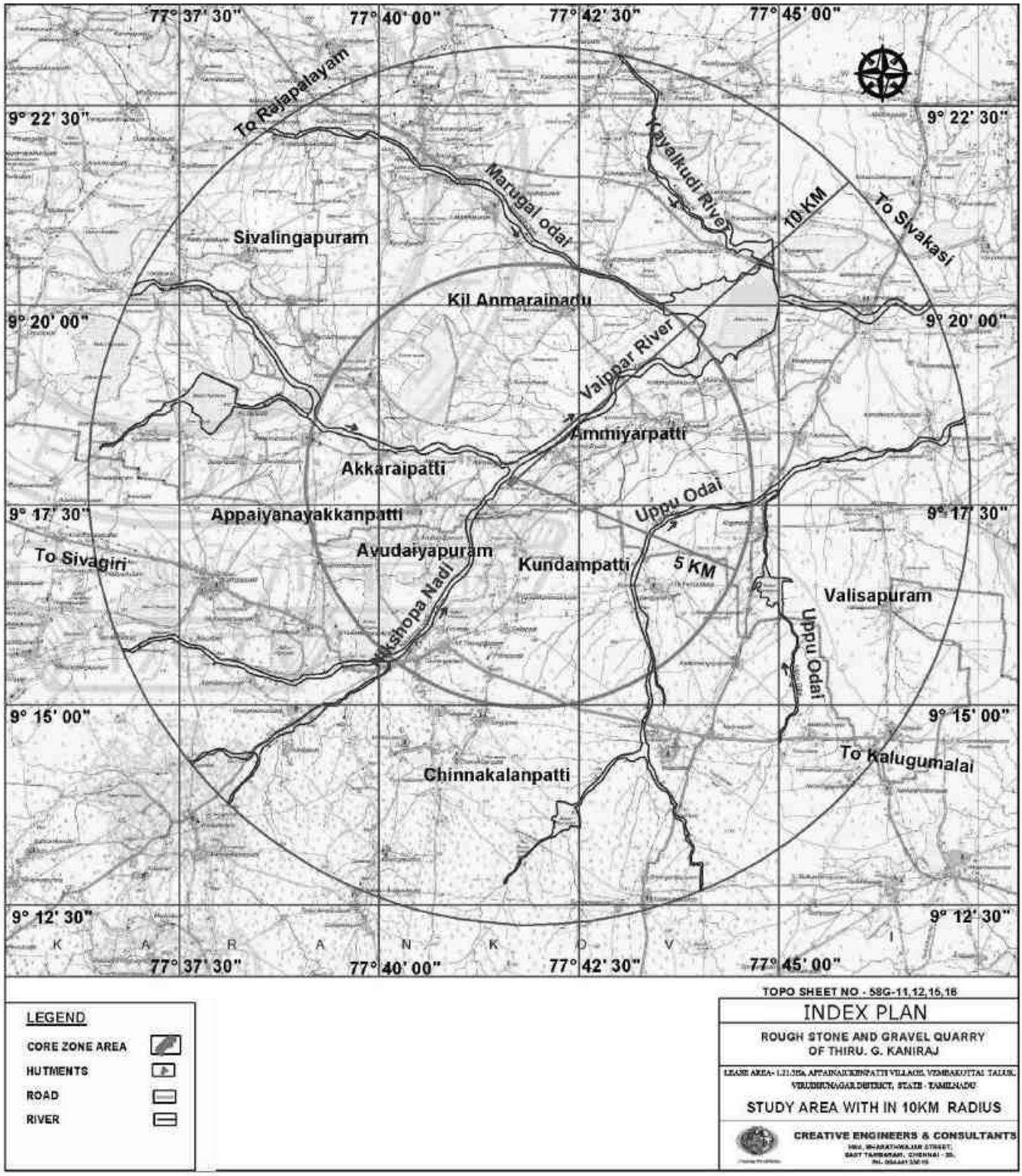


Table 3.2: Environmental Setting of the Study Area

S.No	PARTICULARS	DETAILS
1	Nearest highway	Kovilpatti – Thiruvengadam (SH-44)– 4.0km (SW)
2	Nearest Railway station	Kovilpatti RS – 25km - SE
3	Nearest Airport	Thoothukudi - 85km - SE
4	Nearest major water bodies	Nadi - 90m (W), Vaippar River-320m- (N), Uppu Odai – 3.3km-(SE), Marugal Odai – 5.0km – (NE), Kayalkudi River - 7.2km – (NE).
5	Nearest town/City	Kovilpatti – 25km (SE)
6	Nearest villages	Sevalpatti – 3.6km (NE) Kundampatti – 1.5km (S) Appanayakkanpatti – 2.2Km (SW)
7	Hills / valleys	Nil within 10 km radius
8	Notified Archaeologically important places, Monuments	Nil within 10 km radius
9	Local Places of Historical and Tourism Interest	Nil within 10 km 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 10 km 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 rough stone quarry & crushers there are no other major industries in the 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 and 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 quarry is located in in Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar District. Based on 2011 census data, in the 10km radius there are 35 Rural villages and five taluks namely Sivakasi, Rajapalayam, Sattur, Sankarankoil, Kovilpatti of 3 districts namely Virudhunagar, Tirunelveli and of Thoothukkudi District. 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	49528	49.35
Female Population	50838	50.65
Total	**100366**	**100**
B. Caste-wise population distribution		
Scheduled Caste	23360	23.27
Scheduled Tribes	149	0.15
Other	76857	76.58
Total	**100366**	**100**
C. Literacy Levels		
Total Literate Population	69612	69.36
Others	30754	30.64

Details	Population	Percentage
Total	**100366**	**100**
D. Occupational structure		
Main workers	49466	49.30
Marginal workers	5157	5.10
Total Workers	**54623**	**54.40**
Total Non-workers	**45743**	**45.60**
Total	**100366**	**100**

The total population of these 35 rural villages and 2 urban areas is 100366 in which the male population is 49528 (49.35%) and the female population is 50838 (50.65%). This shows that the male and female population ratio is almost equal. Among the total population 0.15% belong to Scheduled Tribes, 23.27% are Scheduled Caste and the balance 76.58% people belong to other castes. Among the total population, 69.36% of the people are literate.

Among the total population, 54.75% are literate males and 45.25% are literate females. This shows that the male literates are slightly more than the female literates. Totally, the illiterate constitute 30.64% of which the female cover 62.89% and the male 37.11%. Illiteracy in women is more than in the male population.

The village wise population, literacy levels and occupational structure details area given in **Annexures 4 and 5.** The demographic structure within the buffer zone is shown diagrammatically in **Figure No – 3.2.**

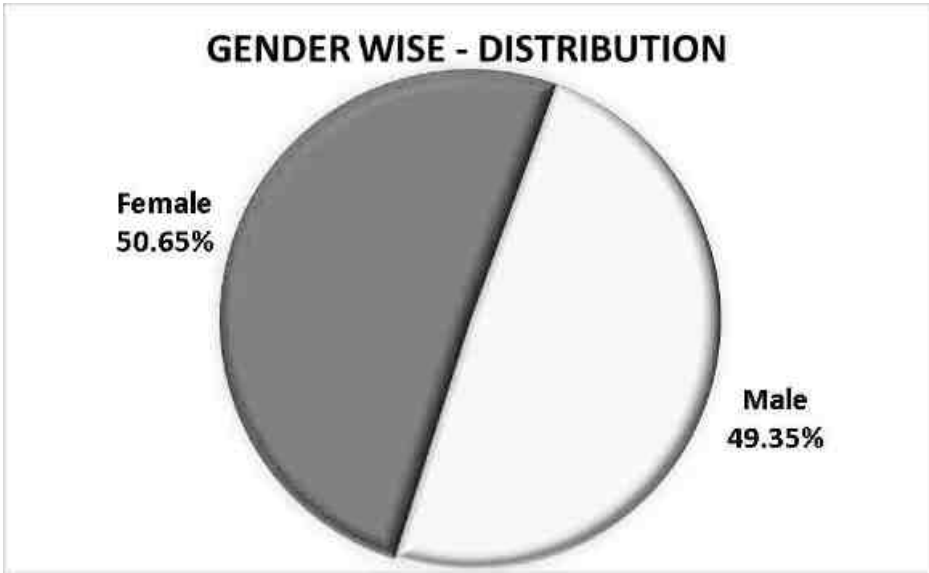
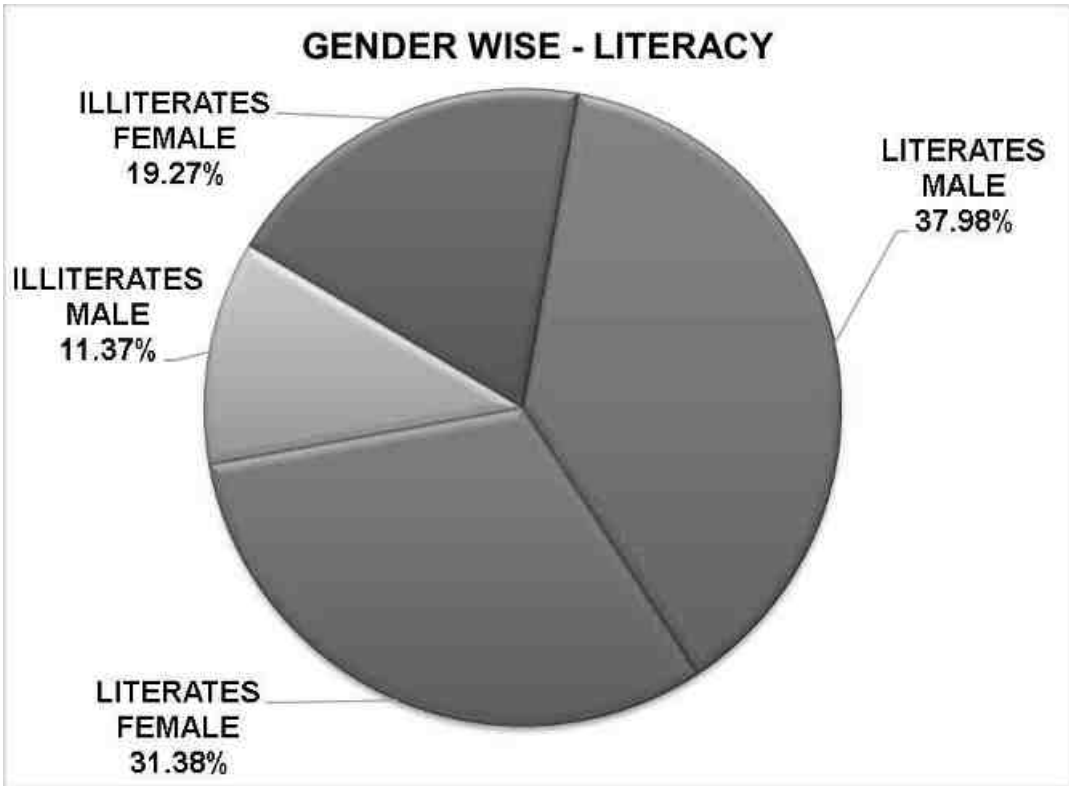
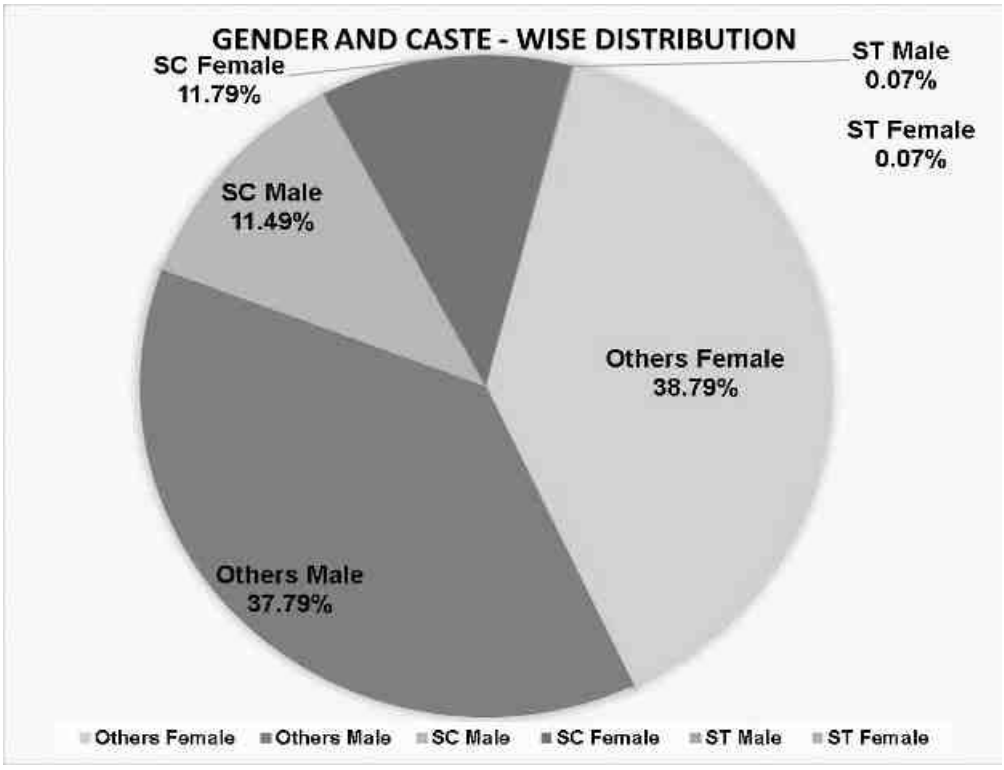
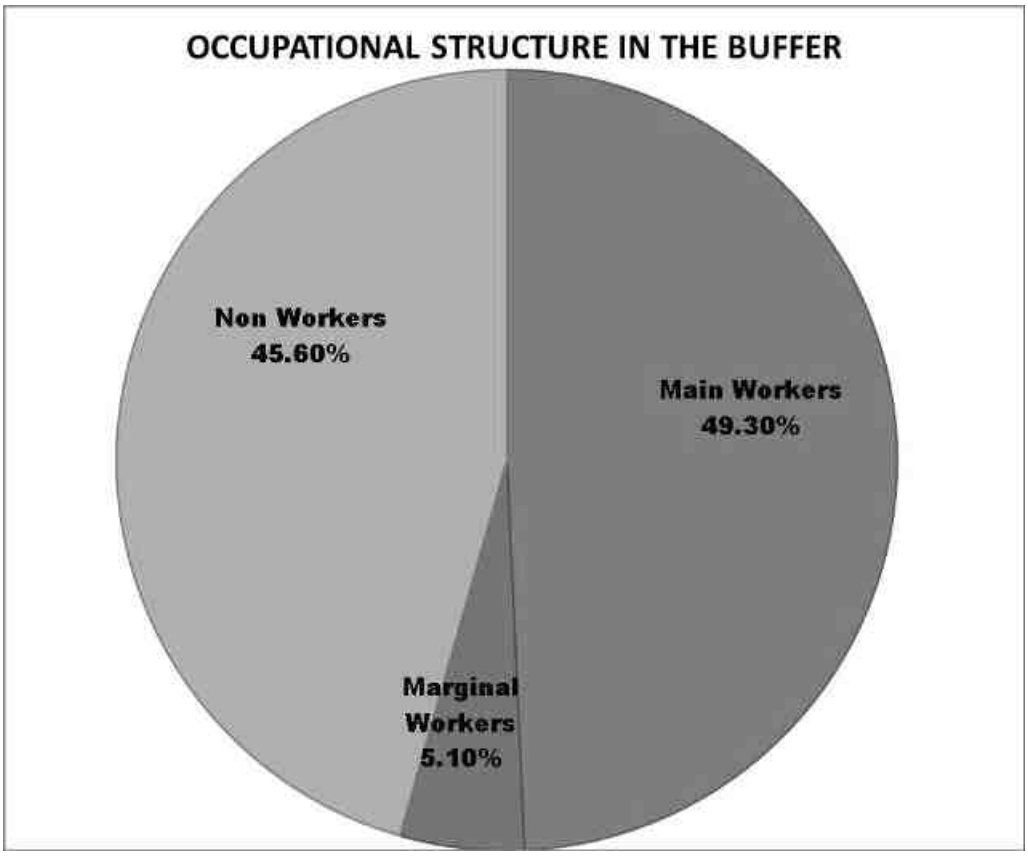


Figure 3.2: Demographic Structure in Buffer Zone







3.2.3 DETAILS OF AMENITIES:

Based on 2011 census data, regarding the educational facilities, there are totally 73 Primary Schools functioning in these 35 rural villages. 13 villages have 1 primary schools, 13 villages have 2 primary schools, 4 villages have 3 primary schools, 3 villages has 4 primary schools ,2 villages have 5 primary schools.

Table 3.4: Primary Schools in the Buffer Zone Rural Villages

S.No	No of Rural Villages	Number of primary schools	Totals
1	0	0	0
2	13	1	13
3	13	2	26
4	4	3	12
5	3	4	12
6	2	5	10
Total	**35**		**73**

Table 3.5: Education Facility Availability

PARTICULARS	Available in village
Govt Primary School	31
Govt Middle School	21
Govt Secondary School	8
Govt Senior Secondary School	6
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 facilties are available in nearby Vembakottai & sivakasi city corporation.

Table 3.6: Healthcare Amenities Availability

PARTICULARS	Available in village
Community Health Centre	1
Primary Health Centre	2
Primary Heallth Sub Centre	19
Maternity And Child Welfare Centre	4
TB Clinic	2
Hospital Allopathic	0
Hospiltal Alternative Medicine	0
Dispensary	2
Veterinary Hospital	4
Mobile Health Clinic	0
Family Welfare Centre	2

Better Healthcare facilties are available in nearby Vembakottai & sivakasi City Corporation.

Table 3.7: Infrastructure Facilities

Particulars	Available in village
Tap Water-Treated	30
Covered Well	10
Hand Pump	20
Tube Wells/Borehole	28
Post office	3
bus services	33
Commercial Bank	4
Cooperative bank	10

The details of the educational, medical and infrastructural facilities available in the buffer zone is provided in **Annexures- 6-8..**

3.2.4 SAMPLE SURVEY:

Studyof the nearby villages to know about socio-economic conditions, including aspirations and requirements of the people show the following:

- Predominantly the study area is rocky, dry, barren land with predominant mining and allied activites.
- Due to scanty rainfall, poor soil condition and less ground water availability, very little plantation and agriculture are observed in the area.
- The study area is predominantly fallow land with thorny bushes.
- Other allied activities livestock rearing and poultry farming are also found.
- Majority of the people are small farmers
- Agriculture is predominantly rainfed and the irrigation is available only during rainy period, during the rest of the time locals have less employment opportunities. Other occupations include Mining worker, construction workers, vendors, etc.
- Bore well is the main source for drinking water. There are OHT's, Ground level tanks, public taps are available.
- Reasonably better amenities like approach road bus facility, electricity, mobile phone connectivity, Public Distribution System , banks etc are available.

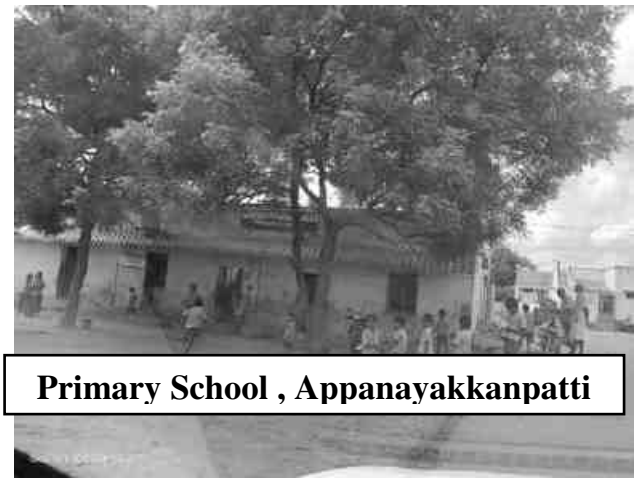
Anganwadi, Appanayakkanpatti

Community Hall,Ramalingapuram

Library, Appanayakkanpatti

OHT, Kundanpatti

Panchyat Office Appanayakkanpatti



Primary School , Appanayakkanpatti

Primary School, Kundanpatti

Primary School, Vadakanmarinadu

Sub Library, Appanayakkanpatti

Ration Shop, Appanayakkanpatti

3.3 EXISTING ENVIRONMENTAL QUALITY

3.3.1 MICRO-METEOROLOGY

3.3.1.1 General:

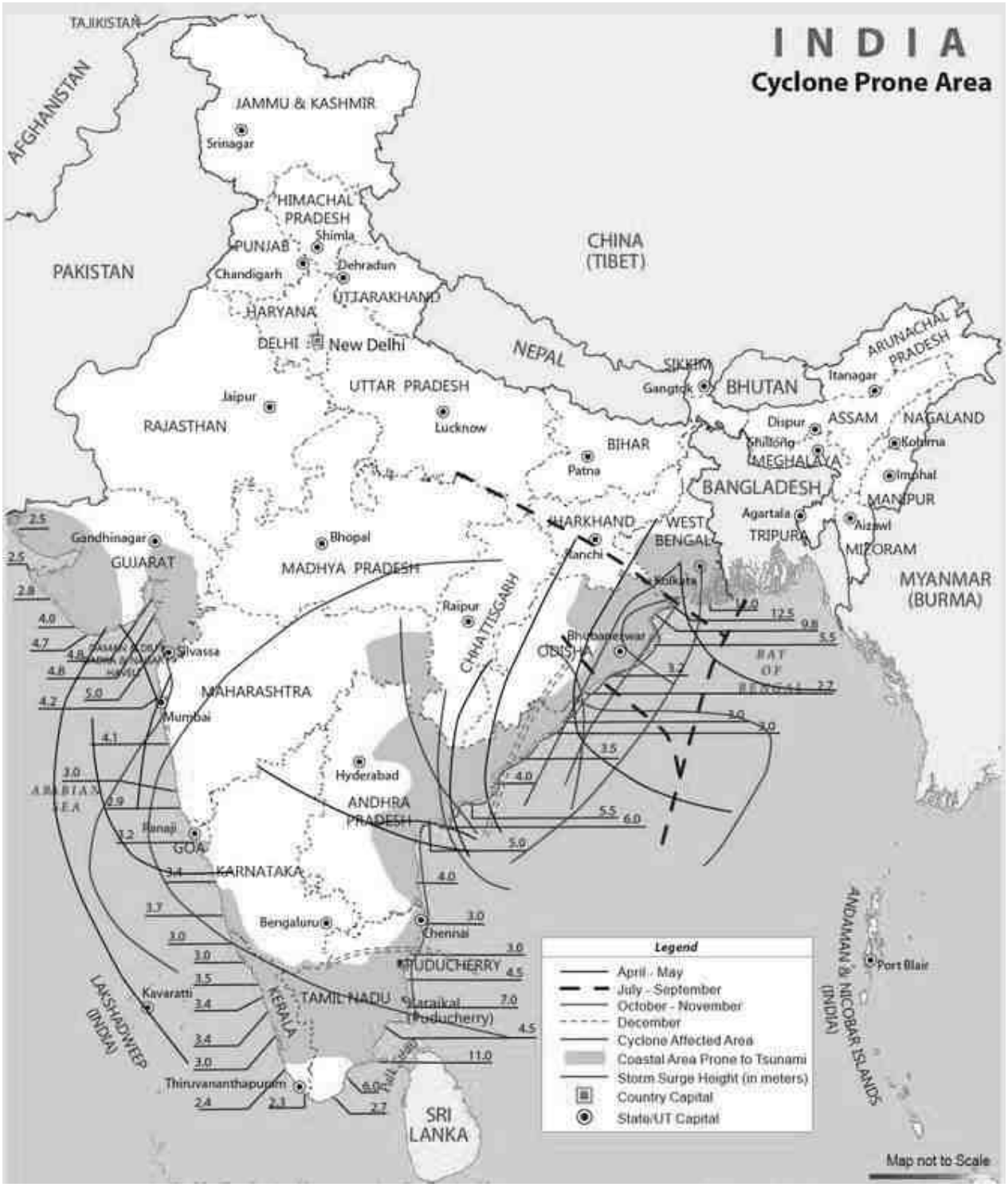
The meteorological conditions in an area regulate the dispersion of air pollutants being released into the atmosphere. The principal variables are horizontal convective transport i.e. wind speed and direction and vertical convective transport, i.e. mixing height, stability class and topography of the 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 15º and 18 º 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.

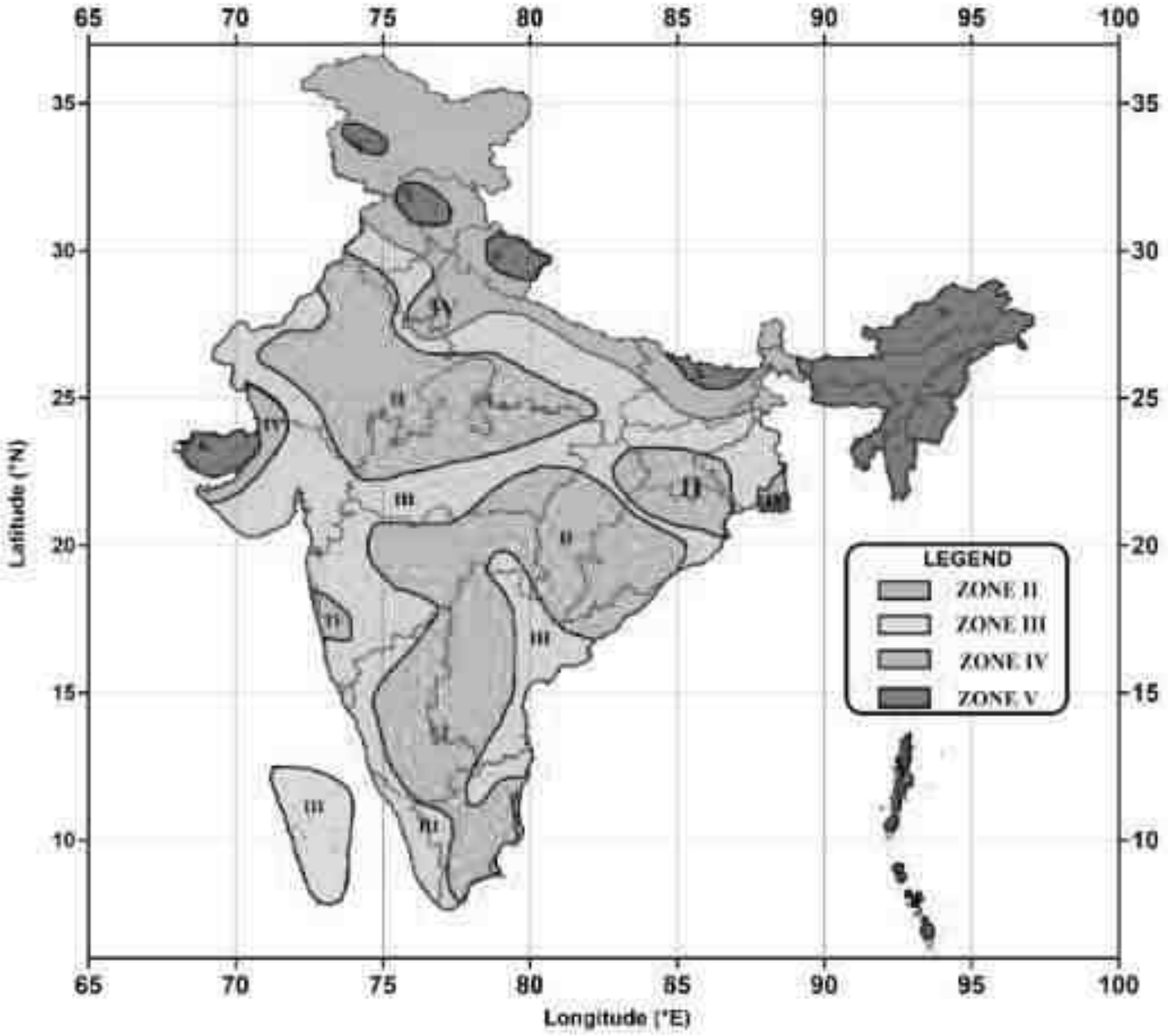
Figure 3.3: History of Cyclonic Storms



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



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 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

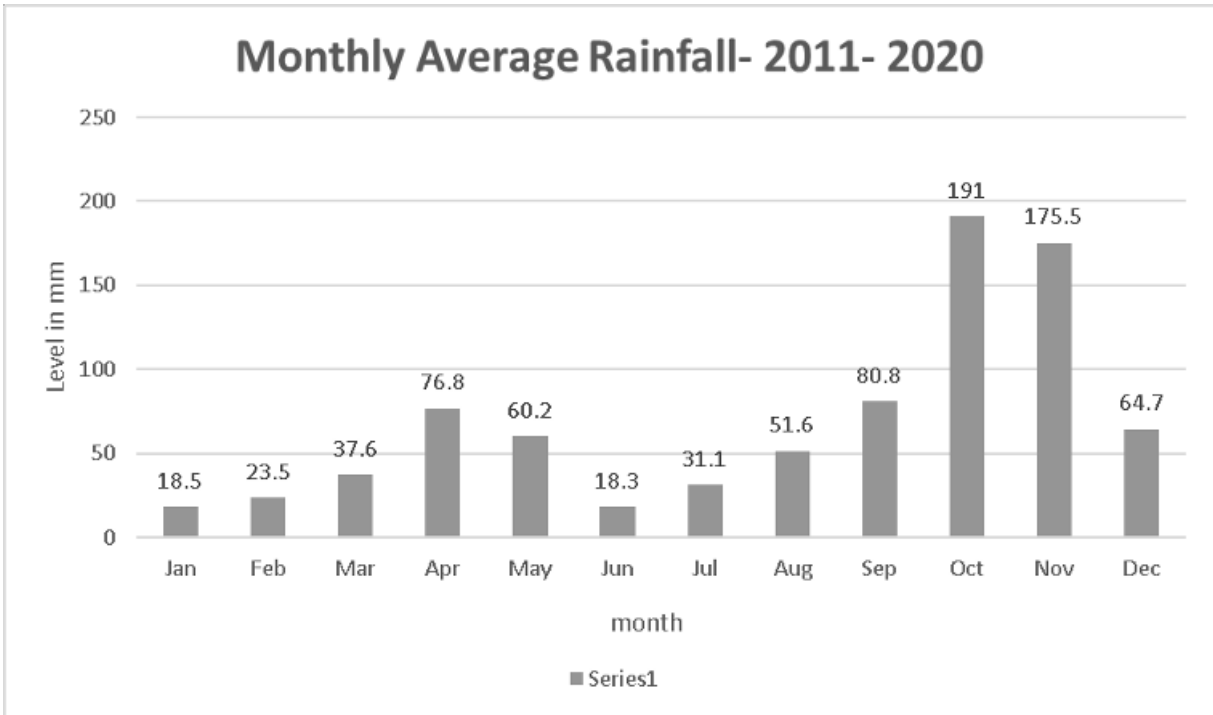
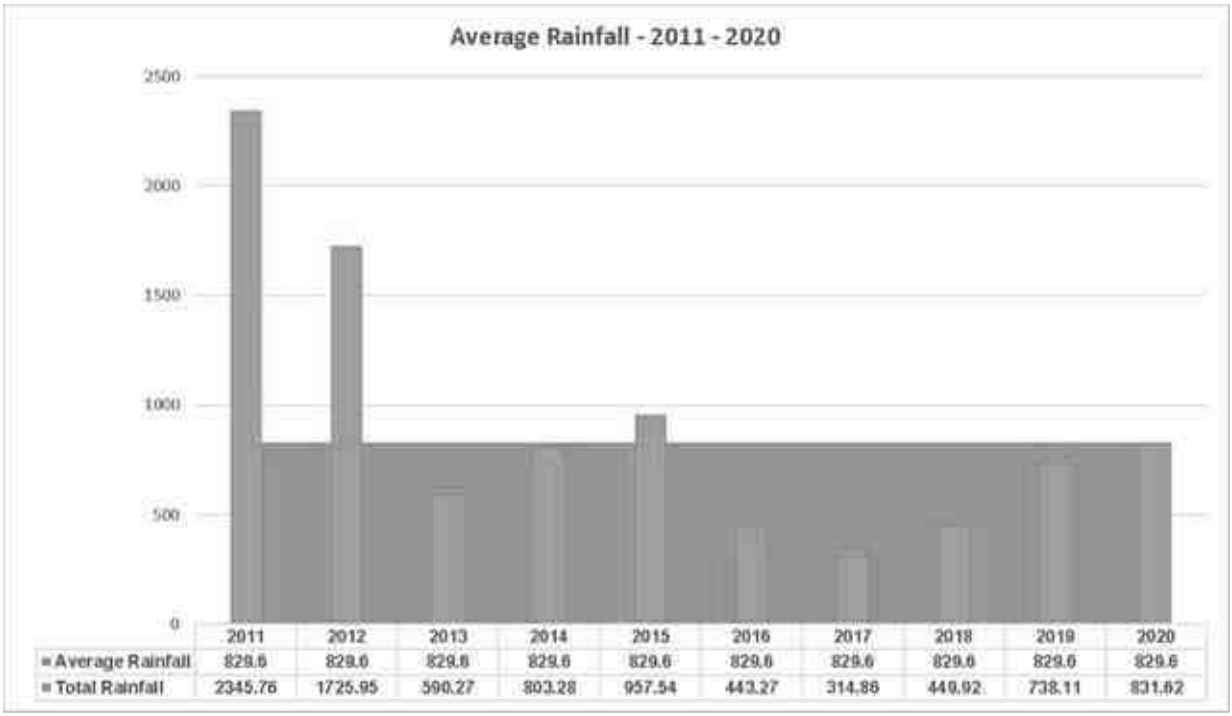


Figure 3.6: Average Annual Rainfall



3.3.1.3 SITE SPECIFIC METEOROLOGICAL DATA:

Micrometeorology and microclimatic parameters of wind velocity, wind direction, ambient temperature, relative humidity, were collected throughout the monitoring period.

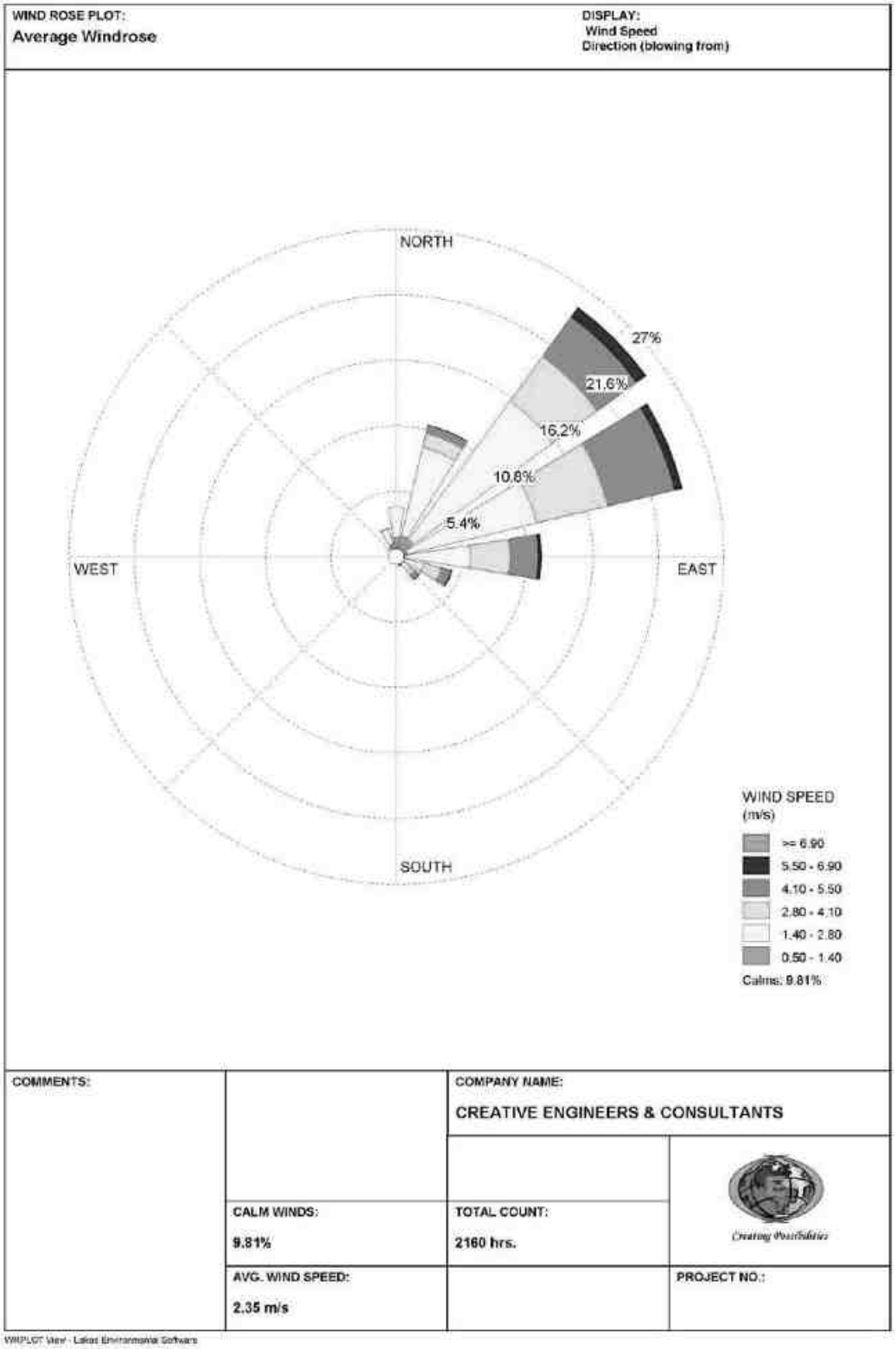
DATA ANALYSIS:

The temperature in the area during the study period ranged from 19.0ºC to 36.0ºC while the relative humidity varied between 21.8 - 99%. The wind speed during the study period ranged from <1.8 to 25.9 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: Winter Season (Dec 2021 to Feb 2022)			
S.NO	**PARAMETERS**	**MIN**	**MAX**
1	Temperature In ^{0}c	19.0	36.0
2	Humidity in %	21.8	99.0
3	Wind speed in km/hr	<1.8	25.9
4	Predominant wind direction from	NE	

Figure 3.7: Average Wind Rose



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**	Winter Season (Dec 2021 – Feb 2022)
2.	**Monitoring Location**	The location map showing Ambient Air Quality study stations are shown in **Figure No- 3.8.**
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
	f. Silica	Colorimetric (Molybdate Method) NIOSH 7601 -2003
4.	**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 Core Zone	-	-
2	A2	Appanayakkanpatti Village	2.1km	SW
3	A3	Akkaraipatti Village	1.2km	NW
4	A4	Kundampatti Village	1.5km	S
5	A5	Ammiyarpatti Village	1.2km	NE
6	A6	Avudaiyarpuram Village	2.4km	SW

Figure 3.8: Ambient Air Quality Study Stations

Table 3.12: Ambient Air Quality Data

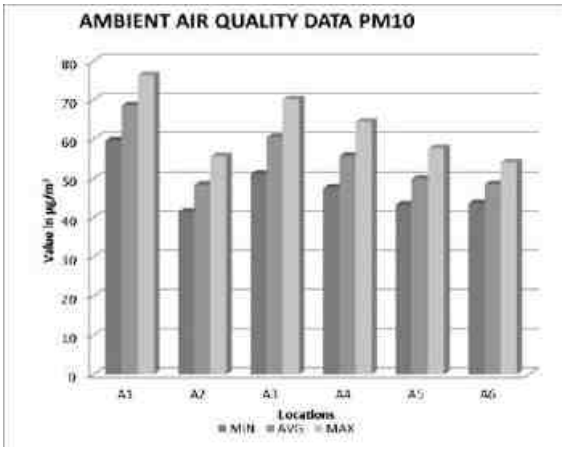
All Value in µg/m^3

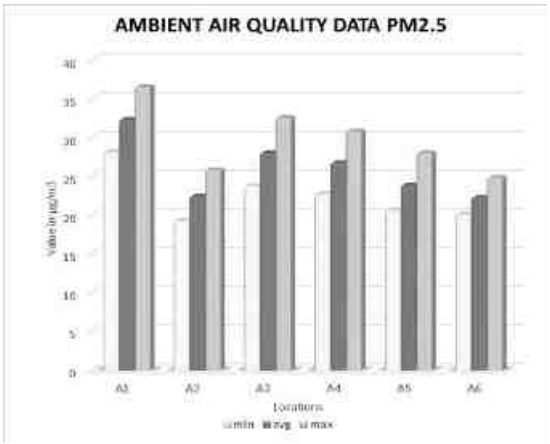
PARAMETERS	Cat.*	PM_{10}			$PM_{2.5}$			SO_2			NO_2		
LOCATIONS		**MIN**	**AVG**	**MAX**	**MIN**	**AVG**	**MAX**	**MIN**	**AVG**	**MAX**	**MIN**	**AVG**	**MAX**
A1- Near Core Zone	I	59.6	68.6	76.3	28.2	32.4	36.6	5.3	7.4	9.1	8.5	10.7	12.7
A2- Appanayakkanpatti Village	R	41.4	48.4	55.6	19.3	22.5	25.9	4.5	5.7	6.8	7.6	8.8	10.1
A3- Akkaraipatti Village	R	51.2	60.5	70.2	23.8	28.1	32.6	5.1	6.5	8.8	8.2	10.0	12.3
A4- Kundampatti Village	R	47.6	55.7	64.4	22.8	26.8	30.9	4.8	6.1	7.5	7.7	9.0	10.8
A5- Ammiyarpatti Village	R	43.3	50.0	57.6	20.7	23.9	28.1	4.6	5.9	7.2	7.1	8.4	10.6
A6- Avudaiyarpuram Village	R	43.7	48.5	54.1	20.1	22.3	24.9	4.1	5.4	6.9	7.3	8.6	9.9

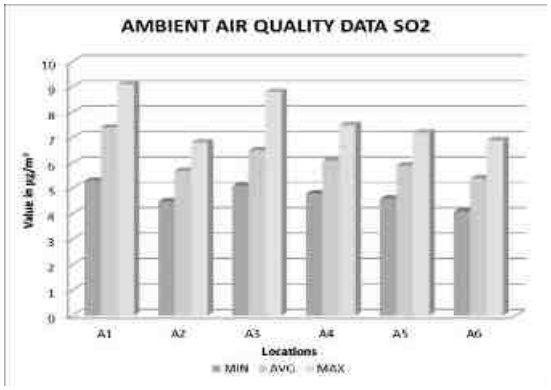
NAAQ Limits		PM_{10}	$PM_{2.5}$	SO_2	NO_2
	*	100	60	80	80
	**	100	60	80	80

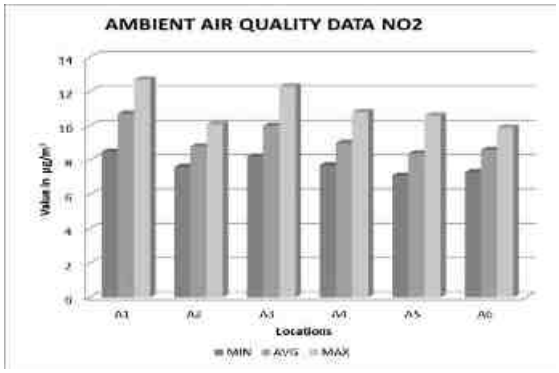
***Note:** Category: * - Industrial, Residential, Rural and other area, ** – Ecologically Sensitive Area (notified by Central Government)*

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 PM_{10} values were in the range of 41.4-76.3 µg/m^3. $PM_{2.5}$ values were in the range of 19.3-36.6 µg/m^3. SO_2 levels were ranging from 4.1– 9.1 µg/m^3. NO_2 levels were ranging from 7.1-12.7 µg/m^3.

The existing Ambient Air Quality levels for PM_{10}, $PM_{2.5}$, SO_2 and NO_2, are within the NAAQ standards prescribed CPCB limits of 100 µg/m^3, 60 µg/m^3, 80 µg/m^3 & 80 µg/m^3. 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/m^3)

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**		Winter Season (Dec 2021 – Feb 2022)		
2.	**Monitoring Location**		The location map showing water sampling locations are given in **Figure No.3.10.**		
	Code	**Location**	**Sample Type**	**Distance**	**Direction**
	W1	Near Core Zone	**Bore Well**	-	-
	W2	Appanayakkanpatti Village	Borewell	2.1km	SW
	W3	Akkaraipatti Village	Borewell	1.2km	NW
	W4	Kundampatti Village	Borewell	1.5km	S
	W5	Ammiyarpatti Village	Borewell	1.2km	NE
	W6	Avudaiyarpuram Village	Borewell	2.4km	SW
3.	**Methodology**		Sampling - IS 3025 Part - I		
			Analysis – IS 3025 relevant parts / APHA 23rd Edition		

Figure 3.10: Location of Water Sampling Stations

Table 3.14: Summary of Water Quality Data

Season	Winter Season (Dec 2021 – Feb 2022)	
Monitoring Locations	6 locations	
Parameters	**Range of values**	**Limits***
pH at 25 ˚C	7.29 – 7.69	**6.5-8.5**
Total Dissolved Solids, mg/L	296 – 590	**2000**
Chloride as Cl-, mg/L	38.5 – 162	**1000**
Total Hardness (as CaCO3), mg/L	190 – 395	**600**
Total Alkalinity (as CaCO3), mg/L	277– 310	**600**
Sulphates as SO42-, mg/L	15.20 – 186	**400**
Iron as Fe, mg/L	BDL(D.L - 0.01) – 0.07	**0.3**
Nitrate as NO3, mg/L	BDL(D.L – 1.0) – 5.45	**45**
Fluoride as F, mg/L	BDL(D.L – 0.1) – 0.53	**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 7.29 – 7.69 TDS values were in the range of 296 – 590mg/L. Chloride values were ranging from 38.5 – 162mg/L. Iron content was found to be in the range BDL(D.L - 0.01) – 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:

Table 3.15: Noise Level Monitoring

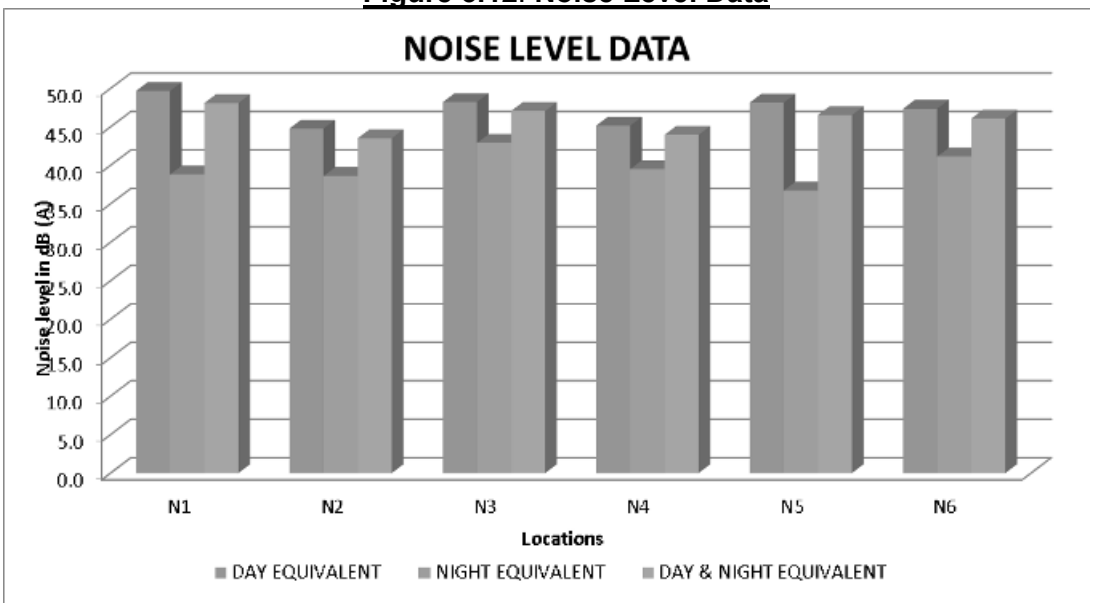
1.	**Monitoring Period**	Winter Season (Dec 2021 – Feb 2022)		
2.	**Monitoring Location**	The location map showing noise monitoring locations are given in **Figure No.3.11.**		
	Code	**Location**	**Distance**	**Direction**
	N1	Near Core Zone	-	-
	N2	Appanayakkanpatti Village	2.1km	SW
	N3	Akkaraipatti Village	1.2km	NW
	N4	Kundampatti Village	1.5km	S
	N5	Ammiyarpatti Village	1.2km	NE
	N6	Avudaiyarpuram Village	2.4km	SW
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		

Figure 3.11: Location of Noise Sampling Stations

Table 3.16: Ambient Noise Level in dB (A)

Date and time of monitoring	N1	N2	N3	N4	N5	N6
Day Equivalent	49.7	44.8	48.2	45.2	48.2	47.4
Night Equivalent	38.8	38.6	42.9	39.5	36.7	41.2
Day & Night Equivalent	48.1	43.5	47.1	44.0	46.5	46.1
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-3.16**.The noise values for all above locations are shown in a comparative chart given in **Figure No - 3.12.** In the buffer zone, day Equivalent Noise (Leq-d) noise levels were ranging from 44.8 dB(A) to 49.7 dB(A) and night Equivalent Noise (Leq-d) levels ranged between 36.7 dB(A) to 42.9 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.

Table 3.17: Soil Quality Monitoring

1.	**Monitoring Period**	Winter Season (Dec 2021 – Feb 2022)		
2.	**Monitoring Location**	The location map showing soil sampling locations are given in **Figure No.3.13.**		
	Code	**Location**	**Distance**	**Direction**
	S1	Near Core Zone	-	-
	S2	Kundampatti Village	1.5km	S
	S3	Ammiyarpatti Village	1.2km	NE
3.	**Methodology**	Composite soil samples using sampling augers and field capacity apparatus.		
4.	**Monitoring Frequency**	Once during monitoring period		

Figure 3.13: Location of Soil Sampling Stations

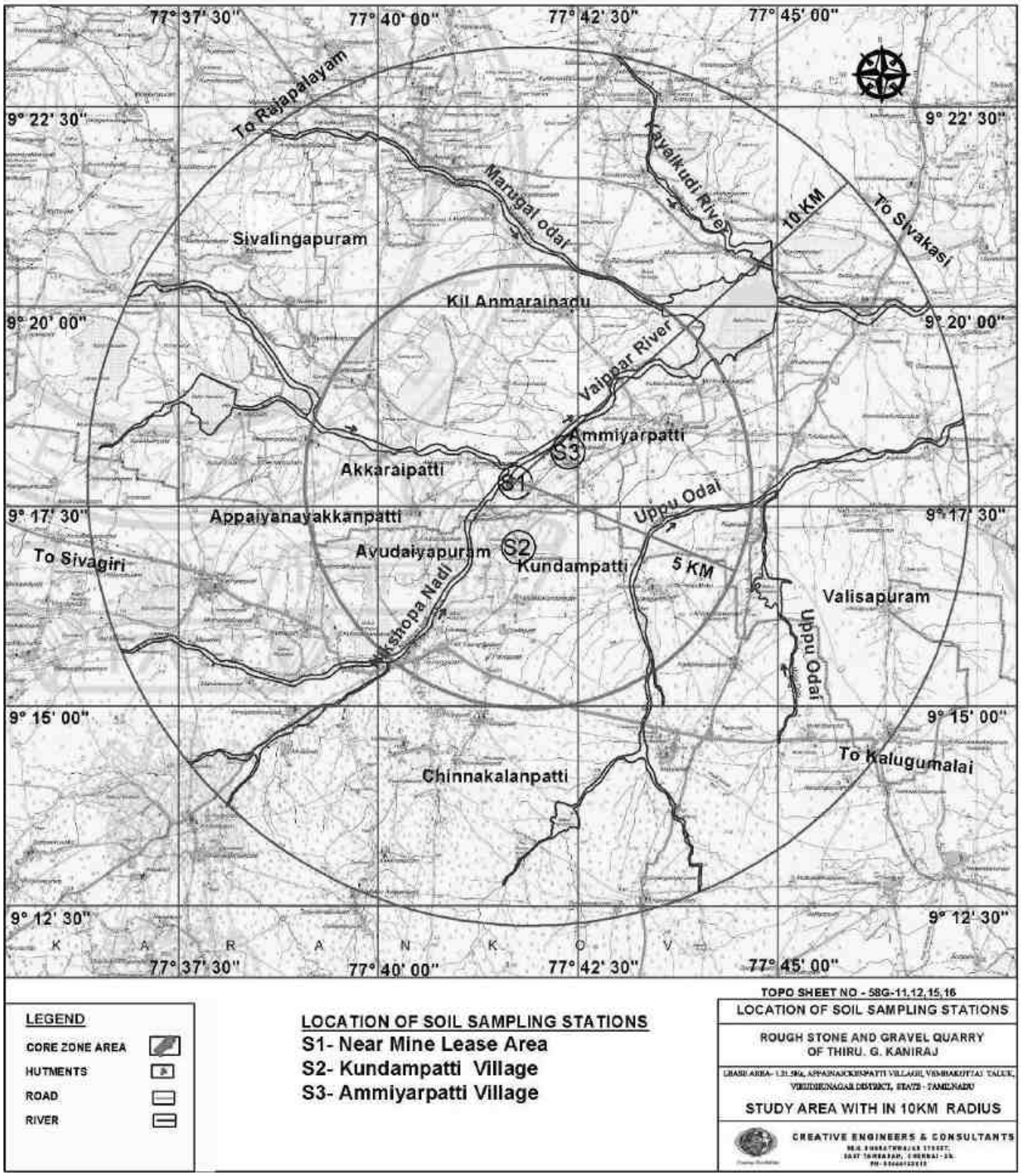


Table 3.18: Soil Quality Data

S.No	Parameters	Unit	S1	S2	S3
1	pH at 25°C	-	6.32	6.21	7.57
2	Electrical Conductivity	(µmhos/cm)	98.54	86.75	82.29
3	Dry matter content	%	95.47	92.68	98.54
4	Water Content	%	4.53	7.32	1.46
5	Organic Matter	%	2.86	2.45	3.21
6	Soil texture	-	Clay loam	Sandy clay loam	loam
7	Grain Size Distribution i. Sand	%	42.57	52.42	36.44
8	ii. Silt	%	28.94	20.57	39.45
9	iii. Clay	%	28.49	27.01	24.11
10	Phosphorous	µg/g	2.98	3.65	2.14
11	Sodium	mg/kg	1035	765	964
12	Potassium	mg/kg	776	610	648
13	Total Nitrogen	mg/kg	730	589	1020
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 6.21 to 7.57 and Electrical Conductivity values were ranging between 82.29 – 98.54 µmhos/cm. Soils are generally sandy clay loam and loam type. Organic matter values were ranging between 2.45 – 3.21 %.

Total Nitrogen values were ranging between 589 - 1020 mg/kg. Phosphorus values were ranging between 2.14 – 3.65 µg/g. Potassium values were ranging between 610 -776 mg/kg. Sodium values were ranging between 765- 1035 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 – 3.18.**

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 Sentinel-2 data shas been used as base data acquired on Feb 2022 **(Figure No.3.14)** 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 3.19: RS satellite image used for the present study

S.No	Type of Data	Date	Generated Map
1.	Sentinel-2	Feb 2022	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 : Sentinel-2 Satellite Data of the Study Area

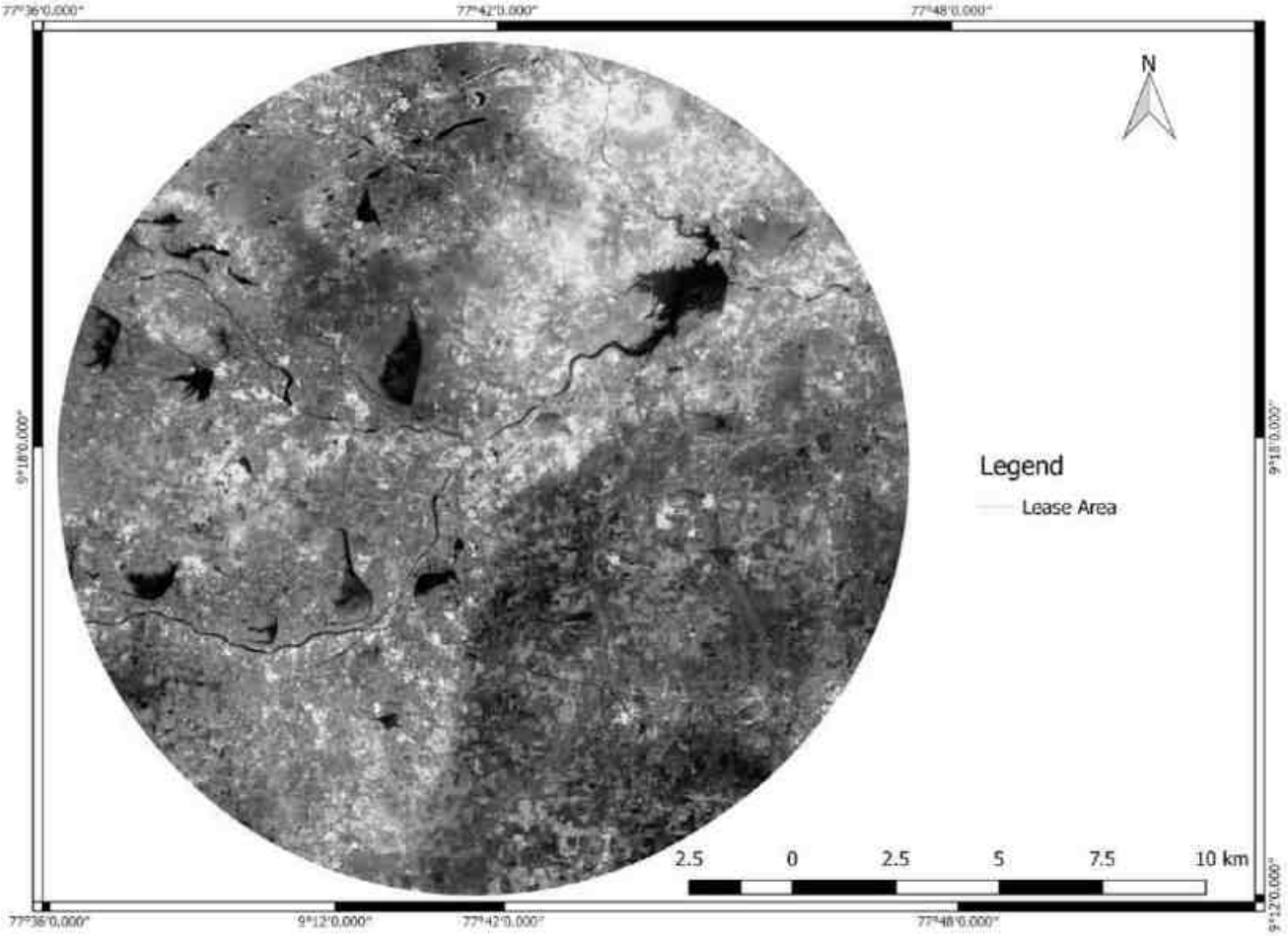
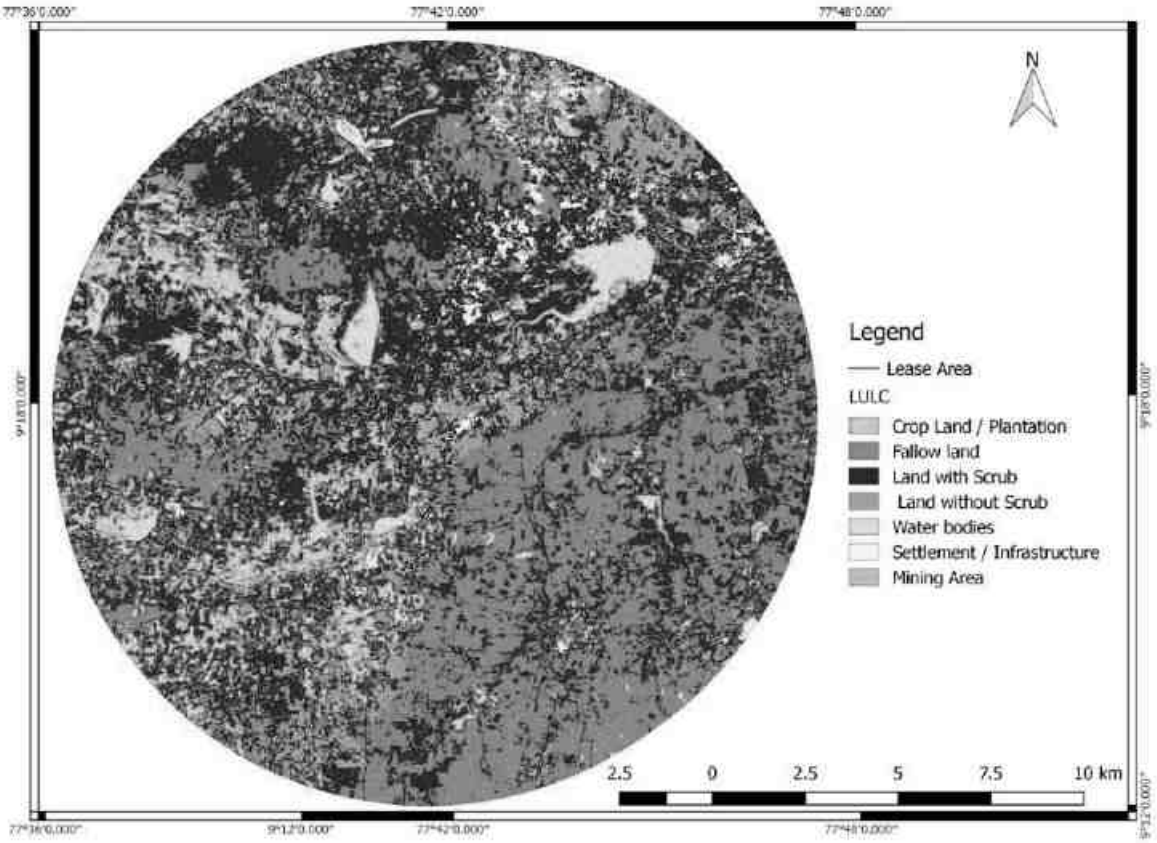


Table 3.20: Major Landuse Units of the Study Area

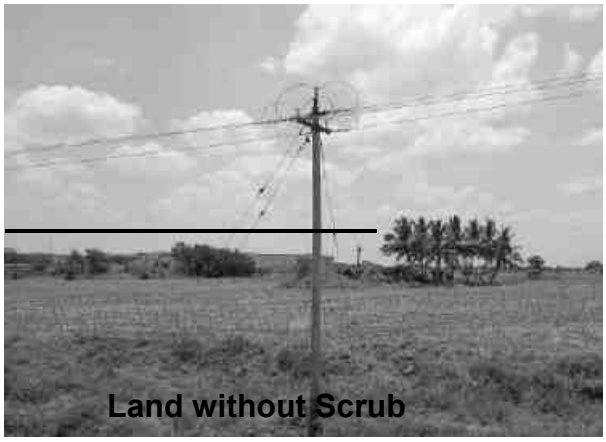
S.No	Major Category	Landuse unit
1	Built-Up Land	Village, Town, Industrial / Vacant Area
2	Agricultural Land	Crop Land Fallow Land Plantation Farm Land
3	Forest Land	Open Scrub Forest
4	Waste Land Mining Area	Land With Scrub/ Land Without Scrub Barren Rocky/ Stony Waste Quarries / Abandoned Quarries
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. 3.15)** 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:

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

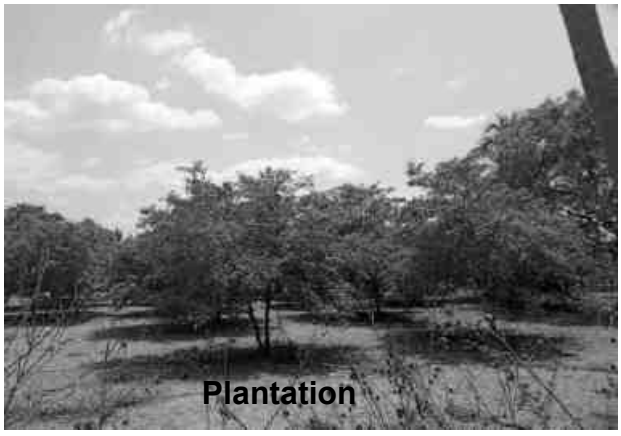


Photograph showing Land use In Buffer Zone



Land without Scrub

Fallow Land



Plantation

Land with Scrub

Crop Land

Table 3.21: Area Estimation of Landuse Categories in Buffer Zone

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	48.72	14.56
2	Fallow Land	101.25	30.25
3	Land With Scrub	139.24	41.61
4	Land Without Scrub	25.36	7.58
5	Water bodies	9.79	2.93
6	Settlement	7.44	2.22
7	Mining Area/ Industries	2.86	0.85
	Total	334.65	100

From the above table it is seen that 14.56 % of the study area is agriculture land and 30.25 % are fallow land. Land with scrub constitutes 41.61 %, lands without scrub constitute 7.58% and waterbodies constitute 2.93% and remaining constitute 3.07 %

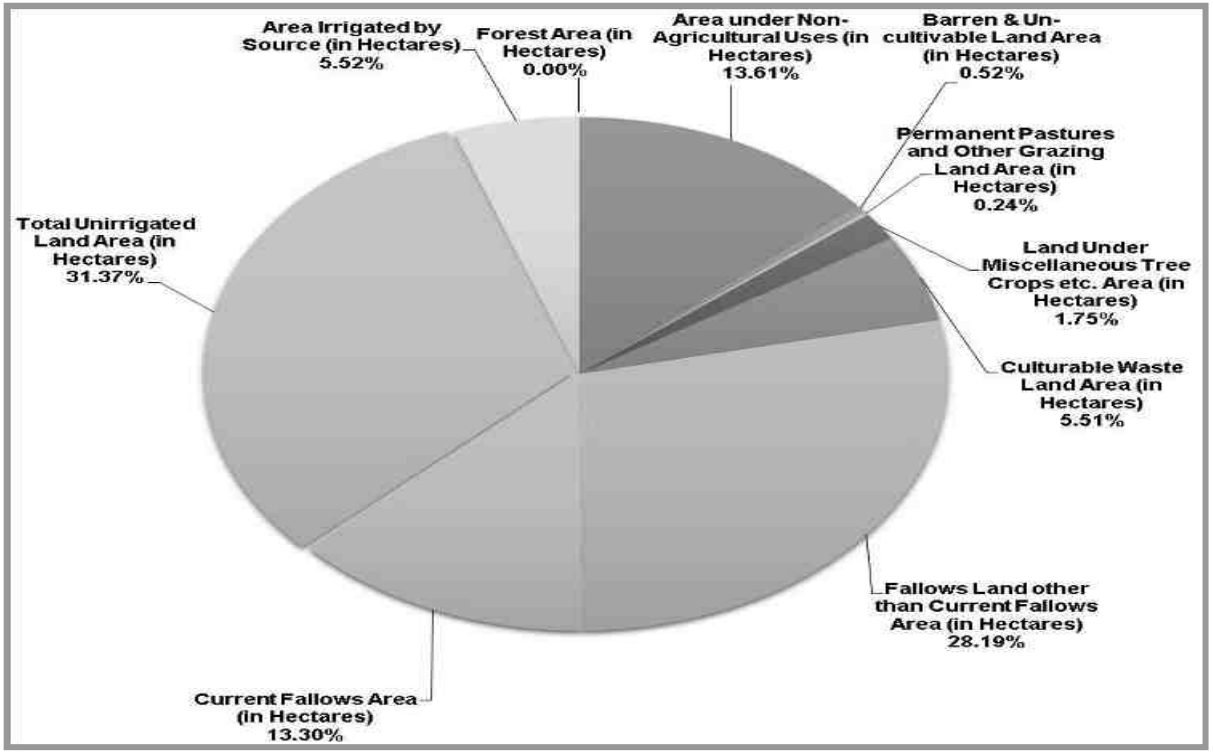
3.4.2 LAND USED BASED ON REVENUE RECORDS:

The lease area falls in Appanayakkanpatti 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 - 3.22**. Village wise land use pattern is provided in **Annexure-11.**

Table 3.22: 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	1582.78	0	206.49	14.57	4.18	0	3.88	0	633.33	416.45	303.88
2 - 5 KM	6360.3	0	1179.92	0.74	6	20	938.2	2376.68	87.91	1357.35	393.5
5-10 KM	29019.95	0	3643.29	176.69	77.89	627.2	1094.08	8042.57	4193.62	9820.41	1344.2
Total	**36963.03**	**0**	**5029.7**	**192**	**88.07**	**647.2**	**2036.16**	**10419.25**	**4914.86**	**11594.21**	**2041.58**

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 <u>Sampling Methodology:</u>

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 quadrate, 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 ith species in the dataset of interest.

Evenness index was calculated as: E = H´/Hmax,

Whereas Hmax = log2 (number of species in the plot)

A.CORE ZONE:

The lease area is a non-forest, private land. Part of lease area is minedout area and remaining area is barren land with thorny bushes & shrubs (Prosopis juliflora). The detailed list of plants found in the core zone are given in **Table no – 3.23.**

Table 3.23: List of Floristic Species in the Core Zone

Sl.No	Species Name	Family	Common Name
Trees			
1	*Prosopis juliflora*	Fabaceae	Cimaikkaruvel
Shrubs			
1	*Calotropis gigantea*	Apocynaceae	Earukku
2	*Lantana camara*	Verbenaceae	Uni
Herbs			
1	*Tridax procumbens*	Asteraceae	Vettukai poondu
2	*Solanum nigrum*	Solanaceae	Manathakkali
Grasses			
1	*Cynodon dactylon*	Poaceae	Arugampillu

B. PROJECT IMPACT ZONE (PIZ-300m BUFFER FROM CORE ZONE):

The PIZ is a dry area and dominated with thorny bushes of Prosopis juliflora followed by mining and crusher plants. A total of 11 tree species from 7 families are recorded in the PIZ. From the above resut it is clearly shows the PIZ is disturbed and has less diversity. Hence it is important to improve the plantation of the study area. The list of plants found in the PIZ are given in **Table no – 3.24.** The detailed list of plants found in the PIZ is given below.

Table 3.24: Phyto-Sociological Survey Of Trees In PIZ

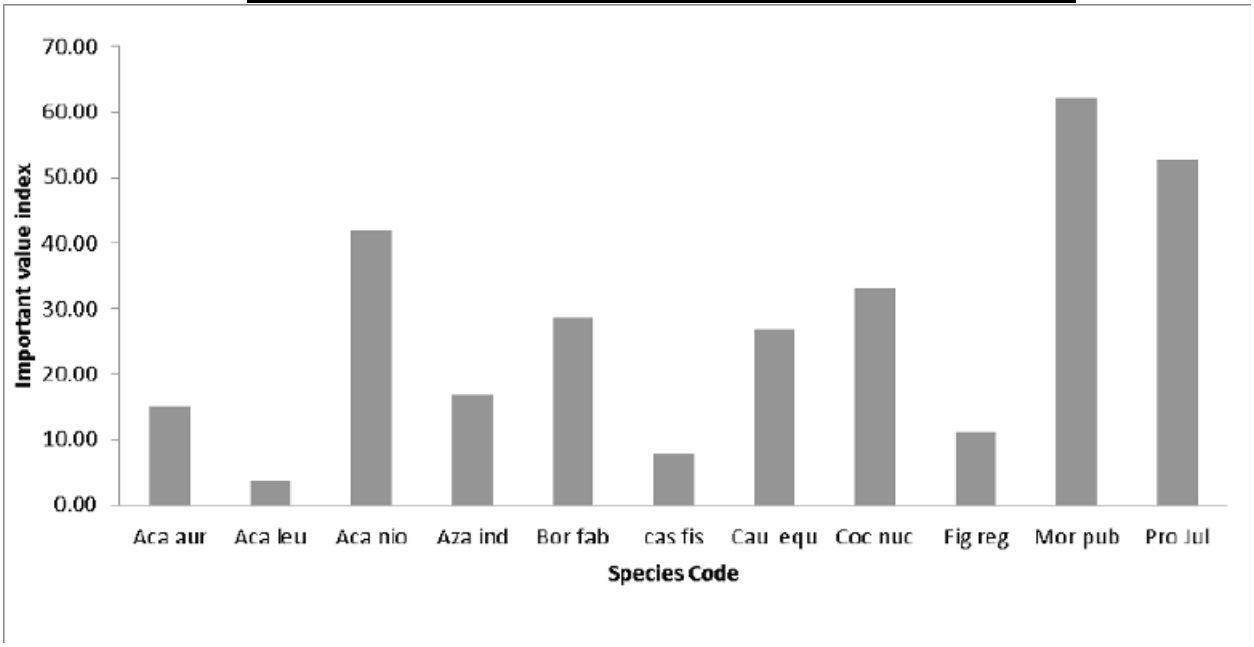
Species	Family	Density	Frequency	BA	**Rd**	**Rdo**	**Rf**	**IVI**
Acacia auriculiformis	Fabaceae	5	4	0.032245	4.42	4.6115	5.882353	14.92
Acacia leucophloea	Fabaceae	1	1	0.009753	0.88	1.3948	1.470588	3.75
Acacia nilotica	Fabaceae	15	10	0.096736	13.27	13.8346	14.70588	41.81
Azadirachta indica	Meliaceae	5	4	0.045541	4.42	6.5131	5.882353	16.82
Borassus flabelliformis	Arecaceae	9	7	0.073447	7.96	10.5040	10.29412	28.76
Cassia fistula	Fabaceae	2	2	0.022492	1.77	3.2167	2.941176	7.93
Casuarina equisetifolia	Casuarinaceae	9	5	0.08121	7.96	11.6142	7.352941	26.93
Cocos nucifera	Arecaceae	8	7	0.110669	7.08	15.8272	10.29412	33.20
Ficus religiosa	Moraceae	2	2	0.043989	1.77	6.2910	2.941176	11.00
Morinda pubescens	Rubiaceae	23	13	0.15914	20.35	22.7593	19.11765	62.23
Prosopis juliflora	Fabaceae	34	13	0.024007	30.09	3.4334	19.11765	52.64

Rd- Relitive Density, Rdo- Relative dominance, Rf – Relative Frequency, IVI – Importance Value Index

Table 3.25: Species Diversity index of trees in PIZ

A		Lower	Upper
Taxa	11	11	11
Individuals	113	113	113
Dominance	0.1719	0.1436	0.2159
Simpson	0.8281	0.7841	0.8564
Shannon	2.005	1.848	2.12
Evenness	0.6748	0.5773	0.7571
Fisher alpha	3.013	3.013	3.013
Berger Parker	0.3009	0.2301	0.3805

Figure 3.17: Species Important Value Index For Trees in PIZ



C.BUFFER ZONE:

The Dominated species are Prosopis juliflora, Azadirachta indica, Borassus flabellifer, Acacia nilotica, Albizia lebbeck, Acacia leucophloea, Acacia auriculiformis, etc. The detailed list of plants found in the Bufferzone is given in **Table no – 3.26.**

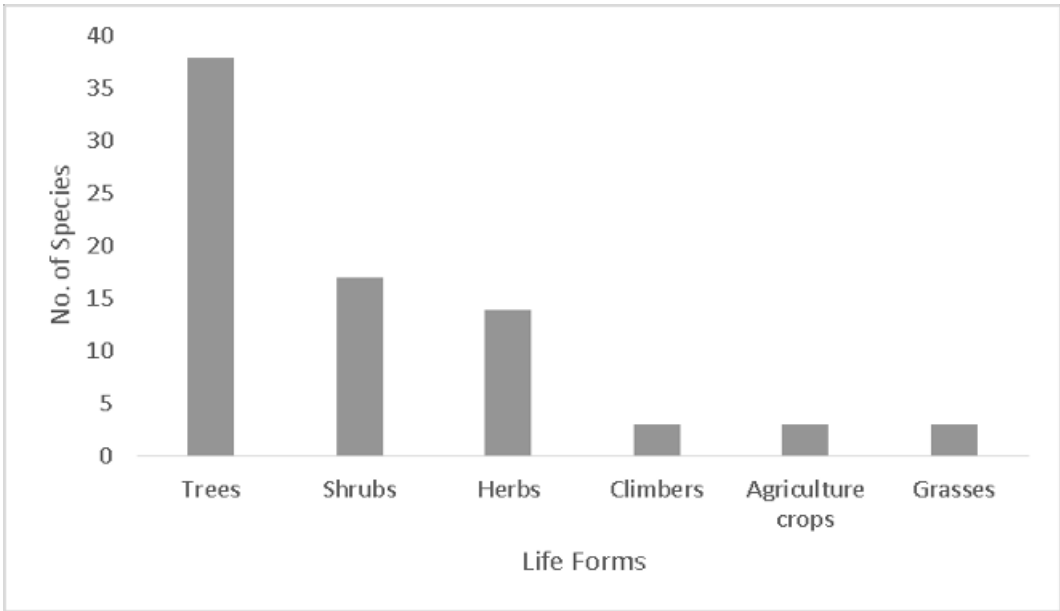
Table 3.26: List of Floristic Species in the Buffer Zone

Sl.No	Species Name	Family	Local Name
Trees			
1	*Aegle marmelos*	Rutaceae	Vilvamaran
2	*Sygygium cumuni*	Myrtaceae	Naval
3	*Delonix regia*	Fabaceae	Gulmohar
4	*Madhuca longifolia*	Sapotaceae	Iluppai
5	*Azadirachta indica*	Meliaceae	Vembu
6	*Bobax ceiba*	Malvaceae	Ilavu
7	*Pithecellobium dulce*	Fabaceae	Kodukkapuli
8	*Leucaena leucocephala*	Fabaceae	Subabul
9	*Tectona grandis*	Verbenaceae	Tekku
10	*Ficus religiosa*	Moraceae	Poarasamaram
11	*Pongamia pinnata*	Fabaceae	Pungai
12	*Gmelina arborea*	Lamiaceae	Kumalaamaram
13	*Musa paradisiaca*	Musaceae	Valzhlai
14	*Cassia fistula*	Fabaceae	Konrai
15	*Peltophorum pterocarpum*	Fabaceae	Kilukiluppai
16	*Citrus limon*	Rutaceae	Lemon
17	*Tamarindus indica*	Fabaceae	Puli
18	*Borassus flabelliformis*	Arecaceae	Panna-maram
19	*Polyalthia longifolia*	Annonaceae	Nietilingam
20	*Prosopis juliflora*	Fabaceae	Seemai karuvel
21	*Mimusops elengi*	Sapotaceae	Magizhamboo
22	*Acacia nilotica*	Fabaceae	Karuvelan
23	*Terminalia arjuna*	Combretaceae	Marudha Maram
24	*Albizia lebbeck*	Fabaceae	Vagai
25	*Thespesia populnea*	Malvaceae	Puvarasu
26	*Carica papaya*	Caricaceae	Pappali
27	*Morinda pubescens*	Rubiaceae	Manjanathi
28	*Morinda tinctoria*	Rubiaceae	Nuna
29	*Casuarina equisetifolia*	Casuarinaceae	Savukku
30	*Acacia auriculiformis*	Fabaceae	Pencile tree
31	*Mangifera indica*	Anacardiaceae	Maamaram
32	*Cocus nucifera*	Arecaceae	Tennai
33	*Moringa oleifera*	Moringaceae	Murungai
34	*Ficus benghalensis*	Moraceae	Aalamaram
35	*Bauhinia purpurea*	Caesalpiniaceae	Mantharai

Sl.No	Species Name	Family	Local Name
36	*Psidium guava*	Myrtaceae	Koyya
37	*Samanea saman*	Fabaceae	Amaivagai
38	*Acacia leucophloea*	Fabaceae	Valvelam
Shrubs			
1	*Lantana camara*	Verbenaceae	Uni
2	*Ziziphus jujuba*	Rhamnaceae	Elanthai
3	*Abutilon indicum*	Malvaceae	Thuthi
4	*Tecoma stans*	Bignoniaceae	Yellow trumpetbush
5	*Jatropha glandulifera*	Euphorbiaceae	Vellaikattukottai
6	*Ricinus communis*	Euphorbiaceae	Amanakku
7	*Justicia adhatoda*	Acanthaceae	Adathoda
8	*Ixora casei*	Rubiaceae	Idlipoo
9	*Nerium indicum*	Apocynaceae	Arali
10	*Lawsonia inermis*	Lythraceae	Maruthani
11	*Aloe vera*	Asphodelaceae	Chotthu kathalai
12	*Vitex negundo*	Verbinaceae	Vanili
13	*Hibiscus rosa-sinensis*	Malvaceae	Semparuthi
14	*Ipomoea carnea*	Convolvulaceae	Pink morning glory
15	*Sida cordifolia*	Malvaceae	Sida plant
16	*Cassia auriculata*	Fabaceae	Aavarampoo
17	*Calotropis gigantea*	Apocynaceae	Earukku
Herbs			
1	*Leucas aspera*	Lamiaceae	Thumbai
2	*Parthenium hysterophorus*	Asteraceae	Parthenium
3	*Acalypha indica*	Amaranthaceae	Kupaimeni keeri
4	*Argemone mexicana*	Papaveraceae	Mexican poppy
5	*Anisomeles indica*	Lamiaceae	marutti
6	*Phyllanthus niruri*	Phyllanthaceae	Keelzhaneeli
7	*Tridax procumbens*	Asteraceae	Vettukai poondu
8	*Sida acuta*	Malvaceae	Palambasi
9	*Anisomeles malabarica*	Lamiaceae	Peyimarutti
10	*Cleome viscosa*	Cleomaceae	Naai velai
11	*Solanum xanthocarpum*	Solanaceae	Kandangkattari
12	*Sida rhombifolia*	Malvaceae	Kurundotti
13	*Acanthospermum hispidum*	Asteraceae	Gokul kanta
14	*Achyranthes aspera*	Amaranthaceae	Nayuruvi
Climber			
1	*Asparagus racemosus*	Asparagaceae	Tannir-vittan
2	*Cissus quadrangularis*	Vitaceae	Pirandai
3	*Abrus precatorius*	Fabaceae	Kundumani
Agricultures Crops			
1	*Gossypium hirsutum*	Malvaceae	Paruththi
2	*Sesbania grandiflora*	Fabaceae	Agati
3	*Musa paradisiaca*	Musaceae	Valzhai

Sl.No	Species Name	Family	Local Name
Grasses			
1	*Cyperus rotundus*	Cyperaceae	korai pullu
2	*Chloris barbata*	Poaceae	Kodai pullu
3	*Cynodon dactylon*	Poaceae	Arugampillu

Figure 3.18: Flora species in the Buffer Zone



3.5.2 FAUNA:

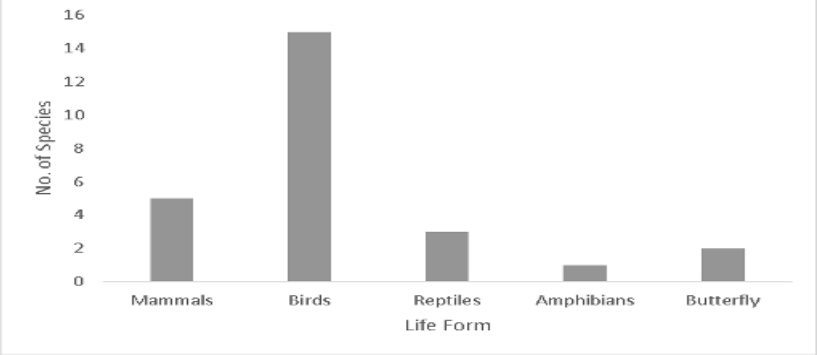
Methodology: Both direct and indirect observation methods were used to survey the fauna. Point Survey Method was used to study the Bird diversity. Besides, discussion with local villagers Collection secondary data from Government records, published reports as well as through discussion with Forest officials, 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 Schedule I animals in the buffer zone area. The list of fauna within the study area is given in **Table No – 3.27**.

Table 3.27: List of Fauna in the Buffer Zone

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

Figure 3.19: Fauna Diversity in the Buffer Zone



3.6 HYDROGEOLOGICAL STUDY:

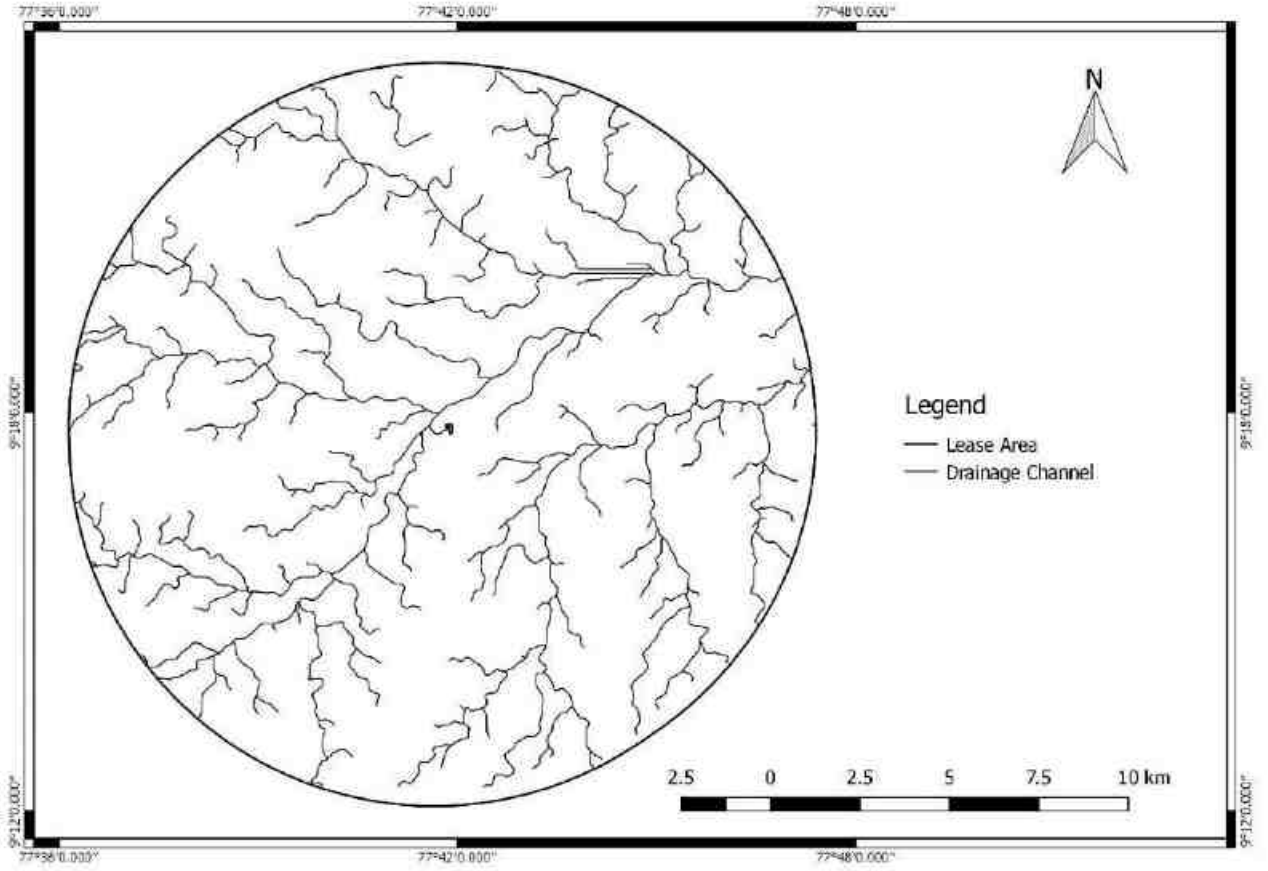
This section delves into the study of the hydrogeological scenario of the study area to evaluate the impact of mining activities on the nearby areas. The study area is located in Appanayakkanpatti Village, Vembakottai Taluk, Virudhunagar District is considered to understand the nature of the general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

3.6.1 PHYSIOGRAPHY AND DRAINAGE:

Physiography: The area applied for mining lease is a gentle plain terrain. Part of the lease area has already been mined out. The topography of the lease area ranges around 95m RL.

Drainage: There is no water body in the core zone. There is a nadi located at a distance of 90m on the western side and Non- perennial Vaippar river lies at a distance of 320m on the northern side. Ammaiyarpatti Tank lies at a distance of 1.2 Km in north eastern side,.

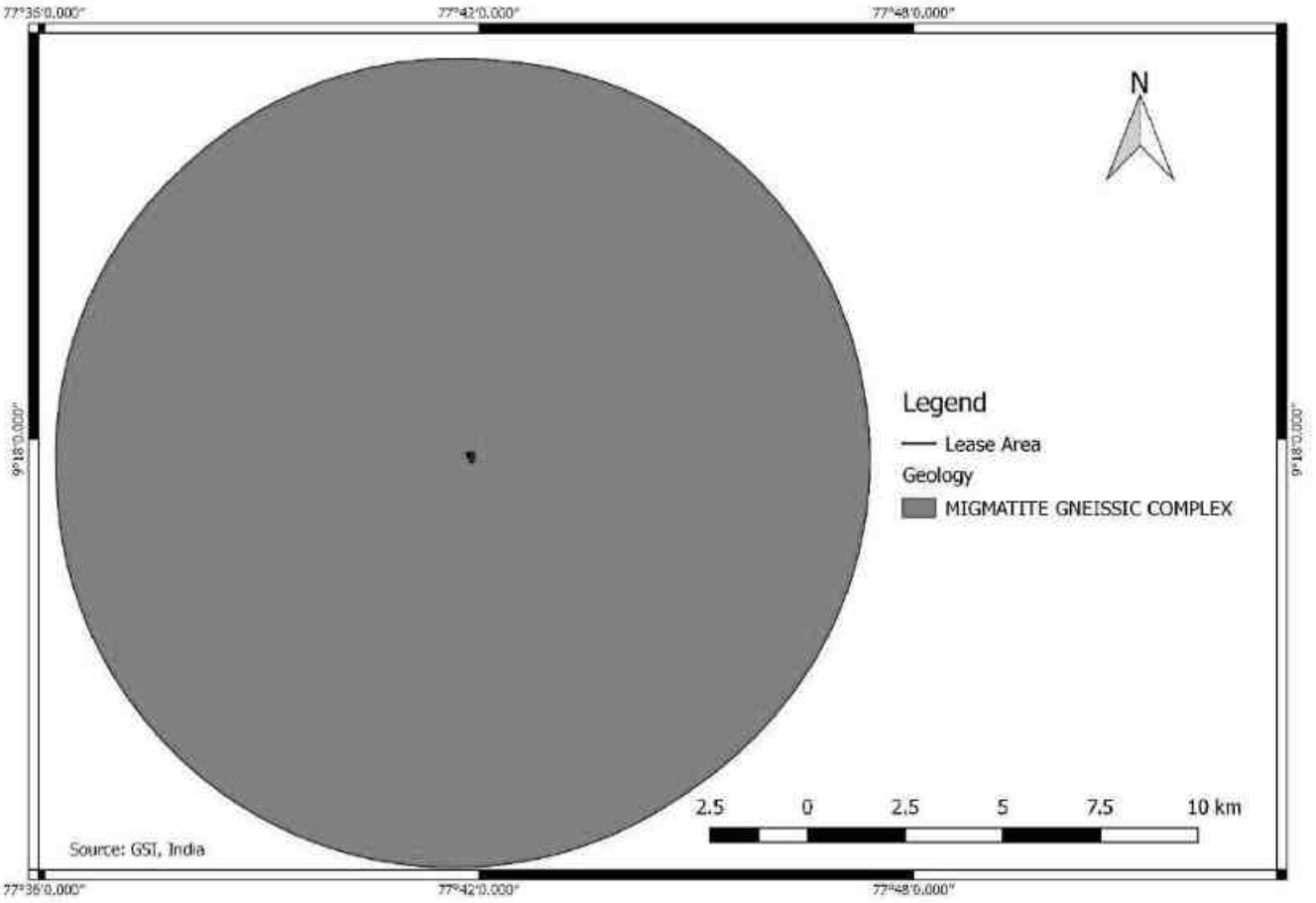
Figure 3.20: Drainage Map



3.6.2 GEOLOGY AND GEOMORPHOLOGY

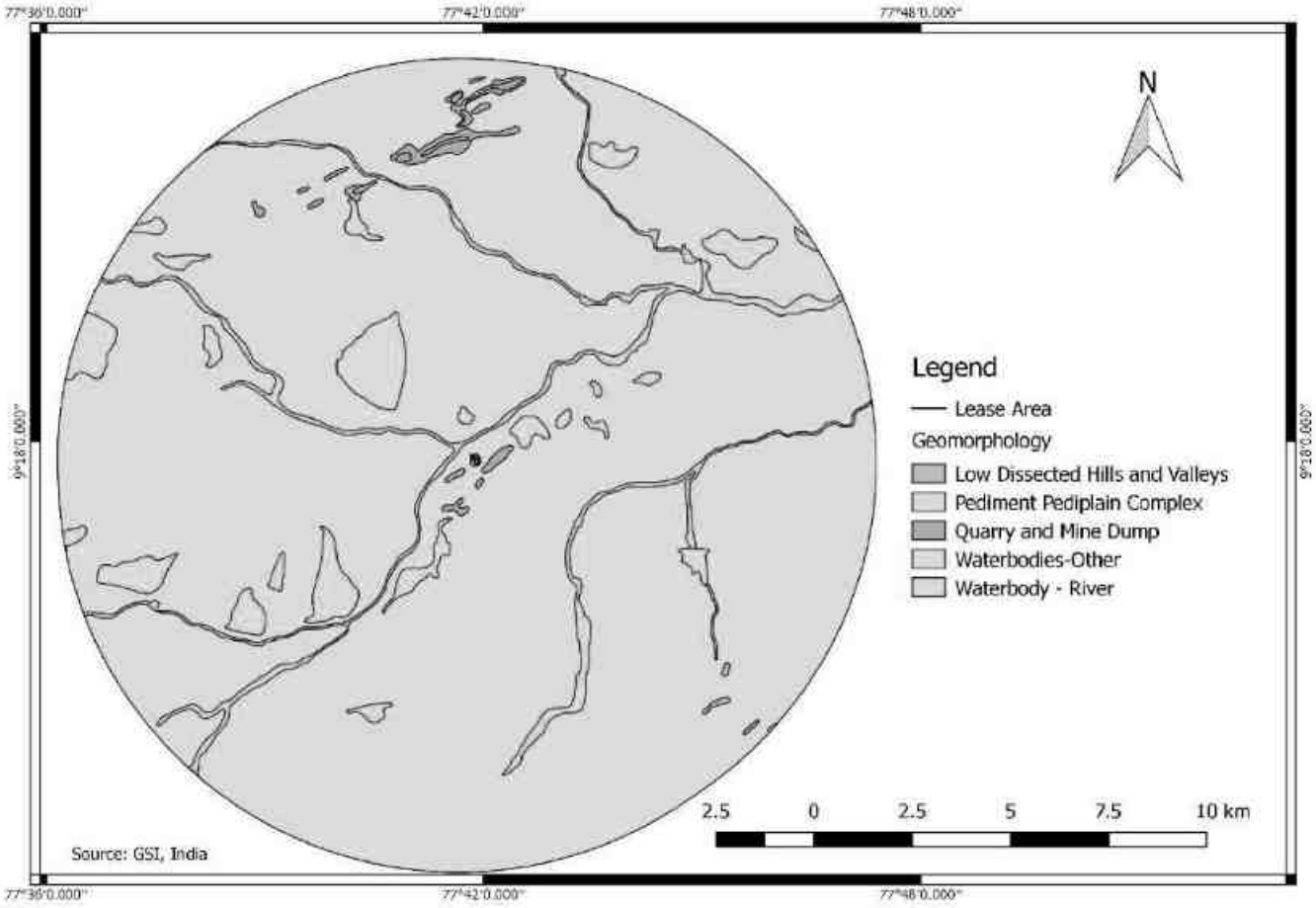
Geology: The type of rock formation in the core and buffered zone is composed of Migmatite Gneissic complex. The lease area falls under Migtmatite Gneissic complex category.

Figure 3.21: Geology Map



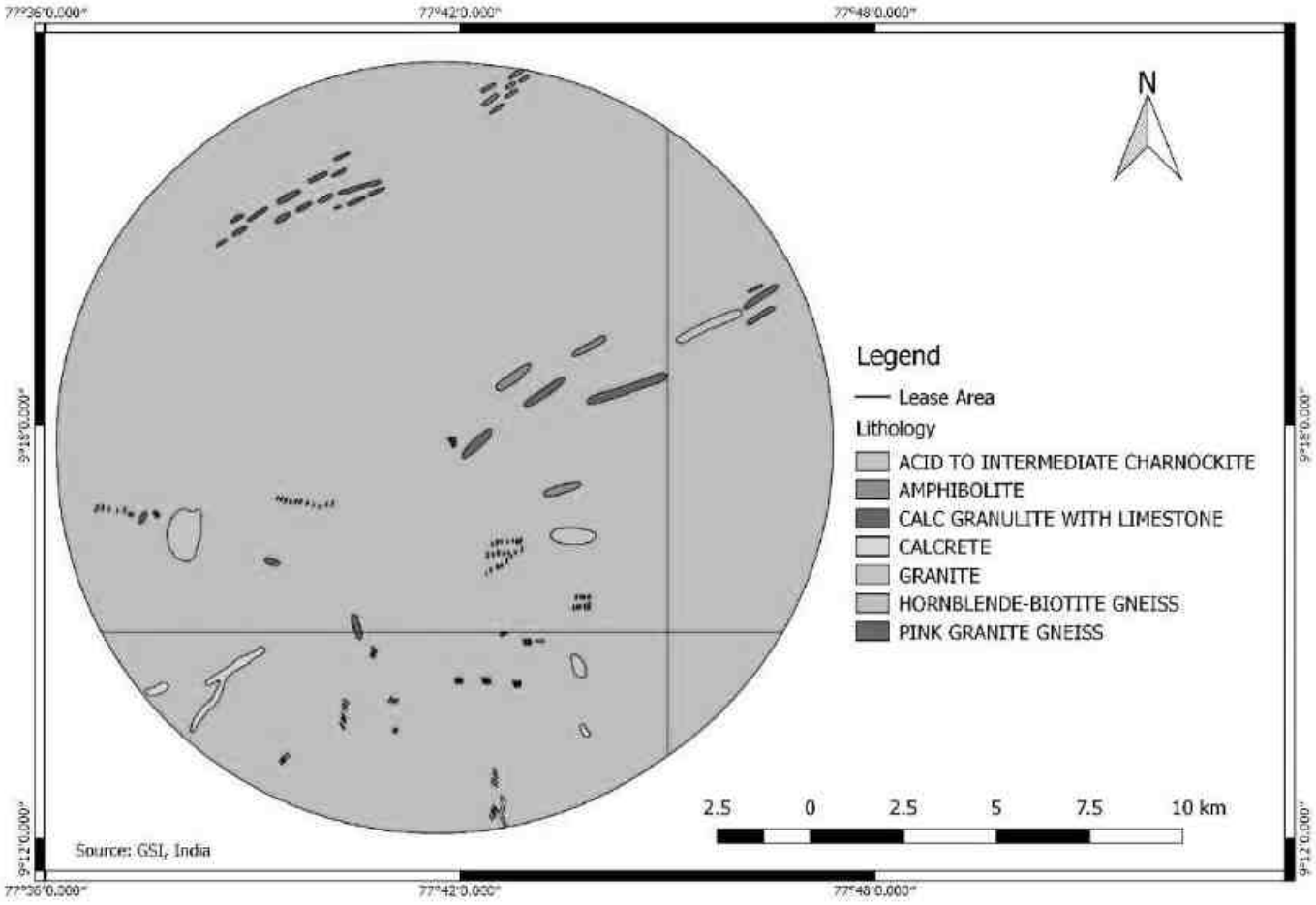
Geomorphology: The geomorphology map of the study derived from the satellite imagery using remote sensing and GIS technique. Predominantly the buffer zone is dominated by Pediment Pediplain complex, and it is the same catergory that the lease area also falls under.

Figure 3.22: Geomorphology Map



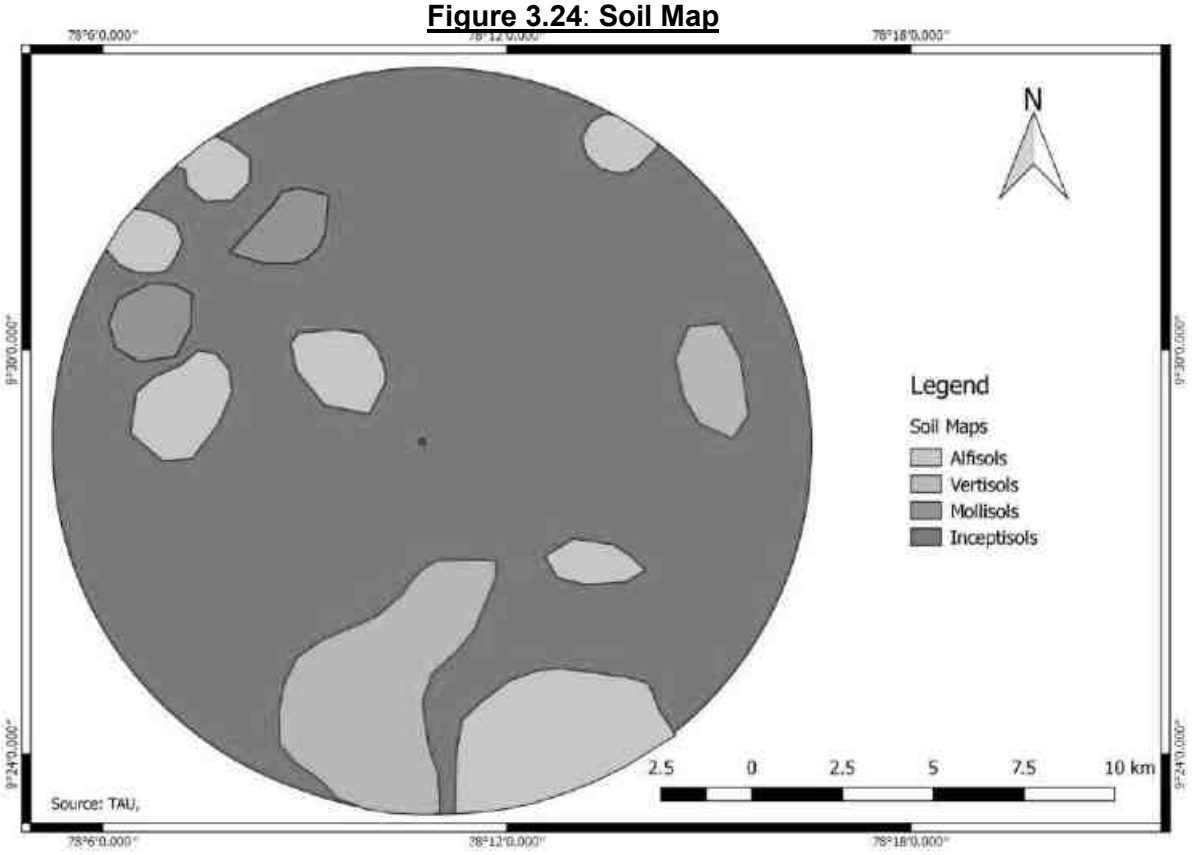
Lithology: The study area is mainly dominated by Hornblende-Biotite Geneiss. The lithology map has been provided below.

Figure 3.23: Lithology Map



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

Figure 3.24: Soil Map



3.6.3 WATER TABLE OF THE AREA:

Based on the depth to water level data obtained from the India-WRIS, Department of Water Resources, Ministry of Jal Shakti for Aruppukottai Block, Viruthunagar District, Tamil Nadu the following is observed.

Table 3.28: General Trend of Depth to Water Level for Aruppukottai Block

Year	Depth to Water Level (m bgl)		Wells Monitored	
	Pre-Monsoon	Post-Monsoon	Pre-Monsoon	Post-Monsoon
2015	2.67 - 9.65	1.74 - 7.94	3	3
2016	3.5 - 7.66	4.07 – 9.9	4	3
2017	-	2.27- 4.88	-	2
2018	4.03-10.38	6.35-8.5	3	2

The premonsoon and post monsoon water levels are depicted **in Figure No.3.25, and 3.26** and they indicate that the depth to water level in project area ranges between 5.0 to 10.0 m bgl during the pre-monsoon season(April) and 0.0 to 0.5 m bgl during the post monsoon season (November).

Figure 3.25: Pre-Monsoon Water Level

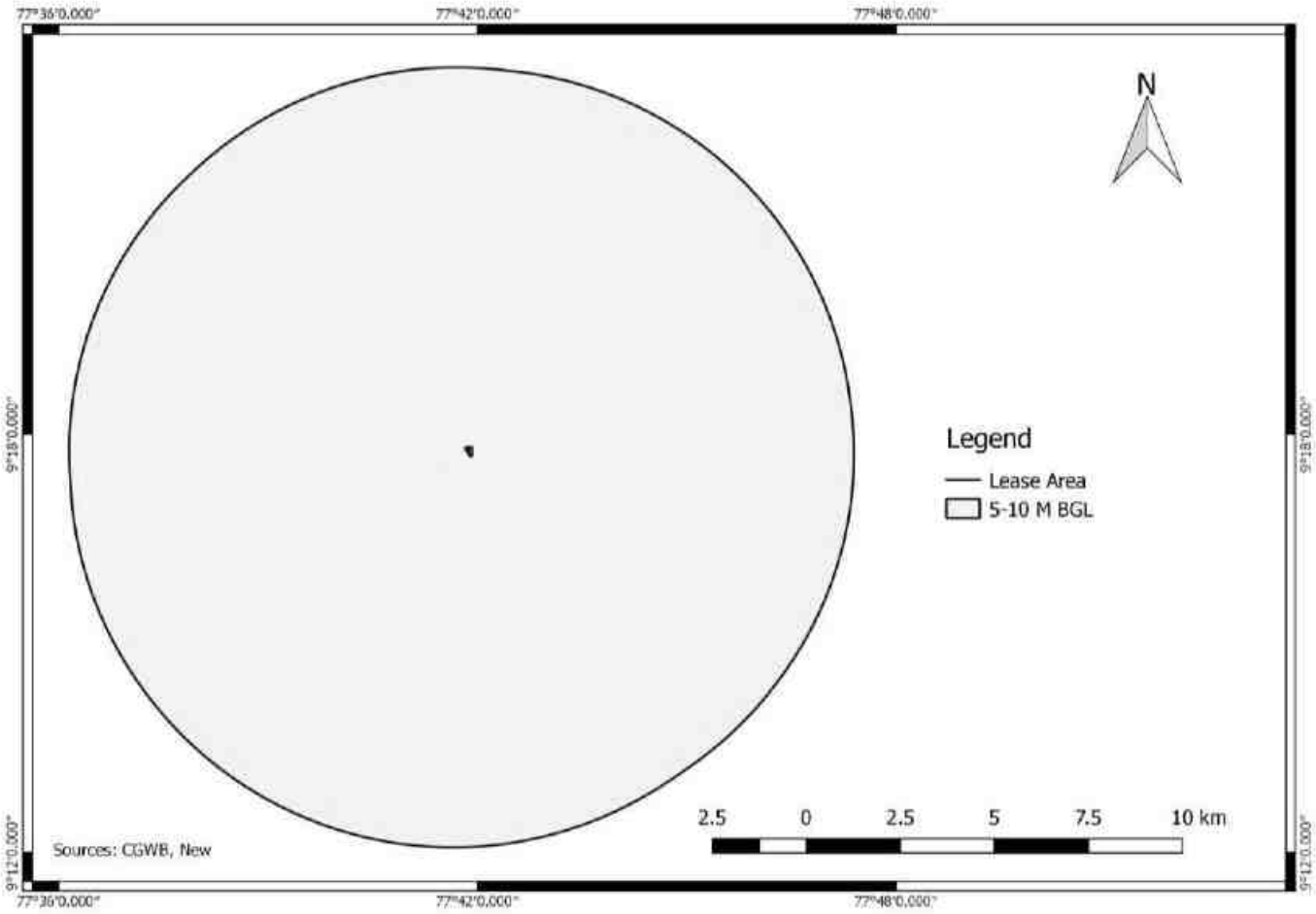


Figure 3.26: Post Monsoon Water Level

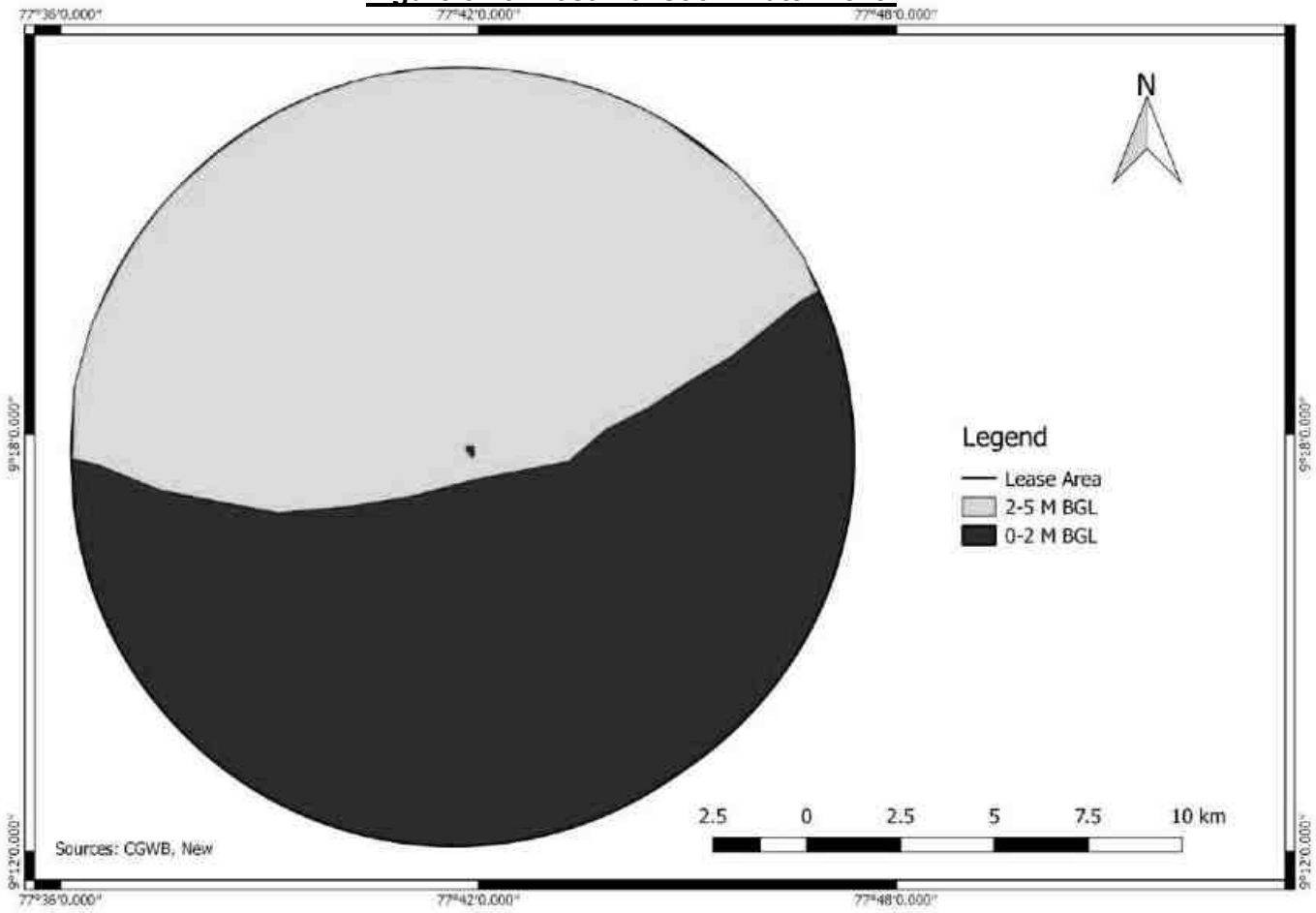


Table 3.29: Well Inventory Data

ID No.	Well/Borewell	Coordinates		Depth of Well / Borewell (M)	Water Level (m)	
		Latitude	Longitude		Pre Monsoon	Post Monsoon
1	Well	9°17'28.00"N	77°41'46.00"E	4.0	3.0	1.0
2	Well	9°17'29.00"N	77°41'46.00"E	4.5	3.0	1.2
3	Well	9°17'32.00"N	77°41'52.00"E	5.0	-	1.5
4	Well	9°17'32.00"N	77°41'53.00"E	6.0	-	1.5
5	Well	9°17'29.00"N	77°41'45.00"E	20.0	8.5	1.2
6	Bore well	9°17'12.00"N	77°41'46.00"E	100	60	-
7	Bore well	9°17'41.00"N	77°42'05.00"E	100	50	-

LOCATION OF STUDY WELLS

From the above table, it can be seen that shallow water levels are observed in the wells. The range of water levels observed in the wells ranges from 3m – 8.5 m bgl during the pre monsoons season and 1m – 1.5 m bgl during the post monsoon season.

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 some times become dry during summer. Bore wells > 300 ft 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.

3.6.4.4 Surface Water Bodies:

Drainage of the area is controlled by Vaippar river. Vaippar river and its tributary Nadhi is located 320 meter (North) and 90 m (west) respectively from the lease area. Ammiyarpatti tank is located 1.1km NE of the lease area.

Based on geophysical study there is no observation of fractured zone/ fissure vein up to 60m of the study area. During the rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry. The Ammiyarpatti village tanks are also dry due to scanty rainfalls

Based on geophysical study it can be concluded that there is no influence in vaippar river non-perennial tributary in the study area since most of the time it is dry and the intervening mining and the river bed is infested with hard rocky formation.

* * * * * * * * *

CHAPTER - IV

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

CHAPTER 4
ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

In this project Semi – Mechanized Open Cast mining will be carried out to quarry out Rough Stone and gravel. The identified impacts due to this mine 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. Generally mining and allied operations like Excavation of material, Movement of HEMM such as Excavators, tippers, Loading and unloading operation, Transportationetc may cause deterioration of air quality due to dust generation or gaseaous emission arising from the project operation if prompt care is not taken.

Particulate matter smaller than 10 microns, referred to as PM_{10}, can settle in the bronchi and lungs and cause health problems. 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 SO_2, NO_x, CO etc., from diesel driven equipments. Larger suspended particles are generally filtered in the nose and throat and do not cause problems. Higher concentration of SO2, NOx, CO may cause some health effect on the human beings exposed to it.

Since the mining in this lease will be with jackhammer drilling (without blasting), splitting by feather & wedges, manual dressing in to building stones, fencing stones, manual loading & transportation by trucks to needy customers & the production from this lease is very less there will not be any appreciable impact on the air environment. The top gravel is soft and can be directly excavated, loaded and transported to the consumers. The production is also less.

As such there will be negligible level of dust generation & gas emission due to mining operations in this lease area.

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

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

- Regular wetting of transport road using mobile water tanker.
- Wet drilling / Covering of drill holes with wet clothes
- Proper maintenance of roads.
- Avoiding overloading of trucks & Transportation of material by tarpaulin covered trucks
- Proper maintenance of HEMM to minimize gaseous emission
- Setting up of tyre washing facility in the lease area exit.
- Vehicular emission tests with digital smoke meter.
- Development of 650 number of plants in and around the lease area

By adoption of all these measures and since the production is less and mostly manual mining, loading operations are proposed, no adverse impact on air quality is envisaged due to this proposed opencast mining operation.

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. 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, PM_{10}, $PM_{2.5}$. **Ground Level Concentration** (GLC) have been computed using hourly meteorological data.

Table4.1: 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 scenario. The details of the emission factors used for the same is provided below:

Table4.2: 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, after adopting necessary control measures like dust suppression, Proper maintenance of HEMM, using better quality 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:

Table4.3: Emission Rate

ACTIVITIES/POLLUTANTS	PM_{10} (g/sec)	$PM_{2.5}$(g/sec)
Ore Loading	0.01	0.01
Drilling	0.04	0.02
Hauling inside lease area	0.04	0.01
Total	**0.09**	**0.04**

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 Winter Season (Dec 2021 to Feb 2022) and the same has been used in the predictions.

4.2.2.3 Results and Discussions

The results of the Peak GLC's for various environmental parameters with control measures are given below:

Table4.4: Peak Incremental Concentration

S.no	Parameters	Peak incremental concentration µg/m^3
1	PM_{10}	1.37
2	$PM_{2.5}$	0.62

It is observed that the peak incremental concentration for PM_{10}, $PM_{2.5}$ occurring very near the source. At away from the source the values are getting reduced due to dispersion effects. The Isopleths of PM_{10}, $PM_{2.5}$ concentrations for 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.

Figure 4.1: Isopleth of GLC Prediction for PM_{10}

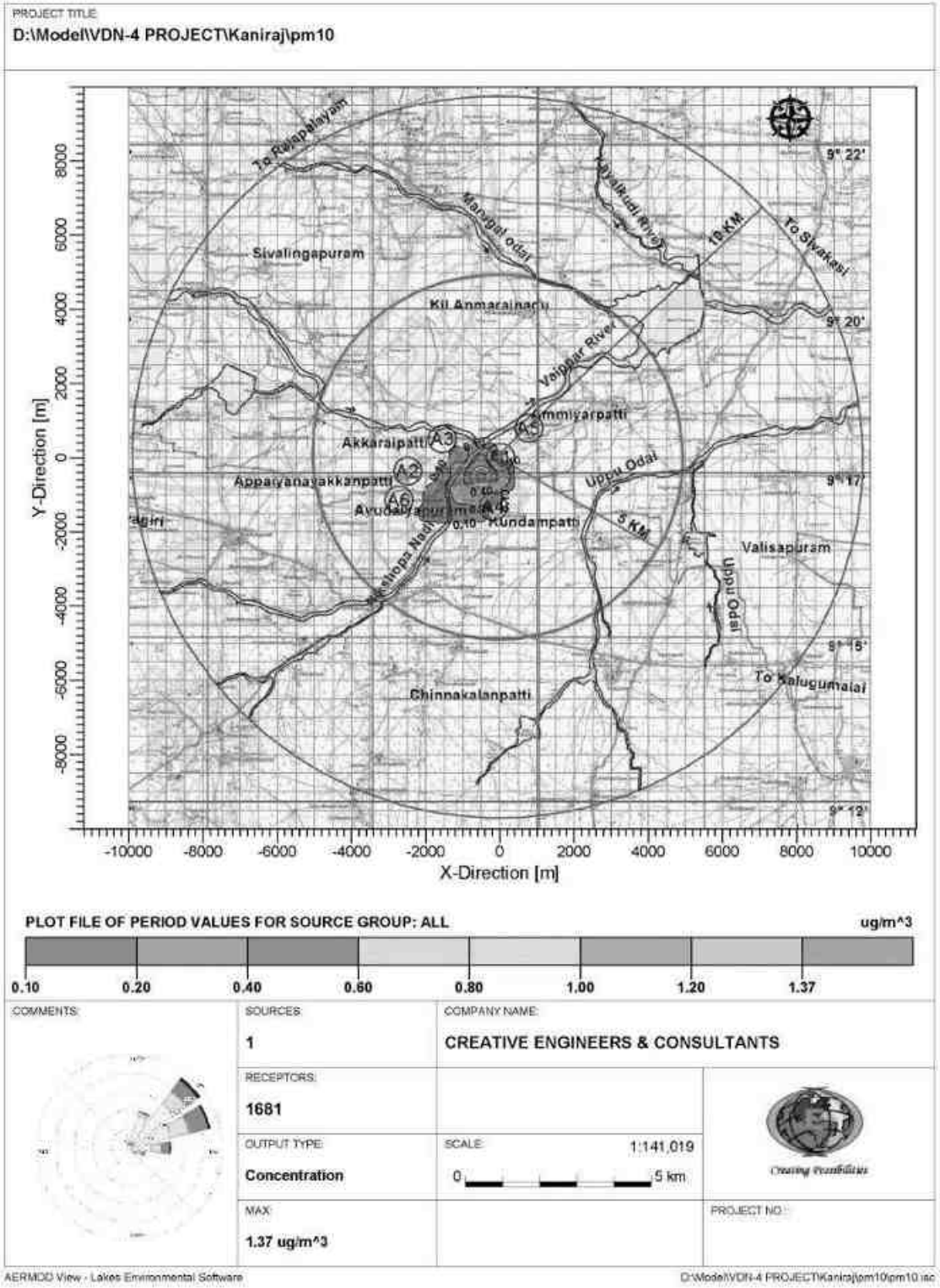
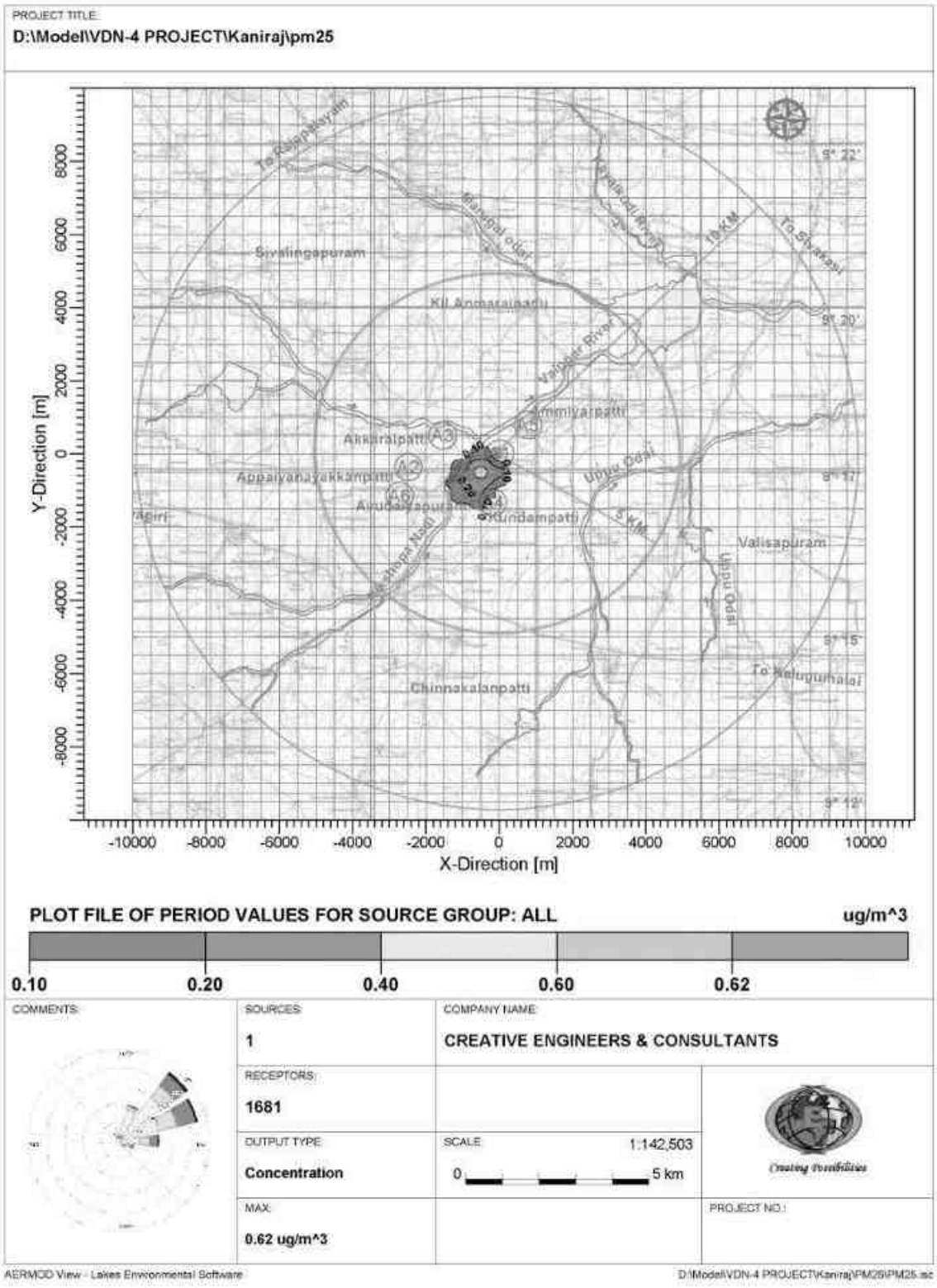


Figure 4.2: Isopleth of GLC Prediction for $PM_{2.5}$



4.2.2.4 Predicted Ambient Air Quality:

The post project Concentrations of PM_{10}, $PM_{2.5,}$ (GLC) (base line + incremental) after adopting necessary control measures is given in **Table No - 4.6 to 4.7.**

Table4.5: Concentrations of PM_{10} after Project Implementation

Values in μg/m³

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	Near Core Zone	76.3	1.5	77.8	-
2	Appanayakkanpatti Village	55.6	<1.0	56.6	100
3	Akkaraipatti Village	70.2	<1.0	71.2	
4	Kundampatti Village	64.4	<1.0	65.4	
5	Ammiyarpatti Village	57.6	<1.0	58.6	
6	Avudaiyarpuram Village	54.1	<1.0	55.1	

Table4.6: Concentrations of $PM_{2.5}$ after Project Implementation

Values in μg/m³

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	Near Core Zone	36.6	<1.0	37.6	-
2	Appanayakkanpatti Village	25.9	<1.0	26.9	60
3	Akkaraipatti Village	32.6	<1.0	33.6	
4	Kundampatti Village	30.9	<1.0	31.9	
5	Ammiyarpatti Village	28.1	<1.0	29.1	
6	Avudaiyarpuram Village	24.9	<1.0	25.9	

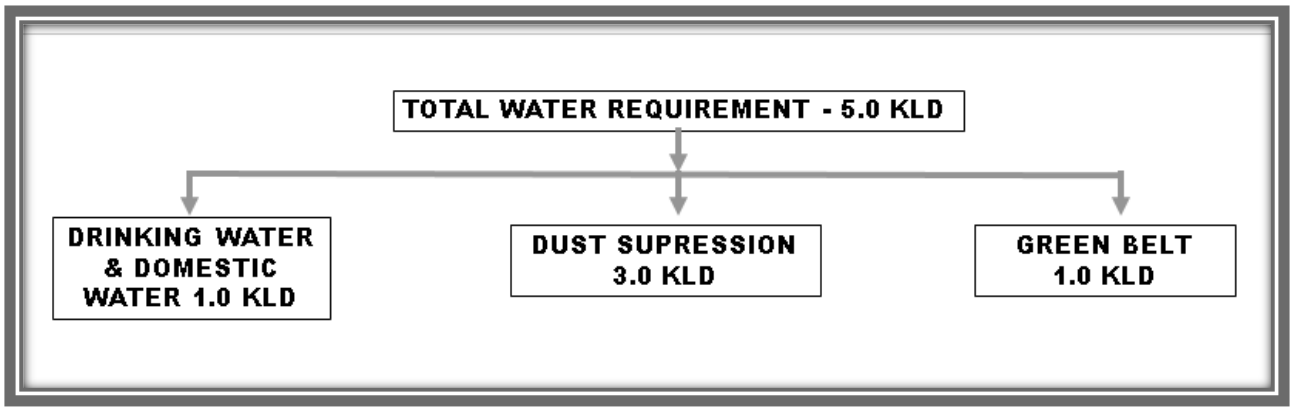
It can be seen that the resultant added concentrations with baseline figures even at worst scenario, show that the values of ambient air quality with respect to PM_{10} are in the range of 55.1μg/m3 to 77.8μg/m3 and with respect to PM2.5 are in the range of 25.9 μg/m3 to 37.6μg/m3 which are within the statutory limits in each case. For preservation of environment in this mine strict enforcement of management schemes and regular air quality monitoring 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.

4.3 WATER ENVIRONMENT:

4.3.1 WATER REQUIREMENT:

The total water requirement for this project will be 5.0 KLD comprising 1.0 KLD for drinking water and domestic use, 3.0 KLD for dust suppression and 1.0 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.**

Figure 4.3: Water Balance Diagram



4.3.2 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.

4.3.3 TREATMENT SCHEME:

A. Generation of domestic effluent:

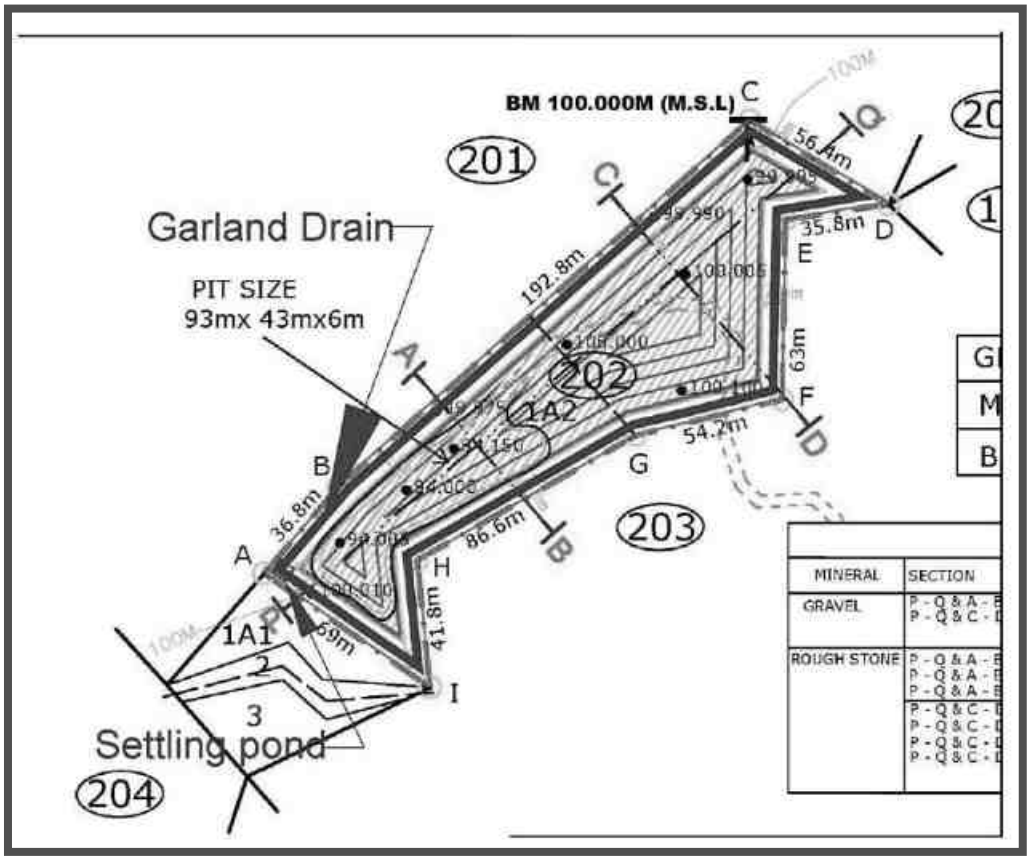
The domestic sewage to be generated from the project will be collected in septic tank with soak pits.

B. Washouts from overburden, ore stockpile, etc.

Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any stockpiles. As such there will not be any wash out due to stock pile or waste dumps.

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 of length 600m 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 4.4.**

Figure 4.4: Surface Runoff Management Structures



C. Disturbance to drainage courses

There is no proposal to discharge any effluent into the water body. Vaippar river and its tributary Nadhi is located 320 meter (North) and 90 m (west) respectively from the lease area. Based on geophysical study there is no observation of fractured zone/ fissure vein up to depth of 60m in the study area. During the rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry. 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 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. The ultimate pit depth of mining is 20m. 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. Nearby mine workings also does not show any major seepage. 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.'

Table 4.7: Ground Water Resources Estimation– Vembakottai Taluk (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%. In view of this, 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 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.

a) Development of garland drain around the quarry connected to settling tank.
b) Cleaning of drain periodically to prevent siltation
c) The supernatant clear water from the settling pond will drain into the nearby drainage.
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.

4.4 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:

4.4.2 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, 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.**

Table4.8: 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**.

Table4.9: 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 organizations 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 4.5dB(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, 5dB(A) of additional attenuation can be obtained upto 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:

Table4.10: 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.	North West Corner	49.7	61.5	90
2.	North East Corner	49.7	60.7	90
3	South East Corner	49.7	60.9	90
4	South West Corner	49.7	60.4	90
5	Appanayakkanpatti Village	44.8	45.1	55
6	Akkaraipatti Village	48.2	48.7	55
7	Kundampatti Village	45.2	45.8	55
8	Ammiyarpatti Village	48.2	48.6	55
9	Avudaiyarpuram Village	47.4	47.5	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.

4.4.2.1 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 equipment's like shovel, tippers,etc.
- Proper and regular maintenance of equipment's 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.
- Provision of green net along the lease periphery.

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

4.4.3 GROUND VIBRATIONAL DUE TO BLASTING EFFECTS:

Since no blasting is envisaged no blasting induced vibration is expected.

4.5 LAND ENVIRONMENT:

The lease area over an extent of 1.215Ha located in survey number 202/1A2 is a patta land in the name of the applicant Thiru G.Kaniraj. The present land use pattern, and the post mining land use pattern is shown below:

Table 4.11: Land Use

S.No	Land Use	Present Area (Hect)	Area in use End of the lease period(Ha)
1.	Quarrying Pit	0.31.0	1.00.0
2.	Infrastructure & Road	Nil	0.03.0
3.	Green Belt	Nil	0.07.0
4.	Undisturbed	0.90.5	0.05.5
4.	Fencing	Nil	0.06.0
	Total	**1.21.5**	**1.21.5**

At the end of the 5 year period about 1.00.0 Ha will be used as mined out area at 20m depth. Ultimately the entire mined out area will be left as water body 0.03.0 Ha is road & infrastructure, 0.07.0 ha will be under afforestation, 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing.

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. At the end of the life of the mine, 1.000 Ha of mined out area will be left as water body. 0.030.0Ha will be the mine roads and 0.185Ha will be covered with vegetation.

Table 4.12: Land Use During Post Operational Period

S.No	Description	Land use (Ha.)			
		Plantation	Water body	Others	Total
1	Quarrying Pit	-	1.000	-	**1.000**
2	Infrastructure & Road	-	-	0.030	**0.030**
3	Green Belt	0.070	-	-	**0.070**
4.	Undisturbed Area	0.055	-	-	**0.055**
5.	Fencing	0.060	-	-	**0.060**
	TOTAL	**0.185**	**1.000**	**0.030**	**1.215**

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 to meet the water requirement of the project.

4.6 BIOLOGICAL ENVIRONMENT:

4.6.1 EXISTING FLORA AND FAUNA:

The core zone area is partly mined out land and balance with thorny 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 described below:

Table4.13: Impact on Biological Environment

S.No	ISSUES	OBSERVATIONS
1	Clearance of vegetation due to mining and allied activities	Part of the lease area has already been mined out. Other than clearing the grasses and bushes with thin the lease area, no clearance of major vegetation is involved.
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	There are no national parks / wildlife sanctuary etc. within the 10Km radius.
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	There are no Schedule 1 animals
8	Risk of fall/slip or cause death to wild animals due to project activities	In the post mining stage, wire fencing is proposed all around the mined-out void to prevent falling of animals in the 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	Due to poor soil condition and non-availability of perennial water source, no major agricultural activity is carried out in and around the lease area. Only patches of agricultural activity are observed on the eastern periphery of the study area along the river sides in few places in the monsoon season based on water availability.
14	Impact on soil health and biodiversity	The lease areas are covered with grasses and bushes

		only (Photograph of the sites are attached in Chapter-II). Besides, there is no waste generation, disposal or stacking involved. 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 only optimum equipments will be used. •Besides, as they are mining projects, no adverse generation of heat is envisaged. •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 650 number of plants will be planted in and around the lease areas. •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 various mitigative measures. •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.
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.	
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 sumps. Water from sumps will be pumped to settling pond for downstream users.

		• Rainwater from the mine peripheries will be collected through peripheral garland drain. Garland drains will be connected to settling ponds. Supernatant clear water from settling ponds confirming to applicable limits will be let out to downstream users for agricultural or other purposes. • Due to above mentioned reasons and absence of perennial 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.

4.6.4 GREEN BELT& PLANTATION:

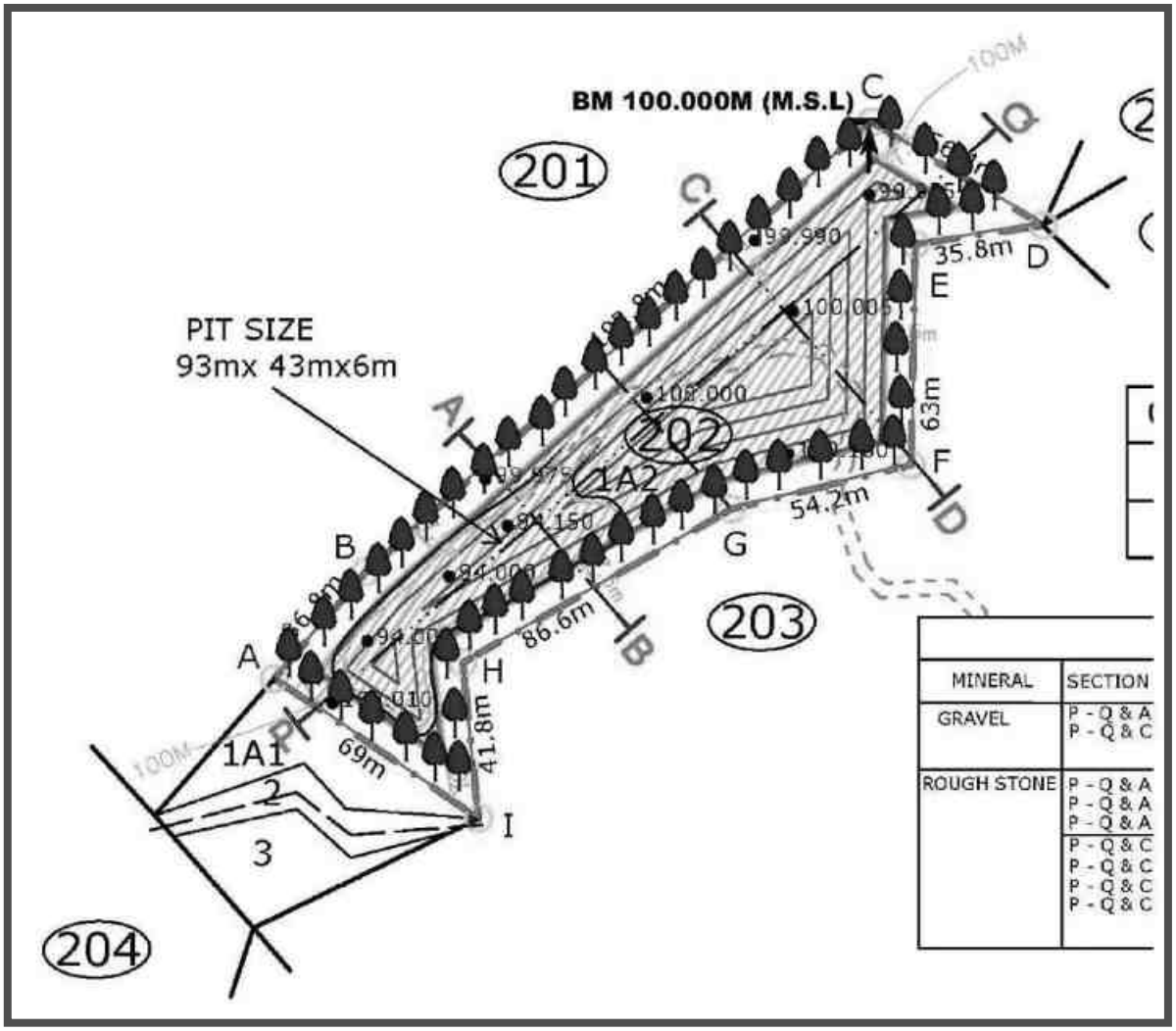
In the lease area, safety barrier 7.5m around the periphery, 10m safety distance for cart tracks on the southern side of the lease area. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 650 trees will be planted in and around the lease area.

Table4.14: Proposed Plantation

Year	No. of tress proposed to be planted	Name of the species
I	130	Pungai, Vagai, Vembu, Manjal konrai, Naval, Puvarasu, etc.,
II	130	
III	130	
IV	130	
V	130	
Total	**650**	

At the end of the 5 year period about 1.00.0 Ha will be used as mined out area at 20m depth. Ultimately the entire mined out area will be left as water body 0.03.0 Ha is road & infrastructure, 0.07.0 ha will be under afforestation, 0.05.5 ha will be undisturbed area and 0.06.0 will be fencing. The post mining land use plan showing afforestation and water body is shown in **Figure No- 4.5.**

Figure 4.5: Mine Closure Plan



4.7 SOCIO ECONOMIC ENVIRONMENT:

The entire lease area is in the 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 cart track in proximity to the lease area not be disturbed by the proponent and sufficient safety barrier and protective measures has also been considered.

The mining operations in the proposed mine will employ about 18 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
- ❖ 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 4.15: CER Cost

Project Cost (Rs.)	Rs. 32,16,876/-
CER Cost Requirement (2% of the Project Cost) (Rs.)	Rs. 64,337/-
Revised CER cost allocated (Rs.)	Rs.5,00,000/-

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 by provision of facilities in nearby Government School.

4.8 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. Mining operations are planned to be executed safely and with all precautionary measures as prescribed in Metalliferrous 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:

Project operation may cause various health related issues for the workers exposed to the activity if proper measures are not taken.

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.
- 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 Equipments
1.	Helmets
2.	Shoes
3.	Goggles
4.	Dust Mask
5.	Hand Gloves
6.	Reflective Jackets
7.	Ear Muffs
8.	Signal Lights/Flags

A total budgetary provision of Rs.36,000 under capital cost and Rs.18,000 is allocated under recurring cost towards Occupational health and Safety Budget.

4.9 LOGISTICAL SYSTEM:

From this proposed quarry the entire output will be transported to the crusher units for producing for buyers etc. The expected peak transport will be as follows:

A. Present traffic scenario: To know the present scenario, traffic survey is conducted by the PP at Kundampatti to Appayanaikenpatti Road. The details of the traffic survey is provided in Table No.4.19.

Table 4.16: Details of Traffic Survey

Transport Route From Kundampatti to Appayanaikenpatti							
Buses	**Trucks**	**Motor Vehicle**	**Tractor & Trailer**	**LCV**	**Car /Jeep**	**Auto**	**TOTAL IN TERMS OF PCU**
12	59	41	20	8	7	4	**331.50**

B. Expected traffic on post project scenario:

From the mine the entire material will be transported to nearby users. The expected peak transport will be as follows:

Table 4.17: Details of Transportation

Sl.no	Particulars of activity	Quantity
A	Maximum Material Transported (m3/year)	23,520
B	No of days in a year	300
C	Transport hours per day	10
D	Truck capacity in T	20
	Trips per hour	1 Trip/hr

There will be about 1 trip per hour. The existing road will be can absorb this traffic due to this project. 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

4.10 WASTE MANAGEMENT:

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

Liquid waste: There is no process effluent generation from this mine. Hence no liquid waste is generated.

Hazardous waste management: In this project 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.

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 - V

ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 ALTERNATE TECHNOLOGY:

This is a proposed Rough Stone and Gravel Quarry in which Semi – Mechanized Open Cast mining (without blasting) will be carried out. It involves jackhammer drilling, splitting by feather & wedges, manual dressing in to building stones, fencing stones, manual loading & transportation by trucks. 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 - VI

ENVIRONMENTAL MONITORING PROGRAMME

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. However, based on the need and priority it may be suitably modified / improved in consultation with local authorities. The monitoring schedules to be adopted in this quarry are given below.

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 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	Socio Economic Environment	Socio Economic Survey, Review of implementation of CER activities proposed	Buffer Zone	Yearly basis
6	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
7	Greenbelt	Maintenance	Within 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

Table 6.3: National Ambient Air Quality Standards

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		Methods of Measurement
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), µg/m³	Annual*	50	20	- Improved West and Gaeke -Ultraviolet fluorescence
		24 hours**	80	80	
2	Nitrogen Dioxide (NO_2), µg/m³	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
		24 hours**	80	80	
3	Particulate Matter (size less than 10µm) or PM_{10} µg/m³	Annual*	60	60	- Gravimetric - TOEM - Beta attenuation
		24 hours**	100	100	
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ µg/m³	Annual*	40	40	- Gravimetric - TOEM - Beta attenuation
		24 hours**	60	60	
5	Ozone (O_3) µg/m³	8 hours**	100	100	- UV photometric - Chemiluminescence - Chemical Method
		1 hour**	180	180	
6	Lead (Pb) µg/m³	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m³	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) µg/m³	Annual*	100	100	-Chemiluminescence -Indophenol blue method
		24 hours**	400	400	
9	Benzene (C_6H_6) µg/m³	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m³	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m³	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. — Wherever 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/Extv.]

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.

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, *Max*	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)	*p*H 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, *Max*	1	5	Part 10	—
vi)	Total dissolved solids, mg/l, *Max*	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.

Table No – 6.2 contd.

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, *Max*	0.03	0.2	IS 3025 (Part 55)	—
ii)	Ammonia (as total ammonia-N), mg/l, *Max*	0.5	No relaxation	IS 3025 (Part 34)	—
iii)	Anionic detergents (as MBAS) mg/l, *Max*	0.2	1.0	Annex K of IS 13428	—
iv)	Barium (as Ba), mg/l, *Max*	0.7	No relaxation	Annex F of IS 13428* or IS 15302	—
v)	Boron (as B), mg/l, *Max*	0.5	1.0	IS 3025 (Part 57)	—
vi)	Calcium (as Ca), mg/l, *Max*	75	200	IS 3025 (Part 40)	—
vii)	Chloramines (as Cl_2), mg/l, *Max*	4.0	No relaxation	IS 3025 (Part 26)* or APHA 4500-Cl G	—
viii)	Chloride (as Cl), mg/l, *Max*	250	1 000	IS 3025 (Part 32)	—
ix)	Copper (as Cu), mg/l, *Max*	0.05	1.5	IS 3025 (Part 42)	—
x)	Fluoride (as F) mg/l, *Max*	1.0	1.5	IS 3025 (Part 60)	—
xi)	Free residual chlorine, mg/l, *Min*	0.2	1	IS 3025 (Part 26)	To be applicable only when water is chlorinated. Tested at consumer end. When protection against viral infection is required, it should be minimum 0.5 mg/l
xii)	Iron (as Fe), mg/l, *Max*	0.3	No relaxation	IS 3025 (Part 53)	Total concentration of manganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xiii)	Magnesium (as Mg), mg/l, *Max*	30	100	IS 3025 (Part 46)	—
xiv)	Manganese (as Mn), mg/l, *Max*	0.1	0.3	IS 3025 (Part 59)	Total concentration of manganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xv)	Mineral oil, mg/l, *Max*	0.5	No relaxation	Clause **6** of IS 3025 (Part 39) Infrared partition method	—
xvi)	Nitrate (as NO_3), mg/l, *Max*	45	No relaxation	IS 3025 (Part 34)	—
xvii)	Phenolic compounds (as C_6H_5OH), mg/l, *Max*	0.001	0.002	IS 3025 (Part 43)	—
xviii)	Selenium (as Se), mg/l, *Max*	0.01	No relaxation	IS 3025 (Part 56) or IS 15303*	—
xix)	Silver (as Ag), mg/l, *Max*	0.1	No relaxation	Annex J of IS 13428	—
xx)	Sulphate (as SO_4) mg/l, *Max*	200	400	IS 3025 (Part 24)	May be extended to 400 provided that Magnesium does not exceed 30
xxi)	Sulphide (as H_2S), mg/l, *Max*	0.05	No relaxation	IS 3025 (Part 29)	—
xxii)	Total alkalinity as calcium carbonate, mg/l, *Max*	200	600	IS 3025 (Part 23)	—
xxiii)	Total hardness (as $CaCO_3$), mg/l, *Max*	200	600	IS 3025 (Part 21)	—
xxiv)	Zinc (as Zn), mg/l, *Max*	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.

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**
½	**102**
¼	**105**
1/8	**108**
1/16	**111**
1/32	**114**

6.4 ENVIRONMENTAL MONITORING COST:

Towards environmental monitoring it is proposed to allocate a budget of Rs. 0.50 Lakh per annum for this project. Further details of the capital and recurring cost of environmental management has been provided in in Table No. 10.2, Chapter-X.

* * * * * * * *

CHAPTER - VII

ADDITIONAL STUDIES

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. Cumulative Impact Study
3. Risk Assessment
4. R&R Plan
5. Mine closure planning

7.2 PUBLIC CONSULTATION:

This draft EIA/EMP report will be exposed to public consultation as per mandatory procedures through the District Collector of Virudhunagar 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 CUMULATIVE IMPACT STUDY:

As mentioned earlier, Rough Stone and Gravel Quarry of Thiru G.Kaniraj is located in Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar District, Tamilnadu. The details of the other quarries located within the 500m radius of the project considered for cumulative impact study now **(Annexure-12)** has been provided below:

Table 7.1: Details of quarries within 500m radius

S. No	Quarry detail	Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	**Existing Quarries:**			
1	G.Kaniraj	Appainaickenpatti, Vembakottai	202/1A2 **(1.21.5)**	KV1/33631/2013, dated: 16.09.2016. (06.10.2016 - 05.10.2021)
2	P.Shanmugaraj	Appainaickenpatti, Vembakottai	207/2A, 207/2B **(1.91.5)**	KV1/202/2018. dated:01.02.2019 (25.02.2019 24.02.2024)
3	P.Shanmugaraj	Appainaickenpatti, Vembakottai	38/6A, 41/2, 42, 43/3, 43/6, 48 **(2.74.5)**	KV1/27945/2014, dated; 08.05.2017.(22.05.2017- 1.05.2022.)
4	S.Ragupathy	Appainaickenpatti, Vembakottai	32/4, 38/3A2, 38/3B, 38 /4, 38/5, 38/8, 38/9A **(2.91.0)**	KV1/27944/2014, dated: 06.05.2017.(22.05.2017- 21.05.2022)
5	S.Ramraj	Appainaickenpatti, Vembakottai	196/1A, 197/1, 198/4, 206, 207/1 **(2.88.0)**	KV1/21616/2014, dated: 09.02.2018 (26.02.2018 **-** 25.02.2023)
6	S.Subburaj	Appainaickenpatti, Vembakottai	44, 46/1 **(2.20.5)**	KV1/7441/2017, dated: 01.02.2019. 25.02.2019 - 24.02.2024.
7	R.Gopalakrishnan	Appainaickenpatti, Vembakottai	199/6A **(1.08.0)**	KV1/5171/2013, dated: 10.05.2017 29.05.2017 to 28.05.2022
II	**Abandoned Quarry :**			
1	S.Sivaraman	Appainaickenpatti, Vembakottai	39/3 **(0.96.5)**	KV1/788/2018, dated 17.09.2018 28.09.2018 to 27.09.2020
2.	R.Subbukrishnan,	Appainaickenpatti, Vembakottai	51/1A 1, 51/1A2 **(0.52.0)**	KV1/1345/2012, dated: 03.10.2013 05.10.2013 - 04.10.2018.
3.	S.Subburaj	Appainaickenpatti, Vembakottai	43/1B(P), 45/1 A2(P) **(1.45.0)**	KV1/11925/2015, dated: 17.10.2015.21.10.2016 - 20.10.2019.
4.	S.Ragupathy	Appainaickenpatti, Vembakottai	38/10A, 38/11 **(0.51.0)**	KV1/1312/2012, dated:07.10.2013.(08.10.2013 - 07.10.2018.)
5.	S.Ramraj	Appainaickenpatti, Vembakottai	207/3A, 207/3B 209/1 A, 209/1 B (0.83.0)	KV 1 / 1316 / 2012 . Dated:03.10.2013 (05/10/2013 to 04/10/2018)
III	**Present Proposed Quarry :**			
1	R.Gayathiri	Appainaickenpatti, Vembakottai	39/1A,39/1B, 39/2A, 49 (2.30.2)	KV1/572/2019
2	S.Ragupathy	Appainaickenpatti, Vembakottai	196/2A, 196/3, 196/4, 197/2 (1.86.5)	KV1/390/2019
3	G.Kaniraj	Appainaickenpatti, Vembakottai	202/1A2 (1.21.5)	KV1/158/2021
		TOTAL	**26.552**	

From that above it is seen that, although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius along with this subject

project works out to >5 Ha. A Cumulative impact study is conducted to determine the impact of the existing quarries and proposed ToR obtained quarries on the environment. A map showing the existing and proposed located near the lease area is provided below:

Figure 7.1: Vicinity Map

The baseline monitoring carried out for this project reflects the cumulative impact of the existing quarries.

7.3.1 DETAILS OF PROPOSED QUARRIES

For the following proposed quarries, the cumulative impact of these proposed quarry operations on the environment is studied and provided below.

Table 7.2: Salient Details of Proposed Quarries

1	Proponent Name	R.Gayathiri	S.Ragupathi	G.Kaniraj	S.Ramraj
2	**Project Location**				
a	**Survey No.**	39/1A,39/1B, 39/2A, 49	196/2A, 196/3, 196/4 &197/2	202/1A2	207/3A, 3B, 209/1A,1B, 210/1A1A1,1A2,1A3 & 211/3A1,3A2
b	**Village**	Appainaickenpatti	Appainaickenpatti	Appainaickenpatti	
c	**Taluk**	Vembakottai	Vembakottai	Vembakottai	
d	**District**	Virudhunaga	Virudhunaga	Virudhunaga	
e	**State**	Tamil Nadu	Tamil Nadu	Tamil Nadu	
3	**Lease Area**	2.30.2 Ha	1.30.3 Ha	1.21.5 Ha	1.28.5 Ha
4	**Precise Area Letter No.**	KV1/572/2019 Dated: 18.12.2020	KV1/390/2019 dated 18.12.2020	KV1/158/2021 dated 13.08.2021	KV1/638/2021 dated 10.12.2021
5	**Production Capacity**	Roughstone: 2,41,368m3 Gravel:74,690.5 m3	Roughstone:73,186m3, Gravel:30,331.25m3	Roughstone: 87,982.25 m3 Gravel:14,978.75m3	Roughstone:87,856. 25 m3 Weathered Rock: 15,251 m3
6	**Method of mining**	Opencast semi mechanized mining using drilling, blasting, excavation through excavator & mineral transport through tippers will be carried out.			
7	**Lease Period**	5 years	5 years	5 years	5 years
8	**Ultimate Depth**	36m	26m	20m	35m
9	**Project cost**	Rs. 2,85,58,980/-	Rs. 94,81,840/-	Rs. 32,16,876/-	Rs. 33,41,244/-
10	**CER budget**	Rs.6,00,000/-	Rs.5,00,000/-	Rs.5,00,000/-	Rs.5,00,000/-

The cumulative combined impact anticipated due to mining and allied activities in the proposed quarries are determined for Air, Noise, Vibration, Water, Logistical, Socio Economic and Land Environment. Details of the same are provided below:

7.3.1.1 AIR ENVIRONMENT:

The mining and allied activities particularly excavation, hauling, loading and un loading etc. lead to emission of particulate matter. However, effective mitigative measures are provided in the EIA/EMP report to obviate these effects. The cumulative impact on ambient air quality for PM_{10} and $PM_{2.5}$ due to the operations of these proposed projects are predicted based on Air Quality Model simulations. The modelling is done for the peak production to know the worst scenario.

The cumulative peak Ground Level Concentration (GLC) after effective implementation of various mitigative measures have been computed and given below:

Table 7.3: Cumulative Peak Incremental Concentration (µg/m3)

Activity	With Control Measures
PM_{10}	10.80
$PM_{2.5}$	5.12

The cumulative Isopleths of PM_{10}, $PM_{2.5}$ concentrations have been drawn and these are given in **Figure No – 7.2 to 7.3.**

Figure 7.2: Cumulative Isopleth of GLC Prediction for PM_{10}

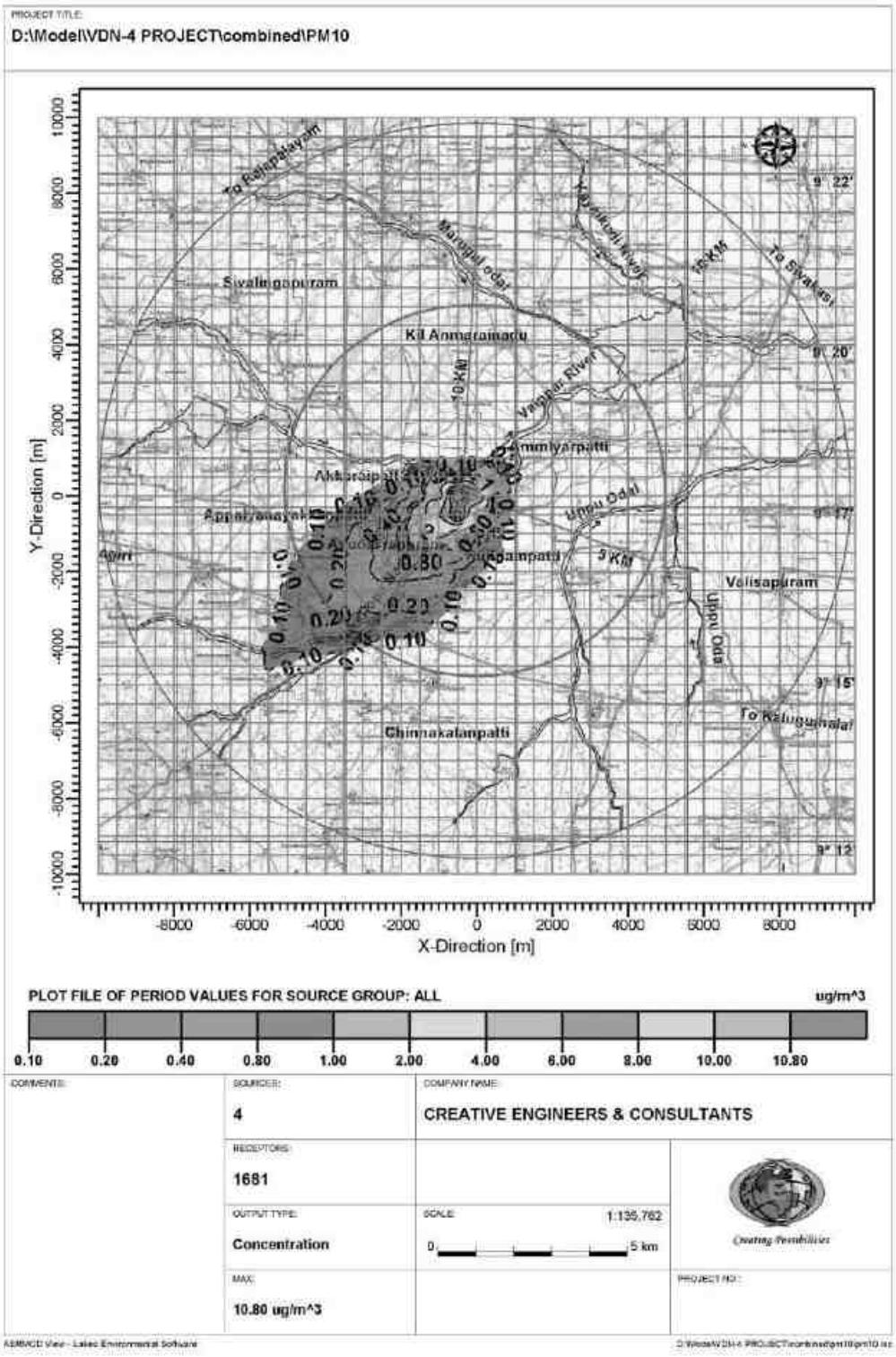
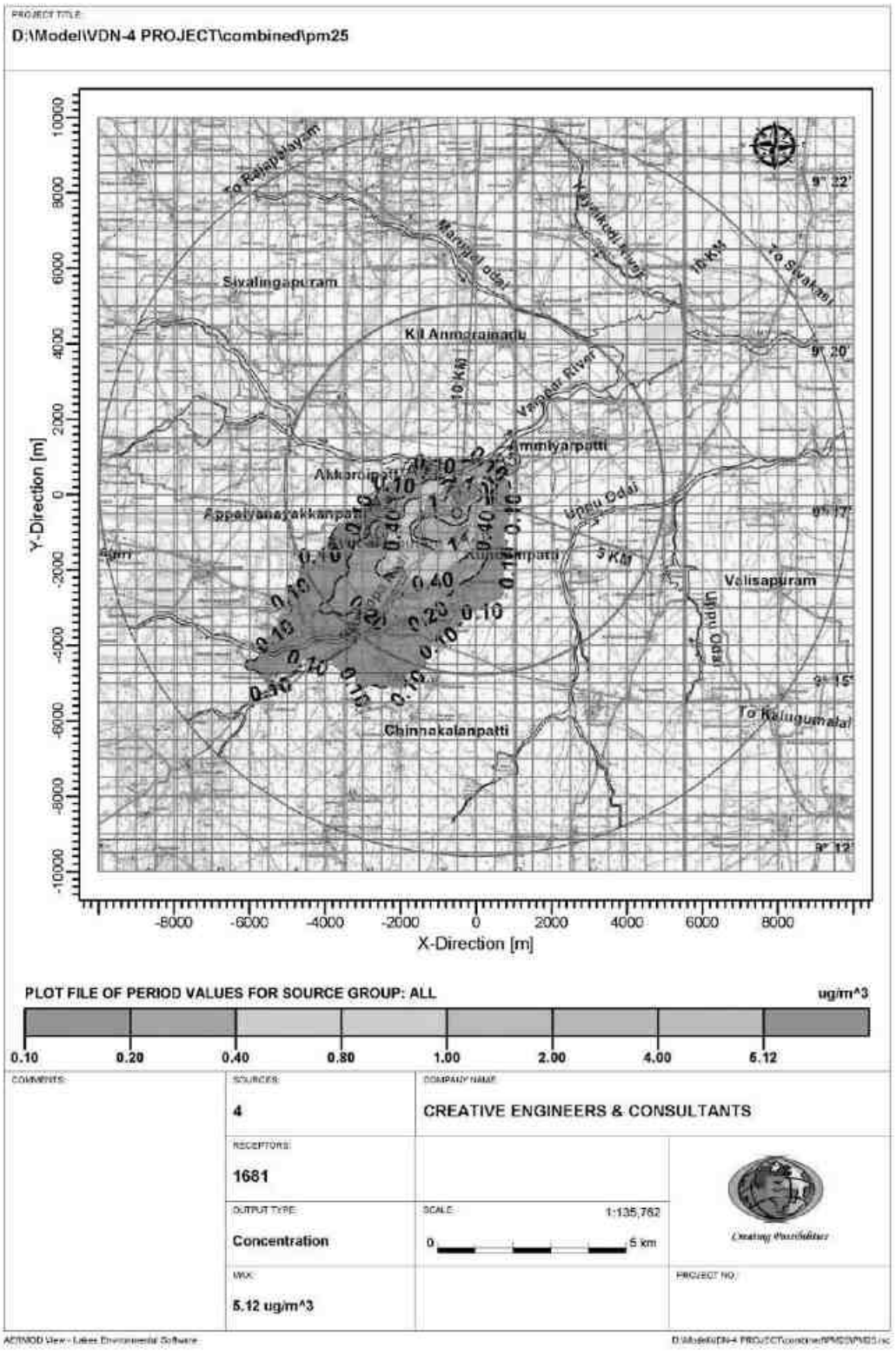


Figure 7.3: Cumulative Isopleth of GLC Prediction for $PM_{2.5}$



It is observed that the peak incremental concentration for PM_{10}, $PM_{2.5}$ is occurring very near the source. At away from the source the values are getting reduced due to dispersion effects. The incremental and predicted concentrations at the locations of ambient air quality have been discussed below.

PREDICTED AMBIENT AIR QUALITY:

The cumulative combined post project Concentrations of PM_{10}, $PM_{2.5,}$ (GLC) (base line + incremental) after adopting necessary control measures is given below:

Table 7.4: Concentrations of PM_{10} after Project Implementation

Values in μg/m³

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	A1- Near Core Zone	76.3	10.80	87.1	-
2	A2- Appanayakkanpatti Village	55.6	1.5	57.1	100
3	A3- Akkaraipatti Village	70.2	1.0	71.2	
4	A4- Kundampatti Village	64.4	2.0	66.4	
5	A5- Ammiyarpatti Village	57.6	<1.0	58.6	
6	A6- Avudaiyarpuram Village	54.1	1.0	55.1	

Table 7.5: Concentrations of PM2.5 after Project Implementation

Values in μg/m³

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	A1- Near Core Zone	36.6	5.1	41.7	-
2	A2- Appanayakkanpatti Village	25.9	<1.0	26.9	60
3	A3- Akkaraipatti Village	32.6	<1.0	33.6	
4	A4- Kundampatti Village	30.9	<1.0	31.9	
5	A5- Ammiyarpatti Village	28.1	<1.0	29.1	
6	A6- Avudaiyarpuram Village	24.9	<1.0	25.9	

It can be seen that the resultant added concentrations with baseline figures even at worst scenario and cumulative impact of the projects show that the values of ambient air quality with respect to PM_{10} are in the range of 55.1 μg/m³ to 87.1 μg/m³ and with respect to $PM_{2.5}$ are in the range of 25.9 μg/m³ to 41.7 μg/m³ which are within the statutory stipulations in respective case.

7.3.1.2 WATER ENVIRONMENT:

The quantum of water required for these projects total to 31 KLD comprising 10KLD for the quarry of Tmt.R.Gayathiri and 8KLD each for Thiru S.Ragupathi,Thiru S.Ramraj and 5.0 KLD for Thiru G. Kaniraj. Though it may be sourced from outside agencies initially, for these projects it is planned to use the rain water collected in the mine sump later.

The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. From the nearby working quarries it is observed there are no seepages in the mine faces because of the hard rock formation. The ground water table in this area is deep. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.

Besides, the stage of groundwater development of Vembakottai Taluk where the study area falls is 58% as per the groundwater resource data obtained from technical report of the Central Ground Water Board, South Eastern Costal Region – 'District groundwater brochure, Virudhunagar District.' In view of this, this area can be categorized as 'Safe' from ground water development point of view. Thus there is scope for further ground water development.

In all the projects, the domestic sewage to be generated from the project will be collected in septic tank with soak pits.

Based on geophysical study there is no observation of fractured zone/ fissure vein up to a depth of 60m in the study area. During the rainy time only surface water flow in Vaippar River is observed and in the remaining period it is almost dry. As such no major impact is envisaged on the nearby water bodies due to project operations

There is no proposal to discharge any effluent into this water body. No major impact is envisaged on the nearby water bodies due to project operations.

7.3.1.3 NOISE ENVIRONMENT:

Post project noise in the core zone has already been provided under para 4.4, Chapter-IV where it is seen 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. Hence, the cumulative post project

noise in the nearby villages has been carried out using the following formula and the results are given below:

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.

Table 7.6: Cumulative Post Project Noise Levels

Sl.NO	Location	Baseline Day Eq.in dB(A)	Cumulative Post project noise Eq in dB(A)	Limit dB(A) as per MoEF&CC
1	Appanayakkanpatti Village	44.8	45.8	55
2	Akkaraipatti Village	48.2	49.4	
3	Kundampatti Village	45.2	47.5	
4	Ammiyarpatti Village	48.2	49.6	
5	Avudaiyarpuram Village	47.4	47.9	

It is seen that the post project concentration in the nearby 5 villages are within the statutory limits of 55dB(A). Besides it is proposed to carry out various mitigative measures such as carrying out greenbelt and afforestation to act as acoustic barriers.

7.3.1.4 VIBRATION:

Since no blasting is envisaged no blasting induced vibration is expected.

7.3.1.5 CUMULATIVE IMPACT ON TRAFFIC:

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

Table 7.7: Details of materials transported

Details	R.Gayathiri	S.Ragupathi	G.Kaniraj	S.Ramraj
Average Material Transported (m3/year)	61475	23393.75	23,520	22558.75
No of days in a year	300	300	300	300
Transport hours per day	8	8	8	8
Truck capacity in T	20	20	20	20
Trips per hour	4 Trips/hr	2 Trips/hr	1 Trip/hr	2 Trips/hr

The total trips from these projects there will be about 9 trips per hour. The existing road can absorb this traffic due to this project. Various measures like proper maintenance of road, covering of the loaded truck with tarpaulin, water sprinkling will be carried out to ensure no adverse impact on the logistical front.

7.3.1.6 CUMULATIVE IMPACT ON SOCIO ECONOMIC ENVIRONMENT:

All the four lease areas are patta lands. There are no habitations or hutments in the core zone area and no rehabilitation or resettlement problems will arise.

The mining operations in the 4 proposed mines will provide direct employment opportunity and indirect employment opportunity for scores of people through allied opportunities in logistics, contract workers, trading, repairing works etc.

Towards development of the surrounding area, various activities will be carried out under Corporate Environmental Responsibility for all these projects. The details of the CER budget is provided below:

Table 7.8: CER budget

Proponent Name	R.Gayathiri	S.Ragupathi	G.Kaniraj	S.Ramraj
CER budget	Rs.6,00,000/-	Rs.5,00,000/-	Rs.5,00,000/-	Rs.5,00,000/-

Various mitigative measures suggested in this report will be properly implemented to ensure that no adverse impact is felt on the socio economic and ecological front in the area.

7.3.1.7 CUMULATIVE IMPACT ON LAND ENVIRONMENT:

The entire mine lease area of Thiru G.Kaniraj of 1.215 Ha is a patta land. In the post mining stage, entire 1.0 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads & infrastructure, 0.07 Ha will be covered with vegetation and 0.055 Ha will be undisturbed area and 0.06Ha will be fencing.

The entire mine lease area of Tmt.R.Gayathiri of 2.302 Ha is a patta land. In the post mining stage, entire 2.08 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads & infrastructure, 0.112 Ha will be covered with vegetation and 0.08 Ha will be fencing.

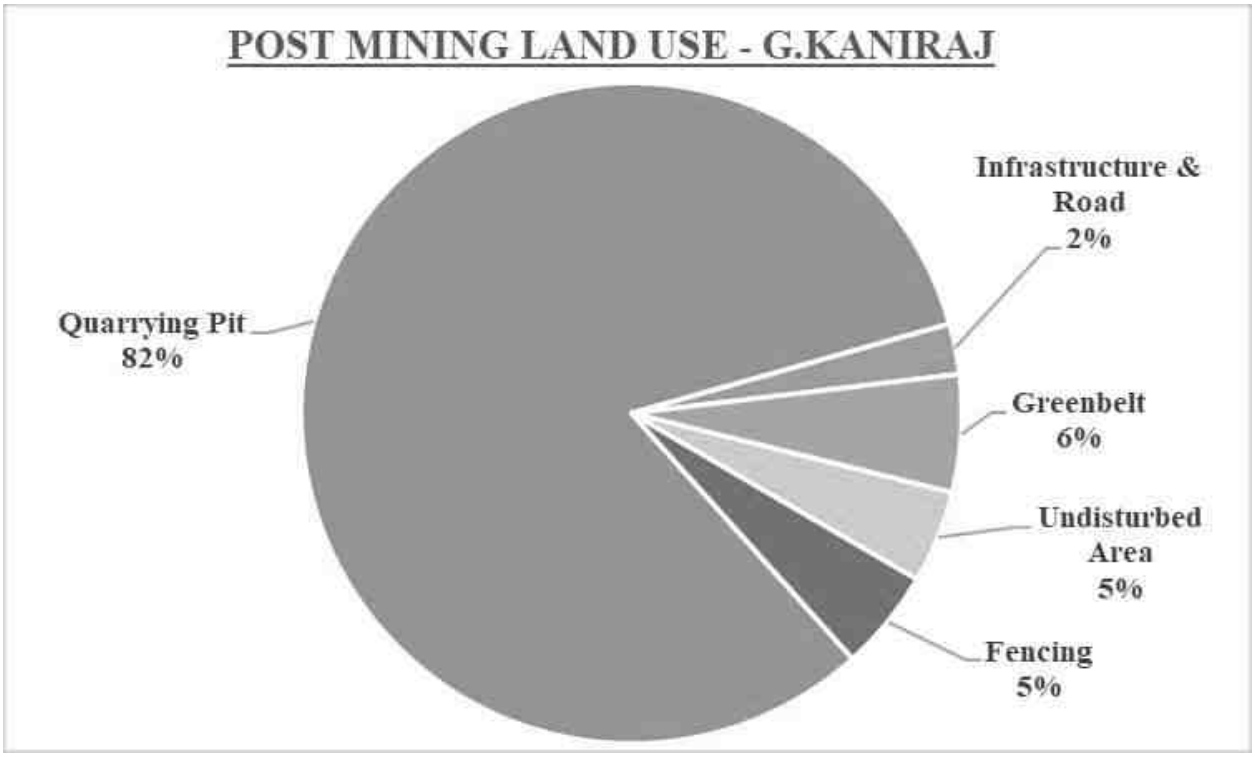
The entire mine lease area of Thiru S.Ragupathi of 1.303 Ha is a patta land. In the post mining stage, entire 1.00 Ha of mined out area will be left as water body, 0.03Ha will be the mine roads

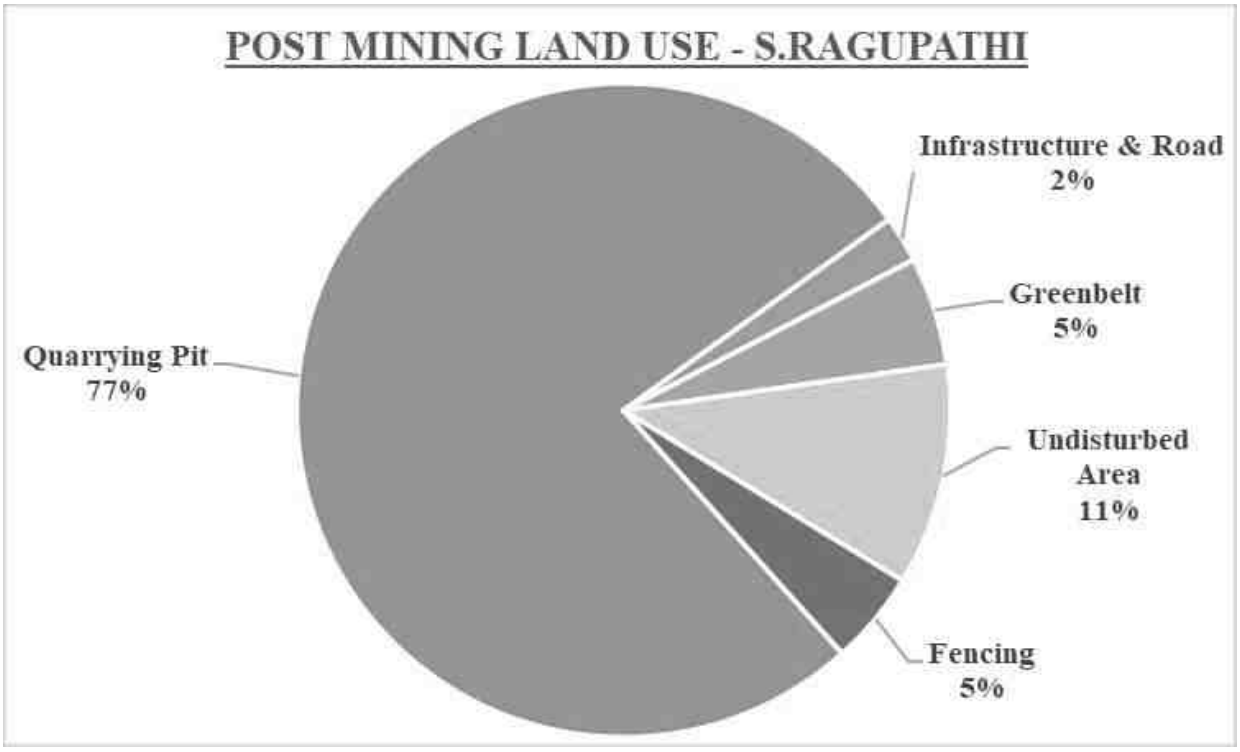
& infrastructure, 0.07 Ha will be covered with vegetation, 0.143 Ha will be undisturbed area and 0.06Ha will be fencing.

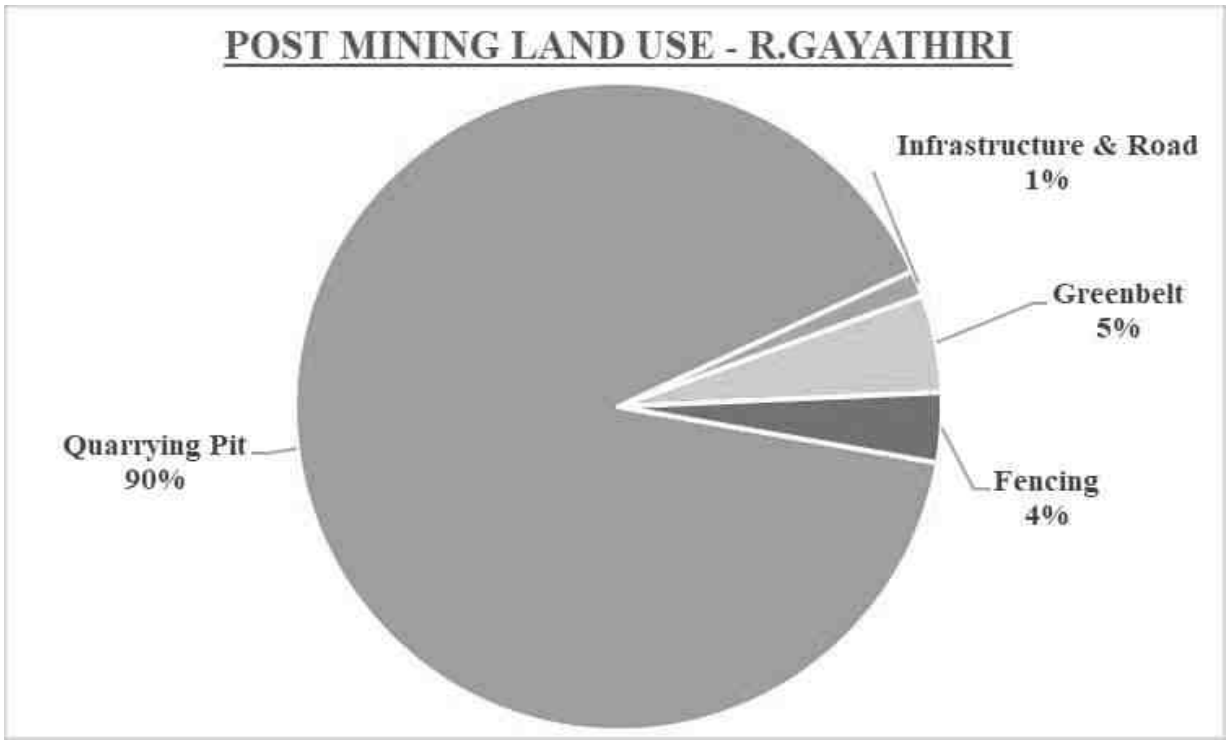
The entire mine lease area of Thiru S.Ramraj of 1.285 Ha is a patta land. In the post mining stage, entire 0.87 Ha of mined out area will be left as water body, 0.03 Ha will be the mine roads & infrastructure, 0.27 Ha will be covered with vegetation and 0.06 Ha will be undisturbed area and 0.055 Ha will be fencing.

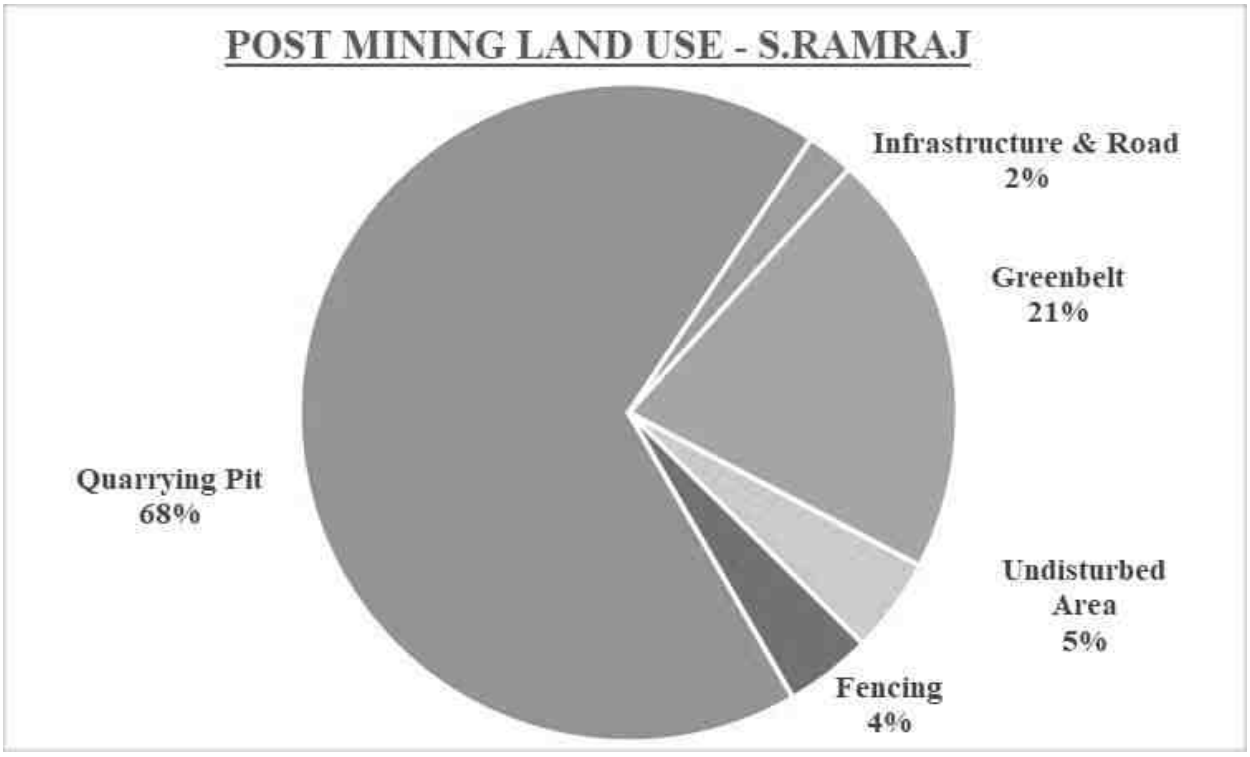
For all the four projects, in the post mining stage it will be ensured that the entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. The rainwater harvested in the mined out void shall be utilized to meet the water requirement.

Figure 7.4: Post Mining Land Use






POST MINING LAND USE - R.GAYATHIRI
Infrastructure & Road
1%
Greenbelt
5%
Quarrying Pit
90%
Fencing
4%


POST MINING LAND USE - S.RAMRAJ
Infrastructure & Road
2%
Greenbelt
21%
Quarrying Pit
68%
Undisturbed
Area
5%
Fencing
4%

7.4 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. b) Down the hole drill rod may break due to improper maintenance of rod.	• Periodical preventative maintenance and replacement of worn out accessories in the compressor and drill equipment. • As per manufacturers recommendation rod to be replaced and bits will be changed.
3.	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.
4.	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.
5.	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.
6.	Natural calamities	Unexpected happenings	The mine management is capable to deal with the situation.

7.4.1. 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

Mining operation in this 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

- 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.

7.5 REHABILITATION AND RESETTLEMENT (R & R) PLAN:

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.

7.6 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.**

7.7 PIT SLOPE STABILITY PLAN

- Factors affecting slope stability of the mine 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

- Proposed area is a hard rocky charnockite terrain comprising top gravel followed by and then hard rock.
- 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 safety 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:
  - 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.
  - 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^{o} to ensure slope stability.
  - Haul road formation will be at 1 in 16 slope with adequate road width.
  - 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.

CONCLUSION:

No adverse impact on the surrounding environment is envisaged from this project since the number of equipment's to be used to achieve this production is less and the magnitude of operation is of low level.

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 650 number of plants will be planted in and around the lease area.

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, appointing statutory personnel's like qualified mines manager, 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 plan is prepared for the lease period and already included in the approved mine plan.

Due to absence of perennial water bodies nearby where in any marine ecosystem is observed, no effect on this front is also expected. 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 in 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 - VIII

PROJECT BENEFITS

CHAPTER 8
PROJECT BENEFITS

The proposed quarry will improve physical and social infrastructures in the area like:

- Direct employment to 18 people.
- Indirect employment to 50 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 facilties for the local schools and panchyats

In short, the proposed Rough Stone and Gravel 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 has planned to allocate Rs.5 Lakhs for various activities under CER. The activities will be implemented once the mining operations commence. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.

* * * * * * * * *

CHAPTER - IX

ENVIRONMENTAL COST BENEFIT ANALYSIS

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 this project has been received from SEIAA, Tamil Nadu vide their letter No. SEIAA-TN/F.No.8925/SEAC/ToR-1118/2022 Dated: 23.03.2022. Environmental cost benefit analysis is not prescribed in the terms of reference. Hence, it is not applicable for this project.

* * * * * * * *

CHAPTER - X

ENVIRONMENTAL MANAGEMENT PLAN

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.

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 proponent 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, metalliferrous 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.

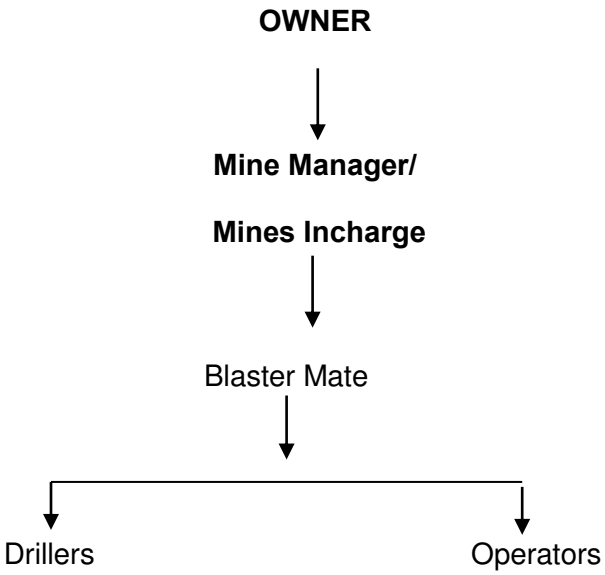
- ❖ Ensuring that all mining operations such as deployment of HEMM, etc are strictly conducted keeping with regulatory standards & maintaining safe working environment in the area.
- ❖ Providing periodical training on safety, Health, & Environment to all employers.
- ❖ Any infringement / violation of any rule or unsafe mining operations should be reported mines manager, should be reported by the foremen 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 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 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.

- 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

10.2.3 ENVIRONMENTAL MANAGEMENT PLAN:

10.2.1.1 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.

10.2.2.2 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:

- Regular water sprinkling in the transport roads using mobile tankers for dust suppression.
- 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
- Proper maintenance of haul roads, HEMM and dumpers.
- 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.
- Besides, there will be good green belt cover will be developed around mine periphery and in safety zone.
- There is a cart track passing along the southern side of the lease area for which 10m safety distance has been left. Green netting will be carried out in this side. Diamond wire fencing of 6 feet height will be carried out.

10.2.2.3 Water Environment:

There will be no process effluent generated from this 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 area as the entire material will be directly dispatched to the consumers.

Surface runoff management structures such as garland drain of 600m length connected to a settling pond will be constructed around the quarry 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.

10.2.2.4 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.

10.2.2.5 Ground Vibration

Since no blasting is envisaged no blasting induced vibration is expected.

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. Besides, no Schedule-I animals are observed in the core and buffer zone. There will be no major clearance of vegetation involved in this project. However, good greenbelt and plantation programmes are planned within the lease area.

In the lease area, safety barrier 7.5m is left around the periphery. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. This will boost the biological, visual and aesthetic outlook of the area. Elaborate details regarding the same is provided under section 4.6.4, Chapter-IV.

10.2.2.7 Socio-Economic Environment:

The proposed project operation 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 has earmarked an amount of Rs.5 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 No – 10.1**

Table 10.1: Environmental Control Cost

Sl. No	Mitigation Measure	Capital cost (Rs. in Lakhs)	Recurring Cost /Annum (Rs. in Lakhs)
Air Environment			
1	Compaction, gradation and drainage on both sides for Haulage Road	0.06	0.06
2	Water Sprinkling Arrangements	2.00	0.25
3	Air Quality will be regularly monitored as per norms within ML area & Ambient Area		0.50
4	Muffle blasting – To control fly rocks during blasting		0.00
5	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	0.00	0.00
6	No overloading of trucks/tippers/tractors-Manual Monitoring through Security guard		0.05
7	Stone carrying trucks will be covered by tarpaulin		0.10
8	Enforcing speed limits of 20 km/hr within ML area-Installation of Speed Governers	0.30	

Sl. No	Mitigation Measure	Capital cost (Rs. in Lakhs)	Recurring Cost /Annum (Rs. in Lakhs)
9	Regular monitoring of exhaust fumes as per RTO norms		0.05
10	Regular sweeping and maintenance of approach roads		0.12
11	Installing wheel wash system near gate of quarry	0.25	0.10
Sub-Total (A)		**2.61**	**1.23**
Noise Environment			
12	Source of noise will be during operation of transportation vehicles, HEMM- For this proper maintenance will be done at regular intervals.	Will be part of Operating Cost	
13	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done		
14	Adequate silencers will be provided in all the diesel engines of vehicles.		
15	It will be ensured that all transportation vehicles carry a fitness certificate.		
16	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	
17	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Will be part of Operating Cost	
18	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.- Blowing Whistle by Mining Mate / Blaster / Compentent Person		
19	Provision for Portable blaster shed	0.00	0.00
20	NONEL Blasting will be practiced to control Ground vibration and fly rocks		0.00
Sub-Total (B)		**0.00**	**0.00**
Water Environment			
21	Surface Runoff Management Structures	0.12	0.03
Sub-Total (C)		**0.12**	**0.03**
Implementation of EC, Mining Plan & DGMS Condition			
22	Waste management (Spent Oil, Grease etc.,)-Provision for waste collection and disposal through authorized agency	0.10	0.10
23	Installation of dust bins	0.05	0.02
24	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	0.10	0.01
25	Workers will be provided with Personal Protective Equipment's	0.36	0.18
26	Health check up for workers will be provisioned-IME & PME Health check up		0.18
27	First aid facility will be provided		0.05
28	Mine will have safety precaution signages, boards.	0.10	0.02
29	Barbed wire fencing is already available. Green net will be provided	2.43	0.10

Sl. No	Mitigation Measure	Capital cost (Rs. in Lakhs)	Recurring Cost /Annum (Rs. in Lakhs)
30	No parking will be provided on the transport routes. Separate parking area will be provided. Flaggers will be deployed for traffic management	0.06	0.02
31	Installation of CCTV cameras in the mines and mine entrance-Camera 4 Nos, DVR, Monitor with internet facility	0.30	0.05
32	Remuneration of statutory persons		3.00
Sub-Total (D)		**3.50**	**3.73**
Green Belt Development			
34	Plantation Inside the lease area (200 Nos.)	0.40	0.06
35	Plantation Outside the lease area (450 Nos.)	1.35	0.14
Sub-Total (E)		**1.75**	**0.20**
Grand Total		**7.98**	**5.18**

Towards EMP measures, Rs.7.98 lakhs is allocated under capital cost. Besides, Rs.5.18 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.

10.4 CONCLUSION:

A meticulously well planned Environmental Management Plan, with various programme schedules and timely execution objectives, as above, will ensure that the future environmental quality in the area will be 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.

* * * * * * *

CHAPTER-XI

CHAPTER 11

SUMMARY & CONCLUSION

11.1 INTRODUCTION:

Thiru G.Kaniraj proposes to operate a **Rough Stone and Gravel Quarry** at Survey Nos.202/1A2 over 1.215 Ha in Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar, District, Tamil Nadu and has initiated action towards obtaining environmental clearance. It is proposed to mine 87,982.25m^3 of Rough stone and 14,978.75m^3 of Gravel for a period of five years upto a depth of 20m for a period of 5 years.

Although the individual lease area of this project is less than 5 Ha, the other existing 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. As such Common EIA for Rough Stone and Gravel Quarries of Thiru G.Kaniraj, Tmt.R.Gayathiri, Thiru S.Ragupathi and Thiru S.Ramraj falling in the cluster along with separate assessment of impacts and EMP for each project is carried out. The details of the quarries located within the 500m radius of the project is given vide **Annexure-12.** Besides, there are other mines in the cluster extension. A cumulative impact study has been carried out and furnished in **Para 7.3, Chapter-VII.**

This draft EIA/EMP report pertains to the Rough Stone and Gravel Quarry of Thiru G.Kaniraj.

11.1.1 STATUTORY APPROVALS:

S.No	Approval	Given by	Letter Number and Date	Reference
1.	**Precise Area Communication Letter**	Assistant Director, Geology & Mining Virudhunagar	KV1/158/2021 Dated: 13.08.2021	**Annexure-1**
2.	**Mining Plan Approval**	Assistant Director, Geology & Mining Virudhunagar	KV1/158/2021, dated 01.09.2021	**Annexure-2**
3.	**Details of other quarries within 500m radius**	Assistant Director, Geology & Mining Virudhunagar	KV1/158/2021 Dated: 26.10.2021	**Annexure-12**

11.1.2 ENVIRONMENTAL CLEARANCE APPLICATION:

Particulars	Details
Terms of Reference	Letter No. SEIAA-TN/F.No.8925/SEAC/ToR-1118/2022 Dated: 23.03.2022
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Winter Season (December 2021 to February 2022)

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.

11.2 SALIENT FEATURES OF THE PROJECT:

Table 11.1: Site Details

Location	Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu
Survey No.	202/1A2
Coordinates	**Latitude:** 9°17'44.4"N to 9°17'50.3"N **Longitude:** 77°41'36.6"E to 77°41'43.0"E
Nearest Village	Sevalpatti – 3.6km (NE) Kundampatti – 1.5km (S) Appanayakkanpatti – 2.2Km (SW)
Nearest Town	Kovilpatti – 25km (SE)
Nearest Railway Station	Kovilpatti RS – 25km - SE
Nearest Airport	Thoothukudi - 85km - SE
Topography	The area applied for mining lease is a gentle plain terrain. Part of the lease area has already been mined out
Accessibility	The lease area can be approached from Alamelumangaipuram – Thiruvengadam which leads to SH-44.
Drainage	There is no major water body in the core zone. There is a nadi at a distance of 90 m (W) and Vaippar River is located at a distance of 320m (N).

Table 11.2: Environment Setting of The Study Area

PARTICULARS	DETAILS
Nearest major water bodies	Nadi - 90m (W), Vaippar River-320m- (N), Uppu Odai – 3.3km-(SE), Marugal Odai – 5.0km – (NE), Kayalkudi River - 7.2km – (NE).
Notified Archaeologically important places, Monuments	Nil within 10Km Radius.
Local Places of Historical and Tourism Interest	Nil within 10Km Radius.
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 10Km Radius.
Reserved / Protected Forests	Nil within 10 Km radius
Defence Relocations	Nil within 10 km radius
Seismic Zone	Zone – II (Least Active)
Other Industries in the area	Other than crushers, Roughstone quarries, no other major industries are located in the study area.

Table 11.3: Technical Description

A) PAST PRODUCTION:

Quarrying in this lease area was earlier carried out by G. Kaniraj for the period of 06.10.2016 – 05.10.2021 with the proceeding no. KV1/33631/2013 dated 16.09.2016. Environmental clearance for the earlier lease area obtained from SEIAA – TN vide letter no Lr.No. SEIAA-TN/F.No.3260/EC/1(a)/2629/2015 dated 05.01.2016 for Rough stone & Gravel quarrying at SF no 202/1A2, Appaiyanaickenpatti village, Vembakottai taluk, Virudhunagar District, Tamil Nadu over 1.21.5 Ha of the lease area. **(Annexure-13 of AMP)**

Existing Pit Dimensions

Pit No	Length (m)	Width (m)	Depth (m)
Old Pit No 1	93	43	2.5
Old Pit No 2	93	43	3.5
Total	93	43	6.0

B) Present proposal:

<table>
<tr><th>PARTICULARS</th><th>DETAILS</th></tr>
<tr><td>Geological reserve</td><td>Roughstone – 2,34,206 cum , Gravel- 25,460 cum</td></tr>
<tr><td>Mineable reserve</td><td>Roughstone – 87,982 cum , Gravel - 14,978.75 cum</td></tr>
<tr><td>Method of Mining</td><td>Open cast & semi mechanized without blasting method of mining with shallow jackhammer excavator, transportation by tractor will be carried out.</td></tr>
<tr><td>Production</td><td>
<table>
<tr><th>YEAR</th><th>ROUGHSTONE (m3)</th><th>GRAVEL (m3)</th></tr>
<tr><td>I</td><td>12,478.50</td><td>11,041.25</td></tr>
<tr><td>II</td><td>15,986.25</td><td>3,937.50</td></tr>
<tr><td>III</td><td>19,875.00</td><td>-</td></tr>
<tr><td>IV</td><td>19,995.00</td><td>-</td></tr>
<tr><td>V</td><td>19,647.50</td><td>-</td></tr>
<tr><td>Total</td><td>87,982.25</td><td>14,978.75</td></tr>
</table>
</td></tr>
<tr><td>Waste Generation and Management</td><td>There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. The top gravel will be supplied to needy customers. The excavated rough stone will be manually dressed into small building stones for foundation purpose and fencing purposes then loaded into tippers for transportation to the customers.</td></tr>
<tr><td>Ultimate Depth</td><td>20m</td></tr>
<tr><td>Man power</td><td>18 people</td></tr>
<tr><td>Mode of transport</td><td>By Road</td></tr>
<tr><td>Water requirement</td><td>5.0 KLD</td></tr>
<tr><td>Source of water</td><td>The required water will be procured from outside agencies initially. Later, water collected in the mine pit will be used to meet the needs.</td></tr>
<tr><td>Power requirement</td><td>All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc will be met from state grid.</td></tr>
<tr><td>Life of the mine</td><td>5 Years</td></tr>
<tr><td>Project cost</td><td>Rs. 32,16,876/-</td></tr>
</table>

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 **Winter Season (December 2021 to February 2022)** For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. Core zone is considered as the total lease area, while buffer zone encompasses an area of 10 km radius distance from the periphery of core zone.

11.3.2 SOCIO-ECONOMIC STATUS:

The proposed quarry is located in in Appainaickenpatti Village, Vembakottai Taluk, Virudhunagar District. Based on 2011 census data, in the 10km radius there are 35 Rural villages & 2 urban areas namely Alangulam (CT) , Thiruvenkadam (TP) from six taluks namely Sivakasi, Rajapalayam, Sattur of Virudhunagar District, Sankarankoil of Tirunelveli District and Kovilpatti of Thoothukkudi District.

Table 11.4: Social, Economic And Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	49528	49.35
Female Population	50838	50.65
Total	**100366**	**100**
B. Caste-wise population distribution		
Scheduled Caste	23360	23.27
Scheduled Tribes	149	0.15
Other	76857	76.58
Total	**100366**	**100**
C. Literacy Levels		
Total Literate Population	69612	69.36
Others	30754	30.64
Total	**100366**	**100**
D. Occupational structure		
Main workers	49466	49.30
Marginal workers	5157	5.10

Details	Population	Percentage
Total Workers	**54623**	**54.40**
Total Non-workers	**45743**	**45.60**
Total	**100366**	**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:

Baseline monitoring was carried out during Winter Season (December 2021 to February 2022). The details of the same are provided below:

Table 11.5: Baseline Data

A) METEOROLOGICAL DATA	**Monitoring Location -** Near Core Zone		
PARAMETERS	**MINIMUM**	**MAXIMUM**	
Temperature in °C	19.0	36.0	
Humidity in %	21.8	99.0	
Wind speed Km/Hr	<1.8	25.9	
Predominant wind direction (From)	NE		
B) AMBIENT AIR QUALITY	**Monitoring Location –** 6 locations		
PARAMETER	**RESULT (µg/m3)**		***LIMIT (µg/m3)**
Location	**Core Zone**	**Buffer Zone**	
Particulate Matter (Size <10 µm)	59.6 – 76.3	41.4 – 70.2	100
Particulate Matter (Size <2.5 µm)	28.2 – 36.6	19.3 – 32.6	60
Sulphur Dioxide (as SO_2)	5.3– 9.1	4.1 – 7.5	80
Nitrogen Dioxide (as NO_2)	8.5 – 12.7	7.1 – 12.3	80
Conclusion: The existing Ambient Air Quality levels for PM10, PM2.5, 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)			

C) WATER QUALITY	**Monitoring Location –** 6 locations	
PARAMETER	**Result**	***LIMIT (µg/m3)**
pH at 25 ˚C	7.29 – 7.69	**6.5-8.5**
Total Dissolved Solids, mg/L	296 – 590	**2000**
Chloride as Cl-, mg/L	38.50 – 162	**1000**
Total Hardness (as CaCO3), mg/L	190 – 395	**600**
Total Alkalinity (as CaCO3), mg/L	277– 310	**600**
Sulphates as SO42-, mg/L	15.20 – 186	**400**
Iron as Fe, mg/L	BDL(D.L - 0.01) – 0.07	**0.3**
Nitrate as NO3, mg/L	BDL(D.L – 1.0) – 5.45	**45**
Fluoride as F, mg/L	BDL(D.L – 0.1) – 0.53	**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) NOISE LEVELS	**Monitoring Location –** 6 locations		
PARAMETER	**RESULT dB(A)**		***LIMIT (µg/m3)**
	Day Equivalent	**Night Equivalent**	
Core Zone	49.7	38.8	**90**
Buffer Zone	44.8 – 48.2	36.7 – 42.9	**Day Equivalent - 55dB(A), Night Equivalent - 45dB(A)**
*Permissible noise for industrial workers as laid down by CPCB (at 8 hrs Exposure Time). While comparing with the MoEF&CC Norms, the monitored ambient noise levels are generally within the limit values.			

E) SOIL QUALITY	**Monitoring Location –** 3 locations
PARAMETER	**Range of values**
pH	6.21 – 7.57
Electrical Conductivity (µmho/cm)	82.29 – 98.54
Organic matter (%)	2.45 – 3.21
Total Nitrogen (mg/kg)	589 – 1020
Phosphorus (mg/kg)	2.14– 3.65
Sodium (mg/kg)	765 - 1035
Potassium (mg/kg)	610 – 776
Conclusion: The soil quality data for the 3 samples collected and analyzed are provided in Table No – 3.17.	

F) LAND EVIRONMENT:

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 11.6: Land Use in 10Km Buffer Zone

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	48.72	14.56
2	Fallow Land	101.25	30.25
3	Land With Scrub	139.24	41.61
4	Land Without Scrub	25.36	7.58
5	Water bodies	9.79	2.93
6	Settlement	7.44	2.22
7	Mining Area/ Industries	2.86	0.85
	Total	334.65	100

From the above table it is seen that 14.56 % of the study area is agriculture land and 30.25 % are fallow land. Land with scrub constitutes 41.61 %, lands without scrub constitute 7.58% and waterbodies constitute 2.93% and remaining constitute 3.07 %. Details are given in **Para 3.4, Chapter – III**.

G) BIOLOGICAL ENVIRONMENT:

Flora: The lease area is a non-forest, private land. Major part of lease area is partly mined out area and remaining area is barren land with thorny bushes & shrubs (Prosopis juliflora). The PIZ is a dry area and dominated with thorny bushes of Prosopis juliflora followed by mining and crusher plants. A total of 11 tree species from 7 families are recorded in the PIZ. From the above resut it is clearly shows the PIZ is disturbed and has less diversity. Hence it is important to improve the plantation of the study area.

Fauna: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals like Cows, Buffalos, Dogs, Cats etc., are commonly found. The lease and 10 Km buffer zone does not fall in the Western Ghats ESA boundary. The detailed list of fauna Species in the buffer zone is given in **Table No - 3.13, Chapter - III**.

H) HYDROLOGICAL STUDY:

The area applied for mining lease is a gentle plain terrain. Part of the lease area has already been mined out. The topography of the lease area ranges around 95 m RL. There is no major water body in the core zone. Nadi – 90 m (W) and Vaippar River at a distance of 320m (N).

The general trend of depth to water level for Aruppukottai Block, Viruthunagar District, Tamil Nadu the was obtained from the data obtained from India-WRIS, Department of Water Resources, Ministry of Jal Shakti.

Based on geophysical study there is no observation of fractured zone/ fissure vein up to 60m of the study area. During the rainy time only surface water flow in Vaippar River is observed and in the remaining period it is almost dry. The Ammiyarpatti village tanks are also dry due to scanty rainfalls. Based on geophysical study it can be concluded that there is no influence in vaippar river non- perennial tributary in the study area since most of the time it is dry and the intervening mining and the river bed is infested with hard rocky formation.

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

11.4.1 GENERAL:

This is a proposed project and Semi – Mechanized Open Cast mining without blasting will be carried out to quarry out Rough Stone & Gravel. The identified impacts due to this mine 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:

Generally mining operation may cause dust generation and gaseous emission if proper mitigative measures are not taken. Particulate matter smaller than 10 microns, referred to as PM10, can settle in the bronchi and lungs and cause health problems. Particles smaller than 2.5 micrometers (PM2.5), 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, NOx, CO etc., from diesel driven equipment's. Larger suspended particles are generally filtered in the nose and throat and do not cause problems. Higher concentration of SO2, NOx, CO may cause some health effect on the human beings exposed to it

Since the mining in this lease will be with jackhammer drilling (without blasting), splitting by feather & wedges, manual dressing in to building stones, fencing stones, manual loading & transportation by trucks to needy customers & the production from this lease is very less there will not be any appreciable impact on the air environment. The top gravel is soft and can be directly excavated, loaded and transported to the consumers.

As such there will be negligible level of dust generation & gas emission due to mining operations in this lease area.

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

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

- Regular wetting of transport road using mobile water tanker.
- Wet drilling / Covering of drill holes with wet clothes
- Proper maintenance of roads.
- Avoiding overloading of tippers & Transportation of material by tarpaulin covered trucks
- Proper maintenance of HEMM to minimize gaseous emission
- Setting up of tyre washing facility in the lease area exit.
- Vehicular emission tests with digital smoke meter.
- Development of 650 number of plants in and around the lease area

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 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. Ground Level Concentration (GLC) have been computed using hourly meteorological data for particulate matter PM10 and PM2.5.

The resultant added concentrations with baseline figures even at worst scenario, show that the values of ambient air quality with respect to PM_{10} are in the range 55.1μg/m3 to 77.8μg/m3 and

with respect to PM2.5 are in the range of 25.9 μg/m3 to 37.6μg/m3 which are within the statutory limits in each case.

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:

Water Requirement: The total water requirement for this project will be 5.0 KLD comprising 1.0 KLD for drinking water and domestic use, 3.0 KLD for dust suppression and 1.0 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 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 600m 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.
		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, before outlet. etc.
C	Drainage Course	Disturbance to drainage course	Non- perennial Vaippar river and its tributary Nadhi is located 320 meter (North) and 90.0 m (west) respectively from the lease area. Based on geophysical study there is no observation of fractured zone/ fissure vein up to depth of 60m in the study area. During the rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry. As such no major impact is envisaged on the nearby water bodies due to project operations.

- **Stage of Groundwater Development:** The groundwater resource was obtained from Central Ground Water Board, South Eastern Costal Region – 'District groundwater brochure, Virudhunagar District.'. Based on the report it is seen that this area can be categorized as 'Safe' from ground water development point of view.
- **Generation of mine pit water:** Based on the available information and the geophysical it is observed that the project area is considered to have poor groundwater potential. Productive aquifers are expected beyond depth of 60m BGL. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. There is no water seepage noticed in to the already quarried pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

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 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 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.
- Provision of tin sheet and green net on the lease periphery.

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

11.4.5. VIBRATION:

Since no blasting is envisaged no blasting induced vibration is expected.

.11.4.6 IMPACT ON LAND ENVIRONMENT:

The lease area over an extent of 1.215Ha located in survey number 202/1A2 is a patta land in the name of the applicant Thiru G.Kaniraj. 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, entire 1.00.0 Ha will be used as mined out area at 20m depth. Ultimately the entire mined out area will be left as water body 0.03.0 Ha is road & infrastructure, 0.07.0 ha will be under afforestation, 0.05.5 ha will be undisturbed area and 0.06.0 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:

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. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 650 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 problems will arise here.

The mining operations in the proposed quarry will employ about 18 people. 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, 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 consultation with the locals based on the need & priority it will be implemented.

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.
- A total budgetary provision of Rs.50,000 under capital cost and Rs.10,000 is allocated under recurring cost towards Occupational health and Safety Budget.

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 1 trips per hour. The transport route can easily 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 Rough stone in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Proper maintenance of transport roads
- ❖ Proper maintenance of transport vehicles.

- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.

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 this mine. Hence no liquid waste is generated.

The hazardous waste generated in this mine 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. 7.98 lakhs is allocated under capital cost. Besides, Rs.5.18 lakhs will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue. Further details of the capital and recurring cost of environmental management has been provided in in Table No. 10.2, Chapter-X.

11.6 ADDITIONAL STUDIES:

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. R&R Plan
4. Mine closure plan

This draft EIA/EMP report will be exposed to public consultation 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**.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius along with this subject project works out to >5 Ha. The baseline monitoring carried out for this project reflects the cumulative impact of the existing quarry. For proposed quarries, the cumulative impact of these proposed quarry operations on the environment is studied.

Air : The cumulative impact on ambient air quality for PM_{10} and $PM_{2.5}$ due to the operations of these proposed projects are predicted based on Air Quality Model simulations. It can be seen that the resultant added concentrations with baseline figures even at worst scenario and cumulative impact of these projects show that the values of ambient air quality with respect to PM_{10} are in the range of 55.1 $\mu g/m^3$ to 87.1 $\mu g/m^3$ and with respect to $PM_{2.5}$ are in the range of 25.9 $\mu g/m^3$ to 41.7 $\mu g/m^3$ which are within the statutory stipulations in respective case.

Water : The quantum of water required for these projects total to 31 KLD comprising 10KLD for the quarry of Tmt.R.Gayathiri and 8 KLD each for Thiru S.Ragupathi,Thiru S.Ramraj and 5 KLD for Thiru G. Kaniraj,. Though it may be sourced from outside agencies initially, for these projects it is planned to use the rain water collected in the mine sump later.

The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. From the nearby working quarries it is observed there are no seepages in the mine faces because of the hard rock formation. The ground water table in this area is deep. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.

Besides, the stage of groundwater development of Vembakottai Taluk where the study area falls is 58% as per the groundwater resource data obtained from technical report of the Central Ground Water Board, South Eastern Costal Region – 'District groundwater brochure, Virudhunagar District.' In view of this, this area can be categorized as 'Safe' from ground water development point of view. Thus there is scope for further ground water development.

During the rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry. As such no major impact is envisaged on the nearby water bodies due to project operations

Noise : Cumulative post project noise levels in the nearby 5 villages are within the statutory limits of 55dB(A). Besides it is proposed to carry out various mitigative measures such as carrying out greenbelt and afforestation to act as acoustic barriers.

Vibration: Since no blasting is envisaged no blasting induced vibration is expected.

Traffic: The mined out minerals will be transported by means of trucks to the consumers like crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. The total trips from these projects there will be about 10 trips per hour. The existing road can absorb this traffic due to this project. Various measures like proper maintenance of road, covering of the loaded truck with tarpaulin, water sprinkling will be carried out to ensure no adverse impact on the logistical front.

Socio-Economy: The mining operations in the 4 proposed mines will provide direct employment opportunity and indirect employment opportunity for scores of people through allied opportunities in logistics, contract workers, trading, repairing works etc. Towards development of the

surrounding area, various activities will be carried out under Corporate Environmental Responsibility for all these projects.

Land use: For all the three projects, in the post mining stage it will be ensured that the entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. The rainwater harvested in the mined out void shall be utilized to meet the water requirement.

11.7 CONCLUSION:

By systematic and scientific mining adhering to all the statutory norms and enforcing and strictly implementing the above said mitigation measures mentioned in this report, no adverse impact is envisaged. The proposed mining project will benefit this region in the fields of potential employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, medical healthcare systems, etc. in its own way and also revenue to Government through royalty, taxes etc.

* * * * * * * * *

CHAPTER-XII

SUMMARY AND CONCLUSION

CHAPTER 12

DISCLOSURE OF CONSULTANTS ENGAGED

Creative Engineers & Consultants, Chennai – 600 059, is an **NABL** accredited testing laboratory and **NABET** accredited consultancy. Team of people are given below:

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
Dr. N. Radhakrishnan	M.Sc., M.Tech., Ph.D	Functional area Expert (Land use)	Over 25 years of experience in using the advanced spatial analysis techniques in GIS environment. Specialized in Spatial Information Technology and Applications (remote sensing, GIS)
Mr.S.S.Rajendran	M.Sc. (Pharmaceutical Chemistry)	Lab head	More than 9 years of experience in Environmental laboratory.
Mrs. V. Sivaranjani	M.Sc. (Env. Sci.)	Functional Area Expert (AQ,WP)	More than 8 years of experience in preparation of EIA / EMP reports
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

EXPERT NAME	QUALIFICATION	POSITION	EXPERIENCE
			in the field of socio economy 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, FAE (EB,SC,LU,AP)	More than 6 years of experience in Environment and allied fields.
Ms. G. Sandhya	B. Tech Chemical Engineering	Functional Area Expert (AQ, WP)	Over 4 years experience in preparation of EIA/EMP reports

* * * * * * * *

ANNEXURES

ANNEXURE - IV

Annexure- 1

புவியியல் மற்றும் சுரங்கத்துறை

ந.க. எண்: கேவி1/158/2021-கனிமம், மாவட்ட ஆட்சியர் அலுவலகம், விருதுநகர்.

நாள்: .08.2021.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம்- வெம்பக்கோட்டை வட்டம் - அப்பையநாயக்கன்பட்டி கிராமம் பட்டா எண்.1783 புலஎண்கள்.202/1ஏ2 1.21.50 ஹெக்டேர் 5 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக்கோரியுள்ளது - சரியான பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

பார்வை:

1. திரு.கு.கனிராஜ் த/பெ.குருசாமி தென்காசி மாவட்டம் விண்ணப்பம் நாள்: 24.02.2021.
2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/158/2021, நாள்: 01.03.2021
3. சாத்தூர் வருவாய் கோட்டாட்சியர் கடிதஎண். ந.க.அ2/1574/2021 நாள்:21.06.2021
4. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்: 22.07.2021
5. 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
7. அரசாணை எண்.208, தொழில் (எம்.எம்.சி.1) துறை, நாள்: 21.09.2020.
8. தொடர்புடைய ஆவணங்கள்.

*****

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புலஎண்.202/1A2 மொத்தப்பரப்பு 1.21.5 ஹெக்டேர் பரப்பு நிலத்தில் ஐந்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக்கோரி தென்காசி மாவட்டம், சங்கரன்கோவில் வட்டம், திருவேங்கடம் கிராமம், இந்திரா நகர், கதவு எண்.60C என்ற முகவரியைச் சேர்ந்த திரு.கு.கனிராஜ் த/பெ.குருசாமி என்பவர் பார்வை 1-ல் காணும் மனுவில் விண்ணப்பம் செய்துள்ளார்.

சாத்தூர் வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோர் கீழ்காணும் நிபந்தனைகளுக்குட்பட்டு மேற்கண்ட புலங்களில்

கனிராஜ்

130

உடைகல், கிராவல் குவாரி குத்தகை உரிமம் ஐந்தாண்டுகளுக்கு வழங்க பரிந்துரை செய்துள்ளனர்.

1) **அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.**
2) புல எண். 202/2, 203/4-ல் அமைந்துள்ள வண்டிப்பாதைக்கு 10மீ பாதுகாப்பு இடைவெளி தூரம் கடைபிடிக்க வேண்டும்.
3) பொதுமக்கள் / 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 பேணபட வேண்டும்.
6) குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7) கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புலஎண்.202/1A2 மொத்தப்பரப்பு 1.21.5 ஹெக்டேர் பரப்பு நிலத்திற்கு 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்:19 மற்றும் 20-ன்படி ஐந்து வருட காலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise area) கருதப்படுகிறது.

தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண்:41ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining Plan) 90 தினங்களுக்குள் சமர்ப்பிக்குமாறும், விதிஎண்:42-ன்படி மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு.கு.கனிராஜ் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்

பெறுநர்
திரு.கு.கனிராஜ்
த/பெ. குருசாமி,
60சி, இந்திரா நகர்,
கீழத் திருவேங்கடம் கிராமம்,
சங்கரங்கோவில் வட்டம், தென்காசி மாவட்டம்.

நகல் :
உறுப்பினர் செயலாளர்,
மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம்,
சென்னை.

Annexure- 2

Annexure-1

From

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

To

Thiru.G.Kaniraj,
S/o.Gurusamy,
60C, Indra Nagar,
Keela Thiruvengadam Village,
Sankarankovil Taluk,
Tenkasi District.

Roc. No: KV1/158/2021, Dated: 01.09.2021.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District – Vembakottai Taluk - Appaiyanaickenpatti Village – Patta Land – S.F.No: 202/1A2 – Extent 1.21.50 Hectares – Quarry lease application preferred by Thiru.G.Kaniraj for quarrying Rough Stone and Gravel - Approval of Mining Plan - Regarding.

Ref:
1. Quarry lease application received from Thiru.G.Kaniraj, dated: 24.02.2021.
2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No. KV1/158/2021, Dated: 13.08.2021.
3. Thiru.G.Kaniraj letter, dated: 23.08.2021.

******

Thiru.G.Kaniraj has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an Extent of 1.21.50 Hectares of Patta Land in S.F.No: 202/1A2 of Appaiyanaickenpatti Village, Vembakottai Taluk for a period of 5 (Five) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant permission to quarrying Rough Stone and Gravel in over an Extent of 1.21.50 Hectares of Patta Land in S.F.No: 202/1A2 for a period of 5 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 Geology and Mineable reserves are discussed in chapter 3 of part A. The applicant can quarry the mineral in the following measurements:-

MINEABLE RESERVES (As per Mining Plan)

Mineral	Section	Bench	Length (M)	Width (M)	Height (M)	Volume in CUM	Total Volume in CUM
Gravel	P-Q & A-B	I	116.0	31	2.5	8990.00	14978.75
	P-Q & C-D	I	101.5	63	2.5	15986.25	
	DEDUCT EXT. PIT = 93M X 43M X 2.5M					-9997.50	
Roughstone	P-Q & A-B	I	116	31	2.5	8990.00	87982.25
	P-Q & A-B	II	111	21	5.0	11655.00	
	P-Q & A-B	III	106	11	5.0	5830.00	
	P-Q & C-D	I	101.5	63	2.5	15986.25	
	P-Q & C-D	II	96.5	53	5.0	25572.50	
	P-Q & C-D	III	91.5	43	5.0	19672.50	
	P-Q & C-D	IV	86.5	33	5.0	14272.50	
	DEDUCT EXT. PIT = 93M X 43M X 3.5M					-13996.50	
TOTAL MINEABLE RESERVES							**1,02,961**

The available mineable reserves have been computed as 87,982.25 m^3 as Rough Stone and Gravel as 14,978.75 m^3 up to the depth of 20.0 metres from the ground level.

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

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.G.Kaniraj for quarrying Rough Stone and Gravel over an Extent of 1.21.50 Hectares of Patta Land in S.F.No: 202/1A2 of Appaiyanaickenpatti Village, Vembakottai Taluk and Virudhunagar

District for a period of 5 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,
Panagal Maligai,
No. I Jeenis Road,
Saidapet, Chennai-15.

ANNEXURE - IX

Annexure- 3

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : விருதுநகர் **வட்டம் : வெம்பக்கோட்டை**

வருவாய் கிராமம் : அப்பையநாயக்கன்பட்டி **பட்டா எண் : 1783**

உரிமையாளர்கள் பெயர்

1. குருசாமி மகன் கனிராஜ்

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	
202	1A2	1 - 21.50	2.47	--	--	--	--	---- -- 23-05-2002
		1 - 21.50	2.47					

குறிப்பு2 :

1.	மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் [illegible] என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2.	இத் தகவல்கள் 17-02-2021 அன்று 07:17:33 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3.	கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

கனிராஜ் 161

Annexure- 4

POPULATION BREAKUP & LITERACY LEVEL IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Rural / urban	HOUSE HOLDS	POPULATION			POPULATION BELOW 6 AGE GROUP			SCHEDULE CASTE			SCHEDULE TRIBE			LITRERATES			ILLITRERATES		
					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,Sivakasi Sub-District, Virudhunagar District																						
1	1	Appanayakkanpatti	**Rural**	1017	4594	2135	2459	379	202	177	1086	529	557	0	0	0	3291	1620	1671	1303	515	788
		total (A)		**1017**	**4594**	**2135**	**2459**	**379**	**202**	**177**	**1086**	**529**	**557**	**0**	**0**	**0**	**3291**	**1620**	**1671**	**1303**	**515**	**788**
2-5 km,Sivakasi Sub-District, Virudhunagar District																						
2	1	Kilanmarinadu	**Rural**	637	2388	1190	1198	252	116	136	525	261	264	0	0	0	1614	914	700	774	276	498
Sattur Sub-District, Virudhunagar District																						
3	1	Sevalpatti	**Rural**	1316	4806	2438	2368	569	288	281	579	307	272	21	12	9	3098	1795	1303	1708	643	1065
4	2	Kuganparai	**Rural**	394	1290	641	649	119	61	58	167	78	89	0	0	0	899	489	410	391	152	239
Sankarankoil Sub-District,Tirunelveli District																						
5	1	Chattrappatti	**Rural**	403	1420	699	721	151	69	82	800	395	405	0	0	0	1020	562	458	400	137	263
6	2	Varaganur	**Rural**	781	2574	1268	1306	245	133	112	574	290	284	0	0	0	1790	987	803	784	281	503
Sankarankoil Sub-District,Tirunelveli District																						
7	1	Thiruvenkadam (TP)	**Urban**	2368	8337	4144	4193	865	454	411	2281	1151	1130	78	37	41	5866	3234	2632	2471	910	1561
		total (B)		**5899**	**20815**	**10380**	**10435**	**2201**	**1121**	**1080**	**4926**	**2482**	**2444**	**99**	**49**	**50**	**14287**	**7981**	**6306**	**6528**	**2399**	**4129**
5-10 km,Rajapalayam Sub-District, Virudhunagar District																						
8	1	Gopalapuram	**Rural**	423	1461	708	753	128	61	67	385	189	196	0	0	0	1051	572	479	410	136	274
9	2	Vadagarai	**Rural**	992	3454	1720	1734	316	156	160	91	42	49	0	0	0	2539	1413	1126	915	307	608
Sivakasi Sub-District, Virudhunagar District																						
10	1	Edirkottai	**Rural**	1203	4329	2129	2200	465	254	211	331	156	175	0	0	0	3086	1656	1430	1243	473	770
11	2	Kongankulam	**Rural**	318	1050	507	543	87	44	43	138	64	74	0	0	0	761	409	352	289	98	191
12	3	Alangulam (Part)	**Rural**	508	1924	1004	920	164	95	69	480	247	233	0	0	0	1473	812	661	451	192	259
13	4	Kundayiruppu	**Rural**	1846	6812	3365	3447	852	424	428	1677	820	857	0	0	0	4602	2498	2104	2210	867	1343
14	5	Kangaraseval	**Rural**	429	1627	790	837	180	96	84	408	187	221	0	0	0	1047	561	486	580	229	351
15	6	Vembakottai	**Rural**	1196	4478	2225	2253	573	285	288	756	371	385	0	0	0	3128	1714	1414	1350	511	839
16	7	Surarpatti	**Rural**	406	1523	751	772	195	103	92	999	496	503	0	0	0	933	525	408	590	226	364
17	8	Lakshmipuram	**Rural**	1603	5610	2771	2839	577	251	326	1327	652	675	5	3	2	3847	2156	1691	1763	615	1148
Sattur Sub-District, Virudhunagar District																						
18	1	Sankarapandiyapuram	**Rural**	893	3200	1580	1620	315	163	152	1116	540	576	0	0	0	2096	1171	925	1104	409	695
19	2	Thlukkankurichchi	**Rural**	655	2294	1116	1178	269	135	134	143	66	77	0	0	0	1409	781	628	885	335	550
20	3	Sippipparai	**Rural**	677	2299	1115	1184	199	103	96	832	414	418	0	0	0	1593	856	737	706	259	447
Sankarankoil Sub-District,Tirunelveli District																						
21	1	Kalingappatti	**Rural**	1775	6537	3242	3295	641	330	311	1573	784	789	24	12	12	4347	2429	1918	2190	813	1377
22	2	Naduvappatti	**Rural**	290	998	492	506	81	50	31	78	35	43	0	0	0	589	328	261	409	164	245
23	3	Maipparai	**Rural**	542	1842	885	957	157	76	81	322	161	161	0	0	0	1272	684	588	570	201	369
24	4	Sangupatti	**Rural**	677	2418	1222	1196	228	122	106	1104	559	545	11	6	5	1673	959	714	745	263	482
25	5	Vellakulam	**Rural**	1152	3946	1903	2043	322	164	158	553	269	284	0	0	0	2787	1485	1302	1159	418	741
26	6	A.Karisalkulam	**Rural**	914	3394	1634	1760	330	169	161	341	159	182	0	0	0	2248	1219	1029	1146	415	731
27	7	Kulasekarapperi	**Rural**	171	645	327	318	53	25	28	0	0	0	0	0	0	416	239	177	229	88	141
28	8	Kurunjakulam	**Rural**	397	1425	675	750	122	66	56	616	282	334	9	4	5	1069	562	507	356	113	243

29	9	Sundaresapuram	**Rural**	95	323	154	169	38	17	21	28	19	9	0	0	0	215	116	99	108	38	70
30	10	Kulakkattakurichi	**Rural**	278	854	418	436	78	41	37	194	93	101	0	0	0	558	321	237	296	97	199
Kovilpatti Sub-District,Thoothukkudi District																					
31	1	Sundaresapuram	**Rural**	335	1179	613	566	116	54	62	459	242	217	0	0	0	874	508	366	305	105	200
32	2	Kuruvinatham	**Rural**	439	1640	826	814	223	112	111	722	365	357	0	0	0	1126	615	511	514	211	303
33	3	Mukkuttumalai	**Rural**	297	896	441	455	98	65	33	272	139	133	0	0	0	586	310	276	310	131	179
34	4	Lakshmiammalpuram	**Rural**	316	1115	545	570	108	63	45	724	361	363	0	0	0	826	444	382	289	101	188
35	5	Nakkalamuthanpatti	**Rural**	351	1215	612	603	118	67	51	396	189	207	0	0	0	826	462	364	389	150	239
36	6	Vadakkuppatti	**Rural**	447	1539	768	771	163	75	88	476	220	256	0	0	0	1248	656	592	291	112	179
Sivakasi Sub-District, Virudhunagar District																					
37	1	Alangulam (CT)	**Urban**	1364	4930	2475	2455	456	236	220	807	398	409	1	1	0	3809	2052	1757	1121	423	698
		total (C)		**20989**	**74957**	**37013**	**37944**	**7652**	**3902**	**3750**	**17348**	**8519**	**8829**	**50**	**26**	**24**	**52034**	**28513**	**23521**	**22923**	**8500**	**14423**
		Grand Total (A+B+C)		**27905**	**100366**	**49528**	**50838**	**10232**	**5225**	**5007**	**23360**	**11530**	**11830**	**149**	**75**	**74**	**69612**	**38114**	**31498**	**30754**	**11414**	**19340**

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

Annexure- 5

OCCUPATIONAL STRUCTURE IN THE BUFFER ZONE

Sl.No	No. of Villages	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,Sivakasi Sub-District, Virudhunagar District																	
1	1	Appanayakkanpatti	**Rural**	1125	1097	85	99	307	499	28	19	705	480	54	106	956	1256
		total (A)		**1125**	**1097**	**85**	**99**	**307**	**499**	**28**	**19**	**705**	**480**	**54**	**106**	**956**	**1256**
2-5 km,Sivakasi Sub-District, Virudhunagar District																	
2	1	Kilanmarinadu	**Rural**	648	417	38	21	53	141	8	14	549	241	75	86	467	695
Sattur Sub-District, Virudhunagar District																	
3	1	Sevalpatti	**Rural**	1474	1159	59	23	178	229	16	42	1221	865	19	50	945	1159
4	2	Kuganparai	**Rural**	433	412	165	150	61	107	24	21	183	134	14	20	194	217
Sankarankoil Sub-District,Tirunelveli District																	
5	1	Chattrappatti	**Rural**	436	410	11	3	359	384	0	0	66	23	0	0	263	311
6	2	Varaganur	**Rural**	802	768	204	197	367	451	11	9	220	111	3	5	463	533
Sankarankoil Sub-District,Tirunelveli District																	
7	1	Thiruvenkadam (TP)	**Urban**	2290	1407	244	172	471	576	11	32	1564	627	176	310	1678	2476
		total (B)		**6083**	**4573**	**721**	**566**	**1489**	**1888**	**70**	**118**	**3803**	**2001**	**287**	**471**	**4010**	**5391**
5-10 km,Rajapalayam Sub-District, Virudhunagar District																	
8	1	Gopalapuram	**Rural**	271	99	35	14	11	9	9	8	216	68	186	250	251	404
9	2	Vadagarai	**Rural**	1006	704	214	91	304	366	14	20	474	227	17	22	697	1008
Sivakasi Sub-District, Virudhunagar District																	
10	1	Edirkottai	**Rural**	1178	836	70	34	44	37	11	5	1053	760	131	182	820	1182
11	2	Kongankulam	**Rural**	320	271	11	7	197	222	1	0	111	42	3	1	184	271
12	3	Alangulam (Part)	**Rural**	547	340	21	6	42	58	9	14	475	262	9	9	448	571
13	4	Kundayiruppu	**Rural**	1707	1406	141	87	344	472	26	19	1196	828	220	251	1438	1790
14	5	Kangaraseval	**Rural**	478	413	52	38	114	139	3	5	309	231	6	22	306	402
15	6	Vembakottai	**Rural**	1251	795	50	10	133	87	9	10	1059	688	88	219	886	1239
16	7	Surarpatti	**Rural**	274	254	4	7	34	22	0	0	236	225	185	195	292	323
17	8	Lakshmipuram	**Rural**	1570	1198	128	123	507	607	21	26	914	442	119	61	1082	1580
Sattur Sub-District, Virudhunagar District																	
18	1	Sankarapandiyapuram	**Rural**	961	797	123	89	227	200	4	3	607	505	14	24	605	799
19	2	Thlukkankurichchi	**Rural**	669	594	8	5	76	44	9	5	576	540	49	86	398	498
20	3	Sippipparai	**Rural**	471	352	94	111	229	183	1	2	147	56	200	195	444	637
Sankarankoil Sub-District,Tirunelveli District																	
21	1	Kalingappatti	**Rural**	1751	1297	165	79	1078	1037	24	18	484	163	164	162	1327	1836
22	2	Naduvappatti	**Rural**	324	325	56	56	261	258	1	0	6	11	1	2	167	179
23	3	Maipparai	**Rural**	565	564	77	56	395	464	1	4	92	40	1	0	319	393
24	4	Sangupatti	**Rural**	473	351	15	10	174	204	8	5	276	132	236	219	513	626
25	5	Vellakulam	**Rural**	1142	1058	110	95	687	727	25	25	320	211	34	62	727	923
26	6	A.Karisalkulam	**Rural**	987	915	95	60	738	782	7	6	147	67	26	97	621	748
27	7	Kulasekarapperi	**Rural**	196	193	16	1	151	27	0	144	29	21	6	6	125	119
28	8	Kurunjakulam	**Rural**	402	384	127	46	157	272	2	4	116	62	12	40	261	326

29	9	Sundaresapuram	**Rural**	100	84	45	33	40	47	0	0	15	4	0	1	54	84
30	10	Kulakkattakurichi	**Rural**	256	261	50	24	153	194	1	0	52	43	1	3	161	172
Kovilpatti Sub-District,Thoothukkudi District																	
31	1	Sundaresapuram	**Rural**	415	310	195	158	142	137	0	0	78	15	1	3	197	253
32	2	Kuruvinatham	**Rural**	416	383	182	35	157	311	0	1	77	36	90	42	320	389
33	3	Mukkuttumalai	**Rural**	233	218	28	26	176	183	0	0	29	9	13	20	195	217
34	4	Lakshmiammalpuram	**Rural**	343	313	21	16	289	270	1	0	32	27	4	6	198	251
35	5	Nakkalamuthanpatti	**Rural**	364	331	33	22	263	286	0	1	68	22	10	15	238	257
36	6	Vadakkuppatti	**Rural**	494	410	138	96	322	292	0	0	34	22	0	3	274	358
Sivakasi Sub-District, Virudhunagar District																	
37	1	Alangulam (CT)	**Urban**	1350	618	98	11	191	232	61	24	1000	351	103	112	1022	1725
		total (C)		**20514**	**16074**	**2402**	**1446**	**7636**	**8169**	**248**	**349**	**10228**	**6110**	**1929**	**2310**	**14570**	**19560**
		Grand Total (A+B+C)		**27722**	**21744**	**3208**	**2111**	**9432**	**10556**	**346**	**486**	**14736**	**8591**	**2270**	**2887**	**19536**	**26207**

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

Annexure- 6

EDUCATIONAL FACILITIES IN THE BUFFER ZONE

Sl.No	No. of Villages	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,Sivakasi Sub-District, Virudhunagar District																
1	1	Appanayakkanpatti	**1**	2	0	0	0	0	0	0	0	0	0	0	0	0
		total (A)		**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2-5 km,Sivakasi Sub-District, Virudhunagar District																
2	1	Kilanmarinadu	**1**	2	1	0	0	0	0	0	0	0	0	0	1	0
Sattur Sub-District, Virudhunagar District																
3	1	Sevalpatti	**1**	5	2	1	1	1	0	0	0	0	0	0	2	0
4	2	Kuganparai	**1**	1	1	1	0	0	0	0	0	0	0	0	1	0
Sankarankoil Sub-District,Tirunelveli District																
5	1	Chattrappatti	**1**	2	3	1	0	0	0	0	0	0	0	0	1	0
6	2	Varaganur	**1**	3	1	1	0	0	0	0	0	0	0	0	1	0
		total (B)		**13**	**8**	**4**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**
5-10 km,Rajapalayam Sub-District, Virudhunagar District																
7	1	Gopalapuram	**1**	1	2	1	0	0	0	0	0	0	0	0	2	0
8	2	Vadagarai		3	2	1	1	0	0	0	0	0	0	0	3	0
Sivakasi Sub-District, Virudhunagar District																
9	1	Edirkottai	**1**	2	2	0	0	0	0	0	0	0	0	0	2	0
10	2	Kongankulam	**1**	1	0	0	0	0	0	0	0	0	0	0	0	0
11	3	Alangulam (Part)	**1**	5	3	3	2	2	0	0	0	0	0	0	3	0
12	4	Kundayiruppu	**1**	3	3	1	0	0	0	0	0	0	0	0	3	0
13	5	Kangaraseval	**1**	2	1	1	0	0	0	0	0	0	0	0	1	0
14	6	Vembakottai	**1**	4	5	1	1	1	0	0	0	0	0	0	5	1
15	7	Surarpatti	**1**	2	3	1	0	0	0	0	0	0	0	0	3	0
16	8	Lakshmipuram	**1**	4	4	0	0	0	0	0	0	0	0	0	4	0
Sattur Sub-District, Virudhunagar District																
17	1	Sankarapandiyapuram	**1**	3	4	1	1	1	0	0	0	0	0	0	4	0
18	2	Thlukkankurichchi	**1**	1	2	1	0	0	0	0	0	0	0	0	2	0
19	3	Sippipparai	**1**	1	2	1	1	1	0	0	0	0	0	0	3	0
Sankarankoil Sub-District,Tirunelveli District																
20	1	Kalingappatti	**1**	2	4	1	1	1	0	0	0	0	0	0	1	0
21	2	Naduvappatti	**1**	1	2	0	0	0	0	0	0	0	0	0	1	0
22	3	Maipparai	**1**	1	1	1	0	0	0	0	0	0	0	0	1	0
23	4	Sangupatti	**1**	2	0	0	0	0	0	0	0	0	0	0	0	0
24	5	Vellakulam	**1**	4	4	3	0	0	0	0	0	0	0	0	1	0
25	6	A.Karisalkulam	**1**	2	3	1	1	0	0	0	0	0	0	0	1	0
26	7	Kulasekarapperi	**1**	1	1	1	0	0	0	0	0	0	0	0	1	0
27	8	Kurunjakulam	**1**	2	1	1	0	0	0	0	0	0	0	0	1	0
28	9	Sundaresapuram	**1**	1	1	0	0	0	0	0	0	0	0	0	1	0
29	10	Kulakkattakurichi	**1**	1	0	0	0	0	0	0	0	0	0	0	1	0
Kovilpatti Sub-District,Thoothukkudi District																
30	1	Sundaresapuram	**1**	1	1	0	0	0	0	0	0	0	0	0	1	0
31	2	Kuruvinatham	**1**	2	1	0	0	0	0	0	0	0	0	0	1	0
32	3	Mukkuttumalai	**1**	2	2	0	0	0	0	0	0	0	0	0	1	0

33	4	Lakshmiammalpuram	**1**	2	1	0	0	0	0	0	0	0	0	0	1	0
34	5	Nakkalamuthanpatti	**1**	1	1	0	0	0	0	0	0	0	0	0	1	0
35	6	Vadakkuppatti	**1**	1	1	1	0	0	0	0	0	0	0	0	1	0
		total (C)		**58**	**57**	**21**	**8**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**50**	**1**
		Grand Total (A+B+C)		**73**	**65**	**25**	**9**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**56**	**1**

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

Annexure- 7

MEDICAL FACILITIES IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Medical Facilities (A(1)/NA(2))	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Heallth Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	TB Clinic (Numbers)	Hospital Allopathic (Numbers)	Hospiltal Alternative Medicine (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Mobile Health Clinic (Numbers)	Family Welfare Centre (Numbers)
0-2 km,Sivakasi Sub-District, Virudhunagar District														
1	1	Appanayakkanpatti	**1**	0	0	1	0	0	0	0	0	0	0	0
		total (A)		**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2-5 km,Sivakasi Sub-District, Virudhunagar District														
2	1	Kilanmarinadu	**1**	0	0	1	0	0	0	0	0	0	0	0
Sattur Sub-District, Virudhunagar District														
3	1	Sevalpatti	**1**	0	0	1	0	0	0	0	0	0	0	0
4	2	Kuganparai		0	0	0	0	0	0	0	0	0	0	0
Sankarankoil Sub-District,Tirunelveli District														
5	1	Chattrappatti	**1**	0	0	1	0	0	0	0	0	0	0	0
6	2	Varaganur	**1**	0	0	1	0	0	0	0	0	0	0	0
		total (B)		**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5-10 km,Rajapalayam Sub-District, Virudhunagar District														
7	1	Gopalapuram	**2**	0	0	0	0	0	0	0	0	0	0	0
8	2	Vadagarai	**1**	0	0	1	1	0	0	0	0	0	0	0
Sivakasi Sub-District, Virudhunagar District														
9	1	Edirkottai	**1**	0	0	1	0	0	0	0	0	0	0	0
10	2	Kongankulam	**1**	0	0	1	0	0	0	0	0	0	0	0
11	3	Alangulam (Part)	**1**	1	1	1	1	1	0	0	1	1	0	1
12	4	Kundayiruppu	**1**	0	0	3	0	0	0	0	0	0	0	0
13	5	Kangaraseval	**2**	0	0	0	0	0	0	0	0	0	0	0
14	6	Vembakottai	**1**	0	0	1	1	0	0	0	0	1	0	0
15	7	Surarpatti	**2**	0	0	0	0	0	0	0	0	0	0	0
16	8	Lakshmipuram	**1**	0	0	1	0	0	0	0	0	0	0	0
Sattur Sub-District, Virudhunagar District														
17	1	Sankarapandiyapuram	**1**	0	0	1	0	0	0	0	0	0	0	0
18	2	Thlukkankurichchi	**2**	0	0	0	0	0	0	0	0	0	0	0
19	3	Sippipparai	**1**	0	0	1	0	0	0	0	0	0	0	0
Sankarankoil Sub-District,Tirunelveli District														
20	1	Kalingappatti	**1**	0	1	1	1	1	0	0	1	1	0	1
21	2	Naduvappatti	**2**	0	0	0	0	0	0	0	0	0	0	0
22	3	Maipparai	**1**	0	0	1	0	0	0	0	0	0	0	0
23	4	Sangupatti	**2**	0	0	0	0	0	0	0	0	0	0	0
24	5	Vellakulam	**1**	0	0	1	0	0	0	0	0	0	0	0
25	6	A.Karisalkulam	**1**	0	0	1	0	0	0	0	0	1	0	0
26	7	Kulasekarapperi	**2**	0	0	0	0	0	0	0	0	0	0	0
27	8	Kurunjakulam	**1**	0	0	1	0	0	0	0	0	0	0	0
28	9	Sundaresapuram	**2**	0	0	0	0	0	0	0	0	0	0	0

29	10	Kulakkattakurichi	**2**	0	0	0	0	0	0	0	0	0	0	0	0
Kovilpatti Sub-District,Thoothukkudi District															
30	1	Sundaresapuram	**2**	0	0	0	0	0	0	0	0	0	0	0	0
31	2	Kuruvinatham	**2**	0	0	0	0	0	0	0	0	0	0	0	0
32	3	Mukkuttumalai	**2**	0	0	0	0	0	0	0	0	0	0	0	0
33	4	Lakshmiammalpuram	**2**	0	0	0	0	0	0	0	0	0	0	0	0
34	5	Nakkalamuthanpatti	**2**	0	0	0	0	0	0	0	0	0	0	0	0
35	6	Vadakkuppatti	**2**	0	0	0	0	0	0	0	0	0	0	0	0
		total (C)		**1**	**2**	**16**	**4**	**2**	**0**	**0**	**2**	**4**	**0**	**2**
		Grand Total (A+B+C)		**1**	**2**	**21**	**4**	**2**	**0**	**0**	**2**	**4**	**0**	**2**

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

Note : **A: Available, NA- Not Available**

Annexure- 8

INFRASTRUCTURAL FACILITIES IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Tap Water-Treated (Status A(1)/NA(2))	Covered Well (Status A(1)/NA(2))	Hand Pump (Status A(1)/NA(2))	Tube Wells/Borehole (Status A(1)/NA(2))	Spring (Status A(1)/NA(2))	River/Canal (Status A(1)/NA(2))	Tank/Pond/Lake (Status A(1)/NA(2))	Post Office (Status A(1)/NA(2))	Sub Post Office (Status A(1)/NA(2))	Post And Telegraph Office (Status A(1)/NA(2))	Telephone (landlines) (Status A(1)/NA(2))	Mobile Phone Coverage (Status A(1)/NA(2))	Public Bus Service (Status A(1)/NA(2))	Railway Station (Status A(1)/NA(2))	Commercial Bank (Status A(1)/NA(2))	Cooperative Bank (Status A(1)/NA(2))	Agricultural Credit Societies (Status A(1)/NA(2))
0-2 km,Sivakasi Sub-District, Virudhunagar District																			
1	1	Appanayakkanpatti	2	2	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
2-5 km,Sivakasi Sub-District, Virudhunagar District																			
2	1	Kilanmarinadu	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	1
Sattur Sub-District, Virudhunagar District																			
3	1	Sevalpatti	1	2	1	1	2	2	2	1	1	1	1	1	1	2	2	1	1
4	2	Kuganparai	2	2	1	1	2	2	2	2	1	2	1	1	1	2	2	1	1
Sankarankoil Sub-District,Tirunelveli District																			
5	1	Chattrappatti	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
6	2	Varaganur	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
5-10 km,Rajapalayam Sub-District, Virudhunagar District																			
7	1	Gopalapuram	1	2	2	2	2	2	2	2	1	2	1	1	1	2	1	2	2
8	2	Vadagarai	2	2	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
Sivakasi Sub-District, Virudhunagar District																			
9	1	Edirkottai	1	1	2	2	2	2	2	2	1	2	1	1	1	2	2	1	1
10	2	Kongankulam	1	2	1	1	2	1	2	2	2	2	1	1	1	2	2	2	1
11	3	Alangulam (Part)	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	1	1
12	4	Kundayiruppu	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	1
13	5	Kangaraseval	1	2	1	1	1	2	2	2	1	2	1	1	1	2	2	2	2
14	6	Vembakottai	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	2	2
15	7	Surarpatti	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
16	8	Lakshmipuram	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1
Sattur Sub-District, Virudhunagar District																			
17	1	Sankarapandiyapuram	1	2	2	1	2	2	1	2	1	2	1	1	1	2	2	1	2
18	2	Thlukkankurichchi	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	1	1
19	3	Sippipparai	2	2	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1
Sankarankoil Sub-District,Tirunelveli District																			
20	1	Kalingappatti	1	1	1	1	2	2	2	2	1	2	1	1	2	2	1	2	1
21	2	Naduvappatti	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	1	1
22	3	Maipparai	1	2	1	2	2	2	2	2	1	2	1	1	1	2	2	2	2
23	4	Sangupatti	1	1	1	1	2	2	2	2	2	2	1	1	2	2	2	2	2
24	5	Vellakulam	1	1	2	2	2	2	2	2	1	2	1	1	1	2	2	2	2
25	6	A.Karisalkulam	1	2	1	2	2	2	2	2	1	2	1	1	1	2	2	2	2
26	7	Kulasekarapperi	1	2	2	2	2	2	2	2	1	2	1	1	1	2	2	2	2
27	8	Kurunjakulam	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
28	9	Sundaresapuram	1	2	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2
29	10	Kulakkattakurichi	1	2	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2

Kovilpatti Sub-District,Thoothukkudi District																			
30	1	Sundaresapuram	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
31	2	Kuruvinatham	2	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
32	3	Mukkuttumalai	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
33	4	Lakshmiammalpuram	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
34	5	Nakkalamuthanpatti	1	1	1	1	2	2	2	2	2	2	1	1	1	2	2	1	1
35	6	Vadakkuppatti	1	2	2	2	2	2	1	2	2	2	1	1	1	2	2	2	2

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

Note : **A: Available, NA- Not Available, A(1), NA(2)**

CREATIVE ENGINEERS & CONSULTANTS

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

AMBIENT AIR QUALITY

Project	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Name of the Location	:	**Near Core Zone**
Station Code	:	**A1**

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	06.12.2021	75.1	35.4	8.8	12.4
2	07.12.2021	70.2	33.3	7.9	11.1
3	17.12.2021	63.8	30.2	6.3	9.5
4	18.12.2021	72.9	34.4	8.4	11.9
5	20.12.2021	59.6	28.2	5.3	8.5
6	21.12.2021	65.2	30.8	6.7	9.9
7	31.12.2021	62.4	29.5	5.9	9.1
8	01.01.2022	67.3	31.8	7.3	10.5
9	03.01.2022	60.3	28.5	5.5	8.7
10	04.01.2022	65.9	31.2	6.9	10.1
11	14.01.2022	64.5	30.4	6.5	9.7
12	15.01.2022	73.6	34.7	8.5	12.0
13	17.01.2022	76.3	36.6	9.1	12.7
14	18.01.2022	70.8	33.4	8.1	11.3
15	28.01.2022	68.7	32.5	7.5	10.7
16	29.01.2022	73.8	34.8	8.6	12.1
17	31.01.2022	74.4	35.2	8.7	12.3
18	01.02.2022	69.4	32.8	7.7	10.9
19	11.02.2022	75.7	35.6	8.9	12.5
20	12.02.2022	71.5	33.7	8.2	11.5
21	14.02.2022	63.2	29.8	6.1	9.3
22	15.02.2022	72.3	34.1	8.3	11.7
23	25.02.2022	61.8	29.3	5.7	8.9
24	26.02.2022	66.6	31.4	7.1	10.3
	MIN	**59.6**	**28.2**	**5.3**	**8.5**
	AVE	**68.6**	**32.4**	**7.4**	**10.7**
	MAX	**76.3**	**36.6**	**9.1**	**12.7**

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

Prepared by

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

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

AMBIENT AIR QUALITY

Project	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Name of the Location	:	**Appanayakkanpatti Village**
Station Code	:	**A2**

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	06.12.2021	49.2	22.9	5.8	8.9
2	07.12.2021	45.1	21.1	5.1	8.2
3	17.12.2021	55.2	25.7	6.7	9.9
4	18.12.2021	50.4	23.4	6.0	9.2
5	20.12.2021	54.6	25.4	6.6	9.8
6	21.12.2021	46.8	21.8	5.4	8.5
7	31.12.2021	43.8	20.4	4.9	8.1
8	01.01.2022	47.4	22.1	5.5	8.6
9	03.01.2022	53.4	24.8	6.5	9.7
10	04.01.2022	44.4	20.6	5.0	8.1
11	14.01.2022	43.2	20.1	4.8	7.9
12	15.01.2022	52.2	24.3	6.3	9.5
13	17.01.2022	41.4	19.3	4.5	7.6
14	18.01.2022	47.9	22.3	5.6	8.7
15	28.01.2022	51.2	23.8	6.1	9.3
16	29.01.2022	52.8	24.6	6.4	9.6
17	31.01.2022	46.2	21.5	5.3	8.4
18	01.02.2022	51.6	24.0	6.2	9.4
19	11.02.2022	55.6	25.9	6.8	10.1
20	12.02.2022	49.8	23.2	5.9	9.1
21	14.02.2022	42.6	19.8	4.7	7.8
22	15.02.2022	45.6	21.2	5.2	8.3
23	25.02.2022	42.1	19.6	4.6	7.7
24	26.02.2022	48.6	22.6	5.7	8.8
	MIN	**41.4**	**19.3**	**4.5**	**7.6**
	AVE	**48.4**	**22.5**	**5.7**	**8.8**
	MAX	**55.6**	**25.9**	**6.8**	**10.1**

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

Prepared by

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

AMBIENT AIR QUALITY

Project	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Name of the Location	:	**Akkaraipatti Village**
Station Code	:	**A3**

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	08.12.2021	68.3	31.8	8.2	11.8
2	09.12.2021	64.1	29.8	6.8	10.9
3	15.12.2021	57.6	26.8	5.9	9.2
4	16.12.2021	60.8	28.3	6.4	10.1
5	22.12.2021	52.8	24.6	5.3	8.4
6	23.12.2021	56.8	26.4	5.8	8.9
7	29.12.2021	62.4	29.2	6.6	10.4
8	30.12.2021	58.4	27.2	6.1	9.5
9	05.01.2022	51.2	23.8	5.1	8.2
10	06.01.2022	59.2	27.5	6.2	9.6
11	12.01.2022	69.6	32.4	8.6	12.1
12	13.01.2022	64.8	30.2	6.9	11.2
13	19.01.2022	60.3	27.9	6.3	9.8
14	20.01.2022	66.4	30.9	7.2	11.4
15	26.01.2022	54.4	25.3	5.5	8.6
16	27.01.2022	61.6	28.6	6.5	10.2
17	02.02.2022	53.6	24.9	5.4	8.5
18	03.02.2022	55.2	25.7	5.6	8.7
19	09.02.2022	70.2	32.6	8.8	12.3
20	10.02.2022	65.6	30.5	7.1	11.2
21	16.02.2022	52.1	24.2	5.3	8.4
22	17.02.2022	56.2	26.1	5.7	8.8
23	23.02.2022	67.2	31.2	7.5	11.6
24	24.02.2022	63.2	29.4	6.7	10.5
	MIN	**51.2**	**23.8**	**5.1**	**8.2**
	AVE	**60.5**	**28.1**	**6.5**	**10.0**
	MAX	**70.2**	**32.6**	**8.8**	**12.3**

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

Prepared by

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

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

AMBIENT AIR QUALITY

Project	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Name of the Location	:	**Kundampatti Village**
Station Code	:	**A4**

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	08.12.2021	61.6	29.6	7.1	9.9
2	09.12.2021	58.2	27.9	6.5	9.4
3	15.12.2021	51.8	24.9	5.5	8.4
4	16.12.2021	53.2	25.5	5.7	8.6
5	22.12.2021	47.6	22.8	4.8	7.7
6	23.12.2021	55.3	26.5	6.1	8.9
7	29.12.2021	60.9	29.2	6.9	9.8
8	30.12.2021	53.9	25.9	5.8	8.7
9	05.01.2022	49.1	23.6	5.1	7.9
10	06.01.2022	54.6	26.2	5.9	8.8
11	12.01.2022	64.4	30.9	7.5	10.8
12	13.01.2022	60.2	28.9	6.8	9.7
13	19.01.2022	49.7	23.9	5.2	8.1
14	20.01.2022	56.4	27.1	6.2	9.1
15	26.01.2022	48.3	23.2	4.9	7.8
16	27.01.2022	52.5	25.2	5.6	8.5
17	02.02.2022	62.3	29.9	7.2	10.2
18	03.02.2022	58.8	28.2	6.6	9.5
19	09.02.2022	50.4	24.2	5.3	8.2
20	10.02.2022	56.7	27.2	6.3	9.2
21	16.02.2022	51.2	24.6	5.4	8.3
22	17.02.2022	57.5	27.6	6.4	9.3
23	23.02.2022	63.7	30.6	7.4	10.6
24	24.02.2022	59.5	28.6	6.7	9.6
	MIN	**47.6**	**22.8**	**4.8**	**7.7**
	AVE	**55.7**	**26.8**	**6.1**	**9.0**
	MAX	**64.4**	**30.9**	**7.5**	**10.8**

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

Prepared by

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

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

AMBIENT AIR QUALITY

Project	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Name of the Location	:	**Ammiyarpatti Village**
Station Code	:	**A5**

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	10.12.2021	49.7	23.6	5.8	8.3
2	11.12.2021	53.9	25.9	6.6	9.1
3	13.12.2021	57.6	28.1	7.2	10.6
4	14.12.2021	53.3	25.7	6.5	8.9
5	24.12.2021	44.9	21.3	4.9	7.4
6	25.12.2021	47.3	22.6	5.4	7.8
7	27.12.2021	55.2	26.5	6.9	9.3
8	28.12.2021	46.1	21.9	5.2	7.6
9	07.01.2022	43.3	20.7	4.6	7.1
10	08.01.2022	47.9	22.9	5.5	7.9
11	10.01.2022	43.7	20.7	4.6	7.2
12	11.01.2022	49.1	23.3	5.7	8.2
13	21.01.2022	45.5	21.6	5.1	7.5
14	22.01.2022	50.3	23.9	5.9	8.4
15	24.01.2022	48.6	23.1	5.6	8.1
16	25.01.2022	52.7	25.3	6.4	8.8
17	04.02.2022	44.3	21.1	4.8	7.3
18	05.02.2022	50.9	24.2	6.3	8.5
19	07.02.2022	55.7	26.7	6.9	9.4
20	08.02.2022	51.5	24.5	6.2	8.6
21	18.02.2022	46.7	22.3	5.3	7.7
22	19.02.2022	54.5	26.2	6.7	9.2
23	21.02.2022	56.3	27.4	7.2	10.2
24	22.02.2022	52.1	24.7	6.3	8.7
	MIN	**43.3**	**20.7**	**4.6**	**7.1**
	AVE	**50.0**	**23.9**	**5.9**	**8.4**
	MAX	**57.6**	**28.1**	**7.2**	**10.6**

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

Prepared by

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

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

AMBIENT AIR QUALITY

Project	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Name of the Location	:	**Avudaiyarpuram Village**
Station Code	:	**A6**

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	10.12.2021	50.1	23.1	5.8	9.1
2	11.12.2021	52.9	24.3	6.4	9.6
3	13.12.2021	44.2	20.3	4.2	7.4
4	14.12.2021	46.1	21.2	4.7	7.9
5	24.12.2021	53.2	24.5	6.7	9.8
6	25.12.2021	49.7	22.9	5.7	8.9
7	27.12.2021	44.5	20.5	4.3	7.5
8	28.12.2021	47.7	21.9	5.2	8.4
9	07.01.2022	50.9	23.4	6.1	9.3
10	08.01.2022	45.7	21.1	4.6	7.8
11	10.01.2022	43.7	20.1	4.1	7.3
12	11.01.2022	47.3	21.8	5.1	8.3
13	21.01.2022	51.7	23.8	6.2	9.4
14	22.01.2022	48.9	22.5	5.5	8.7
15	24.01.2022	44.9	20.7	4.4	7.6
16	25.01.2022	48.5	22.3	5.4	8.6
17	04.02.2022	54.1	24.9	6.9	9.9
18	05.02.2022	50.5	23.2	5.9	9.2
19	07.02.2022	46.5	21.4	4.8	8.1
20	08.02.2022	48.1	22.1	5.3	8.5
21	18.02.2022	45.3	20.8	4.5	7.7
22	19.02.2022	46.9	21.6	4.9	8.2
23	21.02.2022	52.5	24.2	6.3	9.5
24	22.02.2022	49.3	22.7	5.6	8.8
	MIN	**43.7**	**20.1**	**4.1**	**7.3**
	AVE	**48.5**	**22.3**	**5.4**	**8.6**
	MAX	**54.1**	**24.9**	**6.9**	**9.9**

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

Prepared by

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

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

WATER QUALITY DATA

Project Name	:	**Rough Stone and Gravel Quarry of Thiru G.Kaniraj**
Location Name	:	

Location Code	Location Name
W1	Near Core Zone
W2	Appanayakanpatti Village
W3	Akkaraipatti Village
W4	KundamPatti Village
W5	Ammiyarpatti Village
W6	Avudaiyarpuram Village

S. No.	Parameter	Unit	W 1	W 2	W 3	W 4	W 5	W 6	*Permissible Limits
1	pH	-	**7.58**	**7.32**	**7.29**	**7.58**	**7.69**	**7.34**	**6.5-8.5**
2	Electrical Conductivity	µmhos/cm	**982.4**	**934.5**	**565.2**	**805.6**	**492.7**	**926.5**	**-**
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	**324**	**395**	**205**	**282**	**190**	**376**	**600**
6	Calcium Hardness $CaCO_3$	mg/L	**175**	**210**	**69.5**	**160**	**98.9**	**258**	**-**
7	Magnesium Hardness $CaCO_3$	mg/L	**149**	**185**	**135.5**	**122**	**91.1**	**118**	**-**
8	Calcium Ca	mg/L	**70.0**	**84.0**	**27.8**	**64.0**	**39.6**	**103**	**200**
9	Magnesium Mg	mg/L	**35.8**	**44.4**	**32.8**	**29.3**	**21.9**	**28.3**	**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

S. No.	Parameter	Unit	W 1	W 2	W 3	W 4	W 5	W 6	*Permissible Limits
10	Alkalinity $CaCO_3$	mg/L	289	310	298	301	282	277	600
11	Chloride Cl^-	mg/L	77.2	156	89.4	112	38.5	162	1000
12	Sulphate SO_4^{2}	mg/L	186	22.5	18.6	19.2	15.2	35.6	400
13	Iron Fe	mg/L	0.07	0.03	0.02	0.04	BDL(D.L - 0.01)	0.06	0.3
14	Nitrate NO_3	mg/L	5.45	1.78	1.32	1.57	BDL(D.L – 1.0)	1.35	45
15	Fluoride F	mg/L	0.53	0.46	0.21	0.35	BDL(D.L – 0.1)	0.38	1.5
16	Total Dissolved Solids	mg/L	590	562	340	485	296	558	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.

CREATIVE ENGINEERS & CONSULTANTS CHENNAI 600 059

Prepared by

Annexure- 11

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

Sl.No	No. of Villages	Name of village	Total Geographical Area (in Hectares)	Forest Area (in Hectares)	Area under Non-Agricultural Uses (in Hectares)	Barren & Un-cultivable 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,Sivakasi Sub-District, Virudhunagar District													
1	1	Appanayakkanpatti	1582.78	0	206.49	14.57	4.18	0	3.88	0	633.33	416.45	303.88
		total (A)	**1582.78**	**0**	**206.49**	**14.57**	**4.18**	**0**	**3.88**	**0**	**633.33**	**416.45**	**303.88**
2-5 km,Sivakasi Sub-District, Virudhunagar District													
2	1	Kilanmarinadu	2765	0	586.05	0	6	20	5.8	1764.53	76.3	277.7	28.62
Sattur Sub-District, Virudhunagar District													
3	1	Sevalpatti	1163.3	0	249.2	0	0	0	719	0	0	114.9	80.2
4	2	Kuganparai	430.5	0	107.4	0	0	0	213.4	0	0	98.9	10.8
Sankarankoil Sub-District,Tirunelveli District													
5	1	Chattrappatti	599.1	0	134.35	0	0	0	0	172.47	11.61	35.48	245.19
6	2	Varaganur	1402.4	0	102.92	0.74	0	0	0	439.68	0	830.37	28.69
		total (B)	**6360.3**	**0**	**1179.92**	**0.74**	**6**	**20**	**938.2**	**2376.68**	**87.91**	**1357.35**	**393.5**
5-10 km,Rajapalayam Sub-District, Virudhunagar District													
7	1	Gopalapuram	1088.78	0	57.46	0	0	265.35	0.94	262.91	190.15	163.72	148.25
8	2	Vadagarai	929.81	0	246.54	0	0	0	0.06	275.33	139.89	28.14	239.85
Sivakasi Sub-District, Virudhunagar District													
9	1	Edirkottai	1916	0	151.39	0	1.8	8.81	9.1	1459.59	68.06	188.48	28.77
10	2	Kongankulam	128.59	0	5.81	0	0	0.01	0.51	16.29	27.43	65.95	12.59
11	3	Alangulam (Part)	1491.2	0	102.14	20	3.4	38.05	5.21	944.23	157.45	196.89	23.83
12	4	Kundayiruppu	1464.07	0	225.42	0	3.09	15	2	768.64	205.16	205.59	39.17
13	5	Kangaraseval	943.49	0	66.79	0	0	0	2.13	0	711.22	85.1	78.25
14	6	Vembakottai	1481.07	0	466.31	0	0	0	0	0	862.39	92.87	59.5
15	7	Surarpatti	486.8	0	75.29	0	4.7	21.1	3.04	317.57	13.25	47.85	4
16	8	Lakshmipuram	2000.71	0	200.63	85.04	1.9	39.66	3.5	1229.55	61.7	314.18	64.55
Sattur Sub-District, Virudhunagar District													
17	1	Sankarapandiyapuram	1061.43	0	206.59	20.01	3	90.34	211	382.24	20.2	125.84	2.21

18	2	Thlukkankurichchi	1168.81	0	293.08	0	60	60.1	221.84	266.93	0	257.35	9.51
19	3	Sippipparai	898.1	0	65.7	0	0	0	262.2	0	0	550.9	19.3
Sankarankoil Sub-District,Tirunelveli District													
20	1	Kalingappatti	2766.17	0	249.47	0	0	14.72	145.2	10.25	989.89	1221.11	135.53
21	2	Subbiahpuram	22.72	0	0.62	0	0	0	0	0	0.07	22.03	0
22	3	Naduvappatti	789.29	0	72.93	0	0	0	0	68.32	45.01	599.78	3.25
23	4	Maipparai	1024.54	0	165.17	0	0	0	0	34.68	35.32	783.97	5.4
24	5	Sangupatti	792.05	0	40.58	0.53	0	0	0.53	97.52	4.73	617.62	30.54
25	6	Vellakulam	1524.27	0	179.05	2.25	0	29	187	441.19	50.33	480.96	154.49
26	7	A.Karisalkulam	1894.12	0	248.15	0.39	0	34	2.07	391.28	309.46	763.48	145.29
27	8	Kulasekarapperi	28.49	0	5.72	0	0	0	0	4.04	0.74	17.99	0
28	9	Kurunjakulam	753.22	0	88.28	0	0	0	0.3	104.48	40.6	486.29	33.27
29	10	Sundaresapuram	269.2	0	9.77	0	0	0	0	0	28.59	230.84	0
30	11	Kulakkattakurichi	444.87	0	31.71	0	0	0	0	10.6	42.54	357.56	2.46
Kovilpatti Sub-District,Thoothukkudi District													
31	1	Sundaresapuram	611.04	0	60.74	0	0	5.95	12.53	132.43	42.11	329.18	28.1
32	2	Kuruvinatham	681.36	0	67.36	22	0	5.11	24.85	83.48	11.43	411.22	55.91
33	3	Mukkuttumalai	811.62	0	137.11	20.97	0	0	0	244.19	0	402.31	7.04
34	4	Lakshmiammalpuram	343.01	0	35.26	0	0	0	0	257.12	4.03	44	2.6
35	5	Nakkalamuthanpatti	630.65	0	45.99	3	0	0	0.07	230.22	0	351.17	0.2
36	6	Vadakkuppatti	574.47	0	42.23	2.5	0	0	0	9.49	131.87	378.04	10.34
		total (C)	**29019.95**	**0**	**3643.29**	**176.69**	**77.89**	**627.2**	**1094.08**	**8042.57**	**4193.62**	**9820.41**	**1344.2**
		Grand Total (A+B+C)	**36963.03**	**0**	**5029.7**	**192**	**88.07**	**647.2**	**2036.16**	**10419.25**	**4914.86**	**11594.21**	**2041.58**

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

Annexure- 12

From

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

To

Thiru.G.Kaniraj,
S/o.Gurusamy,
60C, Indra Nagar,
Keela Thiruvengadam Village,
Sankarankovil Taluk,
Tenkasi District.

Roc. No: KV1/158/2021, Dated: 26.10.2021.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District – Vembakottai Taluk - Appaiyanaickenpatti Village – Patta Land – S.F.No: 202/1A2 – Extent 1.21.50 Hectares – Quarry lease application preferred by Thiru.G.Kaniraj for quarrying Rough Stone and Gravel - Details of quarries in 500 meter radius details- Regarding.

Ref: 1. Quarry lease application received from Thiru.G.Kaniraj, dated: 24.02.2021.

2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No. KV1/158/2021, Dated: 13.08.2021.

3. Thiru.G.Kaniraj letter, dated: 25.10.2021.

******

Thiru.G.Kaniraj has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an Extent of 1.21.50 Hectares of Patta Land in S.F.No: 202/1A2 of Appaiyanaickenpatti Village, Vembakottai Taluk for a period of 5 (Five) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959, with respect to the reference 3 cited, the following details are furnished.

The applicant Thiru.G.Kaniraj 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 quarry details within 500 meter radius from the proposed area for Environmental Clearance as detailed below :

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

S. No	Quarry detail	Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	**Existing Quarries:**			
1.	S.Ramraj	Appainaickenpatti, Vembakottai	196/1A, 197/1, 198/4, 206, 207/1 **(2.88.0)**	KV1/21616/2014, dated: 09.02.2018 26.02.2018 - 25.02.2023
2.	P.Shanmugaraj	Appainaickenpatti, Vembakottai	207/2A, 207/2B **(1.91.5)**	KV1/202/2018 dated:01.02.2019 25.02.2019 to 24.02.2024
3.	P.Shanmugaraj	Appainaickenpatti, Vembakottai	38/6A, 41/2, 42, 43/3, 43/6, 48 **(2.74.5)**	KV1/27945/2014, dated: 08.05.2017. 22.05.2017 – 21.05.2022.
4.	S.Subburaj	Appainaickenpatti, Vembakottai	44, 46/1 **(2.20.5)**	KV1/7441/2017, dated: 01.02.2019. 25.02.2019 – 24.02.2024.
5.	R.Gopalakrishnan	Appainaickenpatti, Vembakottai	199/6A **(1.08.0)**	KV1/5171/2013, dated: 10.05.2017 29.05.2017 to 28.05.2022
6.	G.Ramasamy	Appainaickenpatti, Vembakottai	211/1A1 211/1A2, 211/2A 211/2B, 213/1 213/2A **(0.93.0)**	KV1/24590/2015 dated: 01.02.2019 25.02.2019 to 24.02.2024
7.	G.Ravikumar	Appainaickenpatti, Vembakottai	276, 278, 279, 281, 283/1, 283/2, 283/3A, 283/3B, 283/4, 284/1, 284/2A, 284/2B **(3.85.5)**	KV1/938/2017 Dated: 13.12.2018 20.12.2018 to 19.12.2023
II	**Abandoned Quarry :**			
1.	G.Ramasamy	Appainaickenpatti, Vembakottai	201/4 201/5 etc **(3.24.5)**	KV1/11/2011 dated: 25.01.2011 25.01.2011 to 24.01.2016
2.	S.Ramraj	Appainaickenpatti, Vembakottai	207/3A, 207/3B 209/1A, 209/1B **(0.83.0)**	KV1/ 1316 / 2012 Dated: 03.10.2013 05/10/2013 to 04/10/2018
3.	R.Subbukrishnan,	Appainaickenpatti, Vembakottai	51/1A1, 51/1A2 **(0.52.0)**	KV1/1345/2012, dated: 03.10.2013 05.10.2013 – 04.10.2018.
5.	S.Sivaraman	Appainaickenpatti,	39/3	KV1/788/2018.

		Vembakottai	**(0.96.5)**	dated: 17.09.2018 28.09.2018 to 27.09.2020
III	**Present Proposed Quarry :**			
1.	G.Kaniraj	Appainaickenpatti, Vembakottai	202/1A2 **(1.21.5)**	KV1/158/2021
2.	R.Gayathiri	Appainaickenpatti, Vembakottai	39/1A, 39/1B, 39/2A, 49 **(2.30.2)**	KV1/572/2019
3.	S.Ragupathy	Appainaickenpatti, Vembakottai	196/2A, 196/3, 196/4, 197/2 **(1.86.5)**	KV1/390/2019
		TOTAL	**26.55.2**	

2) The dimension of the existing pit in the area applied for leases is given below.

Pit No	Length (Max) (M)	Width (Max) (M)	Depth (Max) (M)
Old Pit No.1	93	43	2.5
Old Pit No.2	93	43	3.5

3) Quarry lease was earlier granted to Thiru.G.Kaniraj, over an extent of 0.96.50 hectares of patta land in S.F.No.202/1A2 of Appanaickenpatti village for a period of 5 years vide proceedings of the district Collector, Virudhunagar in Rc.No.KV1/409/2009, dated: 21.04.2009. The lease period was from 25.04.2009 to 24.04.2014. The details of transport permits issued for Roughstone to the lessee from the area granted for quarry lease earlier are furnished as follows:-

Year	Quantity Permitted (in cbm)	Depth (in metre)
2009-2014	5937	2

4) The period of the earlier Quarry operations (Expired)

Sl. No.	Extent	SF. Nos.	Village & Taluk	Proceedings No. & date	Period
1.	0.96.5	202/1A2	Appainaickenpatti, Vembakottai	KV1/409/2009 Dated: 21.04.2009	25.04.2009 - 24.04.2014
2.	1.21.5	202/1A2	Appainaickenpatti, Vembakottai	KV1/33631/2013, dated: 16.09.2016	06.10.2016 - 05.10.2021

Environmental Clearance	Proceedings & Lease Period	Permitted Quantity as per Approved Mining Plan & EC		permit issued & transported Quantity		Depth (m)
		Rough Stone	Gravel	Rough Stone	Gravel	
SEIAA-TN/F.No.1799/EC/1(a)/922/2013, Dated: 25.11.2013.	KV1/30513/2013 Dated: 03.10.2013. From 09.01.2014 to 08.01.2019.	34833 Cu.m	12303 Cu.m	16782 Cu.m	1274.85 Cu.m	4 m

Assistant Director,
Geology and Mining,
Virudhunagar.

Copy to :
The Member Secretary,
State Level Environmental Impact
Assessment Authority,
Panagal Maligai,
No. 1 Jeenis Road,
Saidapet, Chennai-15.

MINE PLAN

MINING PLAN & ENVIRONMENT MANAGEMANT PLAN FOR ROUGH STONE, JELLY & 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 RENEWAL LEASE PERIOD FIVE YEARS

LOCATION OF THE AREA

EXTENT	:	**1.21.5 HECTARE**
S.F. No.	:	**202/1A2 (PATTA LAND)**
VILLAGE	:	**APPAIYANAICKANPATTI**
TALUK	:	**VEMBAKOTTAI**
PANCHAYATH UNION	:	**APPAIYANAICKANPATTI**
DISTRICT	:	**VIRUDHUNAGAR**
STATE	:	**TAMIL NADU**

APPLICANT

SRI. G. KANIRAJ, S/o. GURUSAMY,
NO. 60C, INDRA NAGAR,
THIRUVENKADAM VILLAGE,
SANKARANKOVILTALUK,
VIRUDHUNAGAR DISTRICT – 627 719.

PREPARED BY

M. DHARMALINGAM
REGISTRATION NO: RQP/MAS/260/2014/A
VALID UPTO: 13/11/2024.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **ROUGH STONE, JELLY AND GRAVEL** deposit over an Extent of 1-21.5 Hectares in S.F. No. 202/1A2 (Patta Land) in Appaiyanaickanpatti 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,
No.28, Polpettai,
Tuticorin - 628 002.
Mobile No. 99528 08328
RQP/MAS/260/2014/A
Valid Up to 13/11/2024

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: Thiruvenkadam

Date: .08.2021

Signature of the Applicant

G. Kaniraj

105

உதவி இயக்குநர் அலுவலகம்
விருதுநகர் மாவட்டம்
01 SEP 2021
பெறுதல்
சுரங்கத்துறை

DECLARATION OF THE APPLICANT

The Mine Plan In Respect of **ROUGH STONE, JELLY AND GRAVEL** deposit over an Extent of 1-21.5 Hectares in S.F. No. 202/1A2 (Patta Land) in Appaiyanaickanpatti 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: Thiruvenkadam

Date: .08.2021

Signature of the Applicant

G. Kaniraj

This Mining is approved based on guidelines/ instructions issued in the CGM, Letter No.3868/LC/2012 dated 19-11-2012 and incorporation of the particulars specified in the letter Roc.No...KV.I/158/2021..... Dated...01-09-2021.....of the Assistant 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

Assistant Director of Geology & Mining
Virudhunagar

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

Letter Roc. No. KV.I/158/21 Dated 01/09/21

106

Shri. M. DHARMALINGAM
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, Metalliferrous Mines Rules and Regulations, Miner 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, JELLY AND GRAVEL** deposit over an Extent of 1-21.5 Hectares in S.F. No. 202/1A2 (Patta Land) in Appaiyanaickanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu state.

THIRU. G. KANIRAJ,
S/o. SRI. GURUSAMY,
NO. 60C, INDRA NAGAR,
THIRUVENKADAM VILLAGE,
SANKARANKOVIL TALUK,
TENKASI DISTRICT – 627719.

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: .08.2021

M. DHARAMALINGAM

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

107

TABLE OF CONTENTS

LIST OF ANNEXURES

S.No	Description	Annexure No.
1.	GEOLOGICAL & MINEABLE RESERVES	I
2.	PRODUCTION SCHEDULE FOR 5 YEARS PERIOD	II
3.	Copy of RQP CERTIFICATE	III
4.	Copy of PRICISE AREA COMMUNICATION	IV
5.	A.D.. INSPECTION REPORT	V
6.	COPY OF THE ID PROOF OF THE PROPONENT	VI
7.	FMB SKETCH & VILLAGE MAP	VII
8.	FIELD PHOTOGRAPH ATTESTED BY VAO & VAO CERTIFICATE	VIII
9.	PATTA, 10 (1) CHITTA & "A" REGISTER OF THE CONCERNED SURVEY FIELD NUMBERS	IX
10.	LAND DOCUMENT COPY	X
11.	FIELD PHOTOGRAPH ATTESTED BY THE R.Q.P.	XI
12.	R.D.O., TASILDAR, R.I, V.A.O. CERTIFICATES & A1-NOTICE	XII
13.	AFFIDAVIT FOR MINING DUES AND INCOMETAX CERTIFICATES	XIII
14.	EXPLOSIVE LICENCE DOCUMENT AGREEMENT COPY & LICENCE COPIES	XIV
15.	PREVIOUS LEASE PROCEEDING ORDER COPY FOR FIVE YEARS – KV1/409/2009 DATED.28.04.2009	XV
16.	PREVIOUS LEASE PROCEEDING ORDER COPY FOR FIVE YEARS – KV1/33631/2013 DATED. 16.09.2016	XVI
17.	PREVIOUS ENVIRONMENT CLEARANCE FROM SEIAA- TAMILNADU Lr.No.SEIAA-TN/F.No.3260/EC/1(a)/2629/2015 dated: 05.01.2016.	XVII
18	PREVIOUS PERIOD TNPCB-AIR & WATER CONSENT ORDER COPIES	XVIII

LIST OF PLATES

S.No	Description	Plate No	Scale
1	Location Plan	I	1cm=12.5kms
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-1:1000, Ver-1:1000
6.	Land use cum year wise production plan & Section	V	Plan :-1:2000 section scale :- HOR-1:1000, Ver-1:1000
7.	Conceptual mining Plan & section	VI	Plan :-1:2000 section scale :- HOR-1:1000, Ver-1:1000
8.	Satilite Imaginery with E.M.P. Plan	VII	1:5000
9.	Village map showing Environmental features	VII-A	1:10000
10.	Progressive Mine Closure Plan	VIII	Plan :-1:2000 section scale :- HOR-1:1000, Ver-1:1000

MINING PLAN INCLUDING ENVIRONMENT MANAGEMENT PLAN FOR ROUGH STONE /JELLY / GRAVEL QUARRY

Over an Extent of 1.21.5 Hectares in S.F. No. 202/1A2 (Patta Land) in Appaiyanaikanpatti 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 to 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 and 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.

The applicant, Thiru. G. Kaniraj, S/o. Sri. Gurusamy, No.60C, Indra Nagar, Thiruvenkadam, Sankarankovil Taluk, Tenkasi District – 627 719 has an individual having good experience and skill on quarrying of Rough Stone, Jelly and Gravel. He has applied for Renewal grant of Quarry lease to the state government over an extent 1-21.5 Hectares in S.F. No. 202/1A2 (Patta Land) in Appaiyanaickanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

1. General Information

a)	Name of the applicant	:	THIRU. G. KANIRAJ
b)	Address of the Applicant	:	THIRU. G. KANIRAJ, S/o. SRI. GURUSAMY 60C, INDRA NAGAR, THIRUVENKADAM, SANKARANKOVIL TALUK, TENKASI DISTRICT. – 627719.
c)	Mobile No.	:	99420 17748
d)	Status of the applicant	:	Private Individual
e)	Mineral which the applicant Intends to mine	:	Rough Stone, Jelly and Gravel
f)	Precise area communication letter details received from the competent authority of Government	:	KV 1/158/2021-KANIMUM Dated : 13.08.2021
g)	Period of Permission / lease to be granted	:	05 Years.
h)	Name and address of the RQP /Authorised person preparing the Mining plan	:	M. Dharmalingam, No.28, Polpettai, Tuticorin – 628 002. Mobile No. 99528 08328 Registration No : RQP/MAS/260/2014/A

112

2. LOCATION

STATE	DISTRICT	PANCHAYATH UNION	TALUK	VILLAGE	S.F.NO	EXTENT (Hectares)
Tamil nadu	Virudhunagar	Appaiyanaikan patti	Vembakottai	Appaiyanaikan patti	202/1A2 (Patta Land)	1-21.5 Hect

b) Classification of the area : Patta Lands

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

d) Toposheet No : 58-G/11

Latitude : 9° 17' 44.4"N to 9° 17' 50.3"N

Longitude : 77° 41' 36.6"E to 77° 41' 43.0"E

e) Accessiblity of public road / Railway line, : The applied area can be easily accessible from mud road of 1.3Km distance northwest of Kudampatti which lies in 11Km from Vembakottai to Thiruvenkadam road as shown in the KEY MAP (Plate No.1A).. The nearest railway station is Sivakasi at a distance of 25km.

f) Previous Lease Details : K.V.1/409/2009, dated: 21.04.2009-5 years & K.V.1/33631/2013,dated:16.09.2016to05.10.2021-5years

g) Previous E.C. Details : F.No.3260/EC/1(a)/2629/2015 dated: 05.01.2016

113

Part-A

3. GEOLOGY AND MINEABLE RESERVES

3.1 Topography and general Geology

The area applied for mining lease is a gentle plain terrain and dry lands without any vegetation and the old pits are noted 93m length, 43m width and 6m depth. The Gravel weathered formation is having thickness of 2.5 meter.

The rocks in this area belonging to ARCHEAN group of rocks. Below the Gravel formation a hard Rough stone Charnockite is noticed. The rocks are Phaneric to medium grained nature. And in these rocks there are mineral constituents of BLUE QUARTS, MICRO CLINE FELDSPAR, HYPERSTHENE and flakes of BIOTITE MICA. The rocks are striking towards North west – South east direction dipping 80^0 Vertical towards South west direction. The strike length of the deposit is 123.5m with an average width of 46meter on southwest side and the strike length of the deposit is 109m with an average width of 78meter on northeast side.

3.2 DETAILS OF EXPLORATION

As noted in the nearby working quarries and wells in the radius of 500m, the weathered rock (gravel) occurs to a thickness of 2.5m. Below 2.5m Charnockite (Rough stone) is noticed.

3.3 ESTIMATION OF RESERVES.

Reserves have been calculated based on the cross section method. The strike length of the deposit is 123.5m with an average width of 46meter on southwest side and the strike length of the deposit is 109m with an average width of 78meter on northeast side.

Based on the above data geological reserves and mineable reserves has been calculated for a depth of 20 meter. The reserves have been computed for depth of 0 to 2.5meter in gravel and from 2.5 to 20meter 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	25460	234206
2	Mineable reserves	14978.75	87982.25
3	Bench locked & 7.5m boundary barrier reserves	10481.25	146223.75

114

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 mining lease a boundary barrier of 7.5 meters has been left in all direction and a safety distance of 10m left on cart track side.

During first year the mining operation will be commenced from the southwest side of the applied lease area to a strike length of 116m, width 31m. The gravel (weathered genesis) formation will be removed up to 2.5m, and below 2.5m depth one bench of 2.5m depth and two benches each 5m depth will be made to achieve the planned production quantity at PQ-AB section. During second year the quarry advancement will be made towards northeast area (PQ-CD section) for a strike length of 101.5m, width 63m. The gravel (weathered gneiss) formation will be removed up to 2.5m and Roughstone bench will be made below the gravel 5m bench to achieve the planned production quantity. During third year the quarry advancement will be made below the second year workings make 5m depth bench be made to achieve the planned production quantity.

During fourth year and fifth year the quarry advancement will be made below the working area of the third year workings to make 3 benches to be made up to a depth of 20m on the roughstone area. Each bench depth of 5m will be made to achieve the planned production quantity.

At the end of fifth year the mine will be having a depth of 20m with 3 benches in rough stone and 2.5m depth in gravel. During every year working the bench width will be maintained more than the height of the bench with a bench slope of 60^0 for safe reversal and working of machinery and movement of trucks.

During 5 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	11041.25	12478.50
II	3937.50	15986.25
III	-----	19875.00
IV	-----	19995.00
V	-----	19647.50
Total	**14978.75**	**87982.25**

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 4m to 6m 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 40 to 45 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.

15

DETAILS OF MACHINERIES TO BE USED IN QUARRY

SI. NO	NAME OF THE EQIPMENT	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 rehandling, 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 under

116meter Length, 31 meter Width, 15 meter Depth on south west side.

101.5meter Length, 63 meter Width, 20 meter Depth on northeast side

However during extraction of ROM bench will be 5m height with a slope of 60^0 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 20meter a total Roughstone of 87982.25m^3 & Gravel 14978.75m^3. Based on an average production of maximum quantity of 20,000 $m^3$to 21,000 m^3/year. The life of the mine will be 1,00,171/20,000 m^3= 5 years. The available reserve below 20m can be mined in the next quarry renewal period after 5 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 2.5meter is planned for excavation during the present five year working.

116

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 cub.m. Blasting parameter proposed to be adopted for shot holes shall be

Spacing of 0.9 m, burden 0.60m and depth1.5m
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 .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 consumption 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 69m^3 or 17loads / day of 10tonnes 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. Prince Explosives, 7/71, Nadu street, Elayirampammai, Virudhunagar District-626 201 who is having explosive licence bearing no: E/SC/TN/22/343 (E5998) received from chief controller of explosive, Chennai. The owner of the Firm made agreement with Sri. G. Kaniraj to make necessary safety practice to blast in his licence and supply of explosives will be made in Form22 as specified by Indian Explosives Act 1884. (Annexure- XI)

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 enquiry the ground water table in this area is ranging from **40 to 45m.** 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. There are also water courses on the Northwest side Devanathi in a distance of 90m. These nathi are seasonal only and mostly dry in all seasons. 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 west	725	12	Dry
2.	well	North west	575	13	Dry
3.	well	North east	620	14	Dry
4.	well	North east	475	12	Dry
5.	well	South east	925	14	Dry
6.	well	South	850	17	Dry
7.	well	West	575	15	Dry
8.	well	West	625	14	Dry
9.	well	West	650	15	Dry
10.	well	West	600	14	Dry
11.	Devanathi	North west	90	0.5	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	Kurinjivel	30 houses	3 km
2	South	Kundampatti	100 houses	1 km
3	East	Chakkammalpuram	40 houses	1.5km
4	West	Appaiyanaickanpatti	200 houses	3 km

Nearest infrastructures

Sl. No	Name of infrastructure	Name of village	Distance from area applied for M.L
1	Post office	Appaiyanaickenpatti	3 Km
2	Police station	Alangulam	10Km
3	Town	Thiruvengadam	5Km
4	DSP office	Sattur	30Km
5	Register office	Rajakularaman	20Km
6	Hospital	Vembakottai	10Km
7	School	Sevalpatti	4Km
8	Railway station	Sivakasi	25Km
9	Airport	Madurai	100km
10	Sea Port	Thoothukudi	70km

118

8. EMPLOYMENT POTENTIAL & WELFARE MEASURES

ORGANISATION CHART

Owner

↓

Permit Manager / Mine foreman/ Supervisor

↓

Driller 4 Nos

↓

Blaster 2 no

↓

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 Kallurani. 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.

SAFTEY 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 in Annexure.

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 40 to 45m.

The area will obtain rain fall during NE monsoon in summer the climate will be very hot and the temp will be up to 42^{0}C.

Present land use planning (break up along with green belt etc).-

S.No.	Land Use Category	At the end of life of mine
1.	Mining \Excavation	1-00.0 hectares
2.	Storage of Top Soil	0.00.0 hectares
3.	Sorting and Mineral Dressing Yard	0.00.0 hectares
4.	Infrastructure & Road	0.03.0 hectares
5.	Afforestation(Greenbelt& Plantation)	0-07.0 hectares
6.	Rain Water Storage	1-00.0 – (After closure of mine)
7.	Undisturbed Area	0.05.5 hectares
8.	Fencing	0.06.0 hectares
	TOTAL	1.21.5 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 20m 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.

120

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	Kurinjivel	30 houses	3 km
2	South	Kundampatti	100 houses	1 km
3	East	Chakkammalpuram	40 houses	1.5km
4	West	Appaiyanaickanpatti	200 houses	3 km

Basic human welfare Amenities such as Health centre, schools, communication facilities, and commercial centres etc., are available at Thiruvenkadam located at a distance of 5Km on the Southern side of the area.

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.

121

- Particulate Matter (PM_{10})
- Particulate Matter ($PM_{2.5}$)
- Sulphur Dioxide
- Oxides of Nitrogen
- Carbon Monoxide

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 instructed 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 19,000 $m^3$to 20,000 m^3/year is planned. Besides **four working Quarries** and No villages in the surrounding radius of 500 metres.

12

Details of quarries around 500m radius of proposed quarry

Quarries	Sl.no	Name	Village	s.f.no.	Extent (Ha)	Distance (m)
Existing	1.	G. Ravikumar	Appayanaickanpatti	276,278,etc.	3-85.5	195
	2.	S. Subburaj	Appayanaickanpatti	44,46/1	2-20.5	220
	3.	S. Ramraj	Appayanaickanpatti	196,197,etc	2-88.0	156
	4.	R.Gopalakrishna	Appayanaickanpatti	199/6A	1-08.0	78
Abandoned	5.	S.Arumugam	Appayanaickanpatti	207/2A,2B	Perior-2018	130
	6.	S.Ramraj	Appayanaickanpatti	196/1A,etc.,	Perior-2018	290
	7.	G.Ramasamy	Appayanaickanpatti	208/1,2,etc.	Perior-2019	310
	8.	Govt. pit	Appayanaickanpatti	50	Perior-2012	260
Present proposed	9.	G.Kaniraj	Appayanaickanpatti	202/1A2	1-21.5	Applied
	10.	S.Ragupathi	Appayanaickanpatti	196/2A,etc.,	1-30.3	320
	11.	Gayathiri	Appayanaickanpatti	39/1A,etc.,	2-30.2	340
		Total extent in Hectares			**14-84.0**	

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 20m 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 20m 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	15	3m x 3m	0-01.35	80%
II YEAR	Neem	15	3m x 3m	0-01.35	80%
III YEAR	Neem	15	3m x 3m	0-01.35	80%
IV YEAR	Neem	15	3m x 3m	0-01.35	80%
V YEAR	Neem	15	3m x 3m	0-01.35	80%
TOTAL		**75**		**0-07.0 Ha**	

123

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.

9.11Proposal for water management

	DETAILS	SOURCE	PROVISION QUANTITY/DAY
A	Drinking water	A bore well will be drilled near the office area for providing drinking water	1.000KLD
B	Dust Suppression-water sprinkling	Water tanker on hired basis	1.300 KLD
C	Green belt	From the water tanker and the bore well	0.600 KLD
D	Domestic	Water storage in tub near working area	0.300 KLD
		TOTAL	3.200KLD

9.12 Proposed financial estimate/ budget for (EMP) environment management :

A. FIXED ASSET COST:-

Sl. No	DETAILS	COST in RS.
i)	Land Cost (Renewal lease)	Own Patta land (renewal)
ii)	Labourers Shed	20,000 onetime expense
iii)	Fencing	40,000 onetime expense
iv)	First aid room and accessories	20,000 onetime expense
v)	Sanitary facility	20,000 onetime expense
	Total =	**Rs. 1,00,000**

B. OPERATIONAL COST:-

PRODUCTION COST / UNIT OF BOULDER PRODUCTION. (One Unit =2.83m^3)

Working cost for production of boulders (machineries Hired basis)

Seignior age fee per unit for transport permit to be paid to state government for rough stone is Rs. 167Per unit and gravel removal by purchasers JCB compo with Tipper and seignior age fee amount to be paid Rs.26/m^3 at the time of marketing will be paid by Purchaser only.

Machinery to be used

a) **Excavator** The excavators of 0.90cu.m. Bucket capacity and tippers of 10/20Ts capacity will be used. The quantity of Diesel consumption is based on the working hours of Excavators (Filling Factor and Loading Cycling), in the open cast quarry project Excavators are proposed to quarry.

124

Total Number of Excavator used for quarrying = 1No.
Total Excavator Running hours for the project
One Excavator will be excavate = 60Cu.m. / Hr.
FiveYearProject=Gravel + Roughstone=1,02,961cu.m/60cu.m=1,716Excavator Hours.
Average Diesel Consumption Tata Hitachi (Model EX-110-150) = 9Ltr/Hr
Diesel Price around = Rs.90 (At present scenario)
Hence 1716 Hours x 9Ltrs/Hr =**15,444Ltrs of HSD** will be utilized for the project.
The Hired Vehicle charges per hour inclusive of diesel around Rupees 1000/Hour
Total operational cost = 1716 Ex.Hours x Rs. 1000 = **Rs.17,16,000**

b) Compressor with Drilling machine

Total Number of Compressor with Drilling Machine used for quarrying = 1No.
Total Compressor with Drilling Machine Running hours for the project
One Compressor with Drilling Machine will be Drilling = 100Cu.m. / Hr.

Five year project Roughstone = 87982.25 cu.m/100cu.m.=880 Running Hours.
Average Diesel Consumption = 8Ltr/Hr
Diesel Price around = Rs.90 (At present scenario)
Hence 880 Hours x 8Ltrs/Hr =**7,040Ltrs of HSD** will be utilized for the project.
The Hired Vehicle charges per hour inclusive of diesel around Rupees 750/Hour
Total operational cost = 880 Hours x Rs. 750 = **Rs.6,60,000**

c) Explosives used

First Five Year project Explosives- Charging and Blasting used for Rs.700/100Cu.m.
Total drilling material for quarrying = Roughstone = 87982.25cu.m.
Total cost for first Five year Roughstone
= (87982.25cu.m/100cu.m) x Rs. 700 = **Rs.6,15,876**

Total operational cost = (a)+(b)+(c)

= Rs.1716000 + 660000+615876 = Rs.29,91,876

Total HSD required for the Project Life = (a)+(b)= 15444+7040 = 22,484 Ltrs

C. EMP COST:-

Budget Provision for the Entire quarrying period:

1.	Air quality sampling	Rs. 10,000
2.	Water quality sampling	Rs. 10,000
3.	Noise monitoring	Rs. 10,000
4.	Ground Vibration test	Rs. 10,000
5.	Drinking water facility	Rs. 20,000
6.	Sanitary arrangement	Rs. 15,000
7.	Safety Kids	Rs. 10,000
8.	Water sprinkling	Rs. 20,000
9.	Afforesation	Rs. 20,000
	Total	**Rs.1,25,000**

125

The total amount will be equally distributor for water supplying towards drinking water, domestic use, and water sprinkling for dust suppression and for afforestation programme.

A.	**Investment Cost**	**= Rs.**	**1,00,000**
B.	**Operational Cost**	**= Rs.**	**29,91,876**
C.	**Emp Cost**	**= Rs.**	**1,25,000**
	Total Project cost(A+B+C)	**= Rs.**	**32,16,876**

i) **CER Cost 2.0% of the project cost.**

The CER Cost to the nearby areas will be about Rs. **64,338** for the **5 year** project.

10. MINE CLOSURE PLAN

a. The mined out area will be suitably fenced to avoid inadvertent entry of men and animal to the quarry area.

b. After closure of mine the applicant will adhered the rules and regulations governed by state and central government

c. 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) Permission will be obtained from the District Mines Office to extract the Rough Stone from the Boundary barriers and for slopes.

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

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

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

PLACE: TUTICORIN

DATE: .08.2021

ASSISTANT DIRECTOR
GEOLOGY AND MINING
VIRUDHUNAGAR DISTRICT
VIRUDHUNAGAR

Signature of the RQP

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 15.11.2024)

126

ANNEXURE- I

GEOLOGICAL RESERVES

MINERAL	SECTION	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLIUME IN CUM	TOTAL VOLUME IN CUM
GRAVEL	P – Q & A –B	123.5	46	2.5	14202.5	
	P – Q & C –D	109.0	78	2.5	21255.0	
	DEDUCT EXT.PIT = 93M X 43M X 2.5M				-9997.5	25,460
ROUGH STONE	P – Q & A –B	123.5	46	17.5	99417.5	
	P – Q & C –D	109.0	78	17.5	148785.0	
	DEDUCT EXT.PIT = 93M X 43M X 3.5M				-13996.5	2,34,206
	TOTAL GEOLOGICAL RESERVES					**2,59,666 Cu.M.**

MINEABLE RESERVES

MINERAL	SECTION	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLIUME IN CUM	MINEABLE RESERVES IN CUM
GRAVEL	P – Q & A –B	I	116.0	31	2.5	8990.00	
	P – Q & C –D	I	101.5	63	2.5	15986.25	
	DEDUCT EXT.PIT = 93M X 43M X 2.5M					-9997.50	14,978.75
ROUGH STONE	P – Q & A –B	I	116	31	2.5	8990.00	
	P –Q & A –B	II	111	21	5.0	11655.00	
	P –Q & A - B	III	106	11	5.0	5830.00	
	P – Q & C –D	I	101.5	63	2.5	15986.25	
	P –Q & C –D	II	96.5	53	5.0	25572.50	
	P –Q & C - D	III	91.5	43	5.0	19672.50	
	P –Q & C –D	IV	86.5	33	5.0	14272.50	
	DEDUCT EXT.PIT = 93M X 43M X 3.5M					-13996.5	87,982.25
						TOTAL MINEABLE RESERVES	**1,02,961 Cu.M.**

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

ANNEXURE - II

PRODUCTION SCHEDULE FOR 5 YEARS PERIOD

YEAR	SECTION	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	VOLUME IN CUM		TOTAL PRODUCTION IN CUM
						GRAVEL	ROUGH STONE	
I	PQ-AB	I	116	31	2.5			
	PQ-CD	I	76.5	63	2.5			
	DEDUCT EXT.PIT- 93 x 43 x 2.5 = -9997.5					11041.25	----	
	PQ-AB	I	116	31	2.5			
	PQ-AB	II	111	21	5.0			
	PQ-AB	III	106	11	5.0			
	DEDUCT EXT.PIT- 93 x 43 x 3.5 = -13996.5					----	12478.50	**23,519.75**
II	PQ-CD	I	25	63	2.5	3937.50	----	
	PQ-CD	I	101.5	63	2.5	----	15986.25	**19,923.75**
III	PQ-CD	II	75	53	5.0	----	19875.00	**19,875.00**
IV	PQ-CD	II	21.5	53	5.0	----	5697.50	
	PQ-CD	III	66.5	43	5.0	----	14297.50	**19,995.00**
V	PQ-CD	III	25	43	5.0	----	5375.00	
	PQ-CD	IV	86.5	33	5.0	----	14272.50	**19,647.50**
TOTAL PRODUCTION						**14978.75**	**87982.25**	**1,02,961**

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

ANNEXURE - III

भारत सरकार / GOVERNMENT OF INDIA
खान मंत्रालय / MINISTRY OF MINES
भारतीय खान ब्यूरो / INDIAN BUREAU OF MINES

01 SEP 2021

अर्हता प्राप्त यक्ति के रुप 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 प्रमाण 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.

उनकीपंजीयनसंख्या 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 स्थिती में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।
This certificate will liable to be withdrawn / cancelled in the event of furnishing of wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai
दिनांक/ Date : 14.11.2014

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

क्षेत्रीय खाननियंत्रक / Regional Controller of Mines
भारतीय खानब्यूरो/ Indian Bureau of Mines
चेन्नई क्षेत्र / Chennai Region

129

ANNEXURE - IV

புவியியல் மற்றும் சுரங்கத்துறை

ந.க. எண்: கேவி1/158/2021-கனிமம், மாவட்ட ஆட்சியர் அலுவலகம், விருதுநகர்.

நாள்: .08.2021.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம்- வெம்பக்கோட்டை வட்டம் - அப்பையநாயக்கன்பட்டி கிராமம் பட்டா எண்.1783 புலஎண்கள்.202/1ஏ2 1.21.50 ஹெக்டேர் 5 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக்கோரியுள்ளது - சரியான பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

பார்வை:

1. திரு.கு.கனிராஜ் த/பெ.குருசாமி தென்காசி மாவட்டம் விண்ணப்பம் நாள்: 24.02.2021.
2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/158/2021, நாள்: 01.03.2021
3. சாத்தூர் வருவாய் கோட்டாட்சியர் கடிதஎண். ந.க.அ2/1574/2021 நாள்:21.06.2021
4. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்: 22.07.2021
5. 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
7. அரசாணை எண்.208, தொழில் (எம்.எம்.சி.1) துறை, நாள்: 21.09.2020.
8. தொடர்புடைய ஆவணங்கள்.

*****

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புலஎண்.202/1A2 மொத்தப்பரப்பு 1.21.5 ஹெக்டேர் பரப்பு நிலத்தில் ஐந்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக்கோரி தென்காசி மாவட்டம், சங்கரன்கோவில் வட்டம், திருவேங்கடம் கிராமம், இந்திரா நகர், கதவு எண்.60C என்ற முகவரியைச் சேர்ந்த திரு.கு.கனிராஜ் த/பெ.குருசாமி என்பவர் பார்வை 1-ல் காணும் மனுவில் விண்ணப்பம் செய்துள்ளார்.

சாத்தூர் வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோர் கீழ்காணும் நிபந்தனைகளுக்குட்பட்டு மேற்கண்ட புலங்களில்

கனிராஜ்

130

உடைகல், கிராவல் குவாரி குத்தகை உரிமம் ஐந்தாண்டுகளுக்கு வழங்க பரிந்துரை செய்துள்ளனர்.

1) **அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.**
2) புல எண். 202/2, 203/4-ல் அமைந்துள்ள வண்டிப்பாதைக்கு 10மீ பாதுகாப்பு இடைவெளி தூரம் கடைபிடிக்க வேண்டும்.
3) பொதுமக்கள் / 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 பேணபட வேண்டும்.
6) குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7) கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புலஎண்.202/1A2 மொத்தப்பரப்பு 1.21.5 ஹெக்டேர் பரப்பு நிலத்திற்கு 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்:19 மற்றும் 20-ன்படி ஐந்து வருட காலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise area) கருதப்படுகிறது.

தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண்:41ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining Plan) 90 தினங்களுக்குள் சமர்ப்பிக்குமாறும், விதிஎண்:42-ன்படி மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு.கு.கனிராஜ் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்

பெறுநர்
திரு.கு.கனிராஜ்
த/பெ. குருசாமி,
60சி, இந்திரா நகர்,
கீழத் திருவேங்கடம் கிராமம்,
சங்கரங்கோவில் வட்டம், தென்காசி மாவட்டம்.

நகல் :
உறுப்பினர் செயலாளர்,
மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம்,
சென்னை.

கனிராஜ்

131

ANNEXURE-V

இட ஆய்வறிக்கை

(நாள்: 22.07.2021)

தென்காசி மாவட்டம், சங்கரன்கோவில் வட்டம், கீழதிருவேங்கடம் கிராமம், இந்திரா நகர், கதவு எண்.60C என்ற முகவரியில் குடியிருந்து வரும் திரு.கு.கனிராஜ் த/பெ.குருசாமி என்பவர் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புலஎண்.202/1A2 மொத்தப்பரப்பு 1.21.50 ஹெக்டேரில் 5 வருட காலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்க வேண்டி 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்.19-ன்படி விண்ணப்பம் செய்திருந்தார். விண்ணப்ப புலங்கள் 22/07/2021 தினத்தன்று இவ்வலுவலக தனிவருவாய் ஆய்வாளாருடன் இணைந்து ஆய்வு செய்யப்பட்டது.

விண்ணப்பிக்கப்பட்ட புலஎண்.202/1A2 பட்டாஎண்.1783-ன்படி குருசாமி மகன் கனிராஜ் என்பவர் பெயரில் அப்பையநாயக்கன்பட்டி கிராம ஆவணங்களில் பதிவாகியுள்ளது. இதன்படி மேற்கண்ட புலங்களுக்கு விண்ணப்பதாரர் முழு உரிமையுடையவராகிறார். ஸ்தல ஆய்வில் புலஎண். 202/1A2 மொத்தப்பரப்பு 1.21.50 ஹெக்டேர் பரப்பு நிலத்தில் ஏற்கனவே திரு.கு.கனிராஜ் என்பவருக்கு விருதுநகர் மாவட்ட ஆட்சியரின் செயல்முறை ஆணை எண். ந.க.கே.வி1/33631/2013, நாள்:16.09.2016-ன்படி 06.10.2016 முதல் 05.10.2021 வரை குத்தகை உரிமம் வழங்கப்பட்டு உள்ளது. இப்புலத்தின் பகுதி பரப்பில் கிராவல் மற்றும் கற்கள் சுமார் 6.00 மீட்டர் ஆழம் வரை வெட்டி எடுக்கப்பட்டுள்ளது. இவ்வுரிமம் 05.10.2021-டன் முடிவடைய உள்ள நிலையில் மீண்டும் அதே புலஎண்.202/1A2 1.21.5 ஹெக்டேர் பரப்பில் ஐந்தாண்டுகளுக்கு கல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க கோரியுள்ளார். புலஎண்.202/1A2 பரப்பில் குவாரி செய்யப்பட்டமையால் ஏற்பட்ட குழிகள் உள்ளது. அதன் விபரம் பின்வருமாறு. (சராசரி)

93 மீ (நீளம்), 43 மீ (அகலம்), 6 மீ (ஆழம்)

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. உயர்வகை மரங்கள் ஏதுவும் இல்லை. புலங்களுக்கு சென்று வர பாதை வசதி உள்ளது.

கு.கனிராஜ்

விண்ணப்பிக்கப்பட்ட புலங்கள் புஞ்சை வகைப்பாடுடைய நிலங்களாகும். புலத்தின் மேற்பரப்பில் இருந்து சுமார் 2.5 மீட்டர் ஆழம் வரை சிதைந்த கிராவலுடன் கூடிய சிதைந்த பாறைகளும் (Weathered Rock), அதனை தொடர்ந்து சார்னகைட் (Charnockite) எனப்படும் கடின பாறைகளும் (Hard rock) உள்ளது தணிக்கையில் தெரிய வருகிறது. கடின பாறைகளில் காணப்படும் வேறுபட்ட நிறங்கள் (Different in colours), இணைப்புகள் (Joints), பிளவுகள், கீரல்கள் (Cracks) வெடிப்புகள் மற்றும் மாறுபட்ட அளவு கொண்ட கனிமங்கள் காரணமாக இப்பாறைகளில் மெருகேற்றக் கூடிய வண்ண கற்களை (Polished Granite Blocks) உற்பத்தி செய்ய இயலாது. இவ்வகை பாறைகளில் இருந்து கட்டிடப்பணிகள் மற்றும் சாலை / இரயில்வே பணிகளுக்கு தேவைப்படும் கற்கள், ஜல்லிகள், வேலி கற்கள் ஆகியவற்றை உற்பத்தி செய்ய இயலும்.

எனவே திரு.கு.கனிராஜ் என்பவரின் கோரிக்கையினை ஏற்று வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புலஎண்.202/1A2 1.21.5 ஹெக்டேர் பரப்பில் உடைகல் மற்றும் கிராவல் குவாரி உரிமம் ஐந்தாண்டுகளுக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதிஎண்.19 மற்றும் 20ன்படி பின்வரும் நிபந்தனைகளுக்குட்பட்டு வழங்க பரிந்துரை செய்கிறேன்.

நிபந்தனைகள் :

1) அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2) புல எண். 202/2, 203/4-ல் அமைந்துள்ள வண்டிப்பாதைக்கு 10மீ பாதுகாப்பு இடைவெளி தூரம் கடைபிடிக்க வேண்டும்.
3) பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் 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 பேணபட வேண்டும்.
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.

இணைப்பு : புகைப்படங்கள்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

13

ANNEXURE - VI

ELECTION COMMISSION ...
IDENTITY CARD

TN/35/212/0006920

Elector's Name : Kaniraj
வாக்காளரின் பெயர் : கனிராஜ்
Father / Mother / Husband's Name : Gurusamy
தந்தை/தாய்/கணவர் பெயர் : குருசாமி
Sex / பாலினம் : Male ஆண்
Age as on 1.1.1995 / 1.1.1995 அன்று வயது : 26

Address : Parasipatti South Street
Thiruvengadam (TP)

Facsimile Signature of the Electoral Registration Officer for 212 - Kovilpatti Assembly Constituency
212 - கோவில்பட்டி சட்டமன்றத் தொகுதிக்கான வாக்காளர் பதிவு அதிகாரியின் கையொப்ப முத்திரை

Place : Kovilpatti
இடம் : கோவில்பட்டி
Date / நாள் : 14.12.1997

This Card may be used as an Identity Card under different Government Schemes.
இந்த அட்டையை அரசின் பல்வேறு திட்டங்களில் நீம் அடையாள அட்டையாகப் பயன்படுத்தலாம்.

கு.கனிராஜ்

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

G KANIRAJ

GURUSAMY

03/08/1975

Permanent Account Number
CHYPK9799K

G. Kaniraj

Signature

12122011

0 1 SEP 2021

इस कार्ड के खोने / पाने पर कृपया सूचित करें / वापस करें:
आयकर पैन सेवा इकाई, एन एस डी एल
तीसरी मंजील, सफायर चेंबर्स,
बानेर टेलिफोन एक्स्चेंज के नजदीक,

If this card is lost / someone's lost card is found,
please inform / return to :
Income Tax PAN Services Unit, NSDL
3rd Floor, Sapphire Chambers,
Near Baner Telephone Exchange,
Baner, Pune - 411 045.

Tel: 91-20-2721 8080, Fax: 91-20-2721 8081
e-mail: tininfo@nsdl.co.in

135

கனிராஜ்

ANNEXURE-VII

District : Virudhunagar

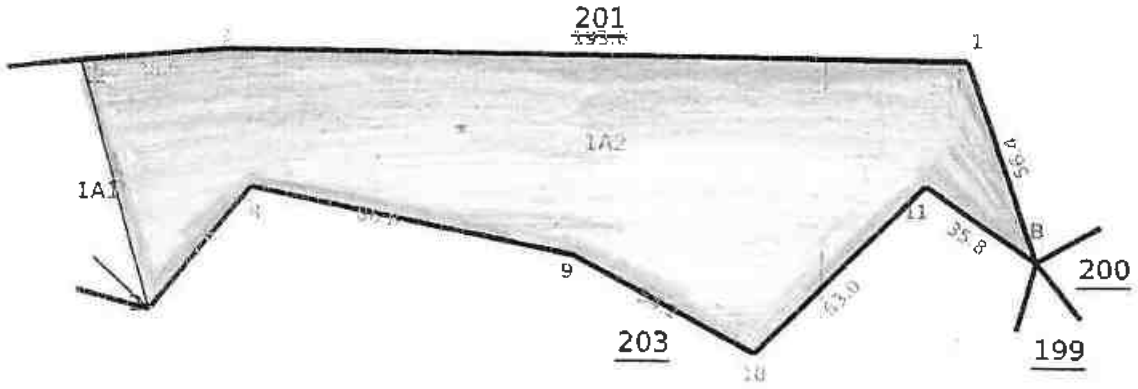
Taluk : VEMBAKKOTTAI

Village : Appanayakkanpatti [16]

Survey No : 202/1A2

Area : Hect 01 Ares 21.50

Scale : 1 : 1838



RENEWAL AREA FOR QUARRY LEASE

EXISTING PROPOSED ROUGH STONE QUARRY

Sf No - 202/1A2,

Appanayakkanpatti Village,

Vembakkottai Taluk,

Virudhunagar DISTRICT

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
ROP/MAS/260/2014/A
(Valid upto 13.11.2024)

Date of Issue: 17-02-2021 07:18:30

mv.260 fi

Survey and Settlement Department, Government of Tamilnadu

186

District : Virudhunagar

Taluk : VEMBAKKOTTAI

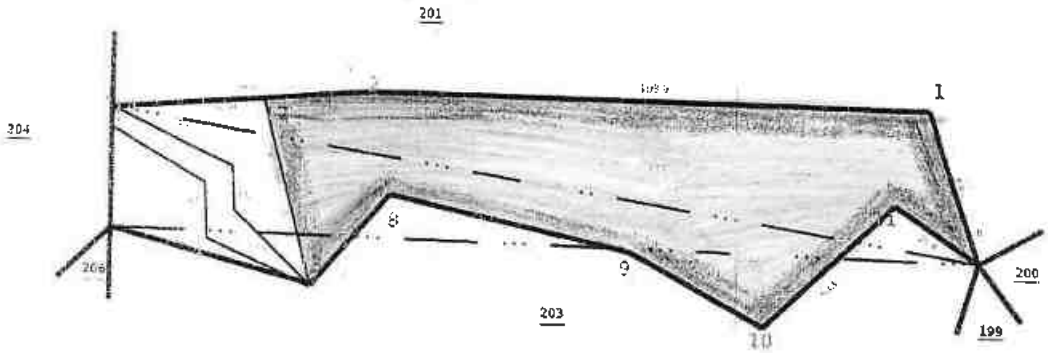
Village : Appanayakkanpatti [16]

Survey No : 202

Area : Hect 01 Ares 52.00

Scale : 1 : 2446

01 SEP 2021



RENEWAL AREA FOR QUARRY LEASE

Thiru. KANNAN Rough Stone Quarry

Proposed Boundary

SF. No. 202/1A2

Appanayakkanpatti Village,

Vembakkottai Taluk,

Virudhunagar District.

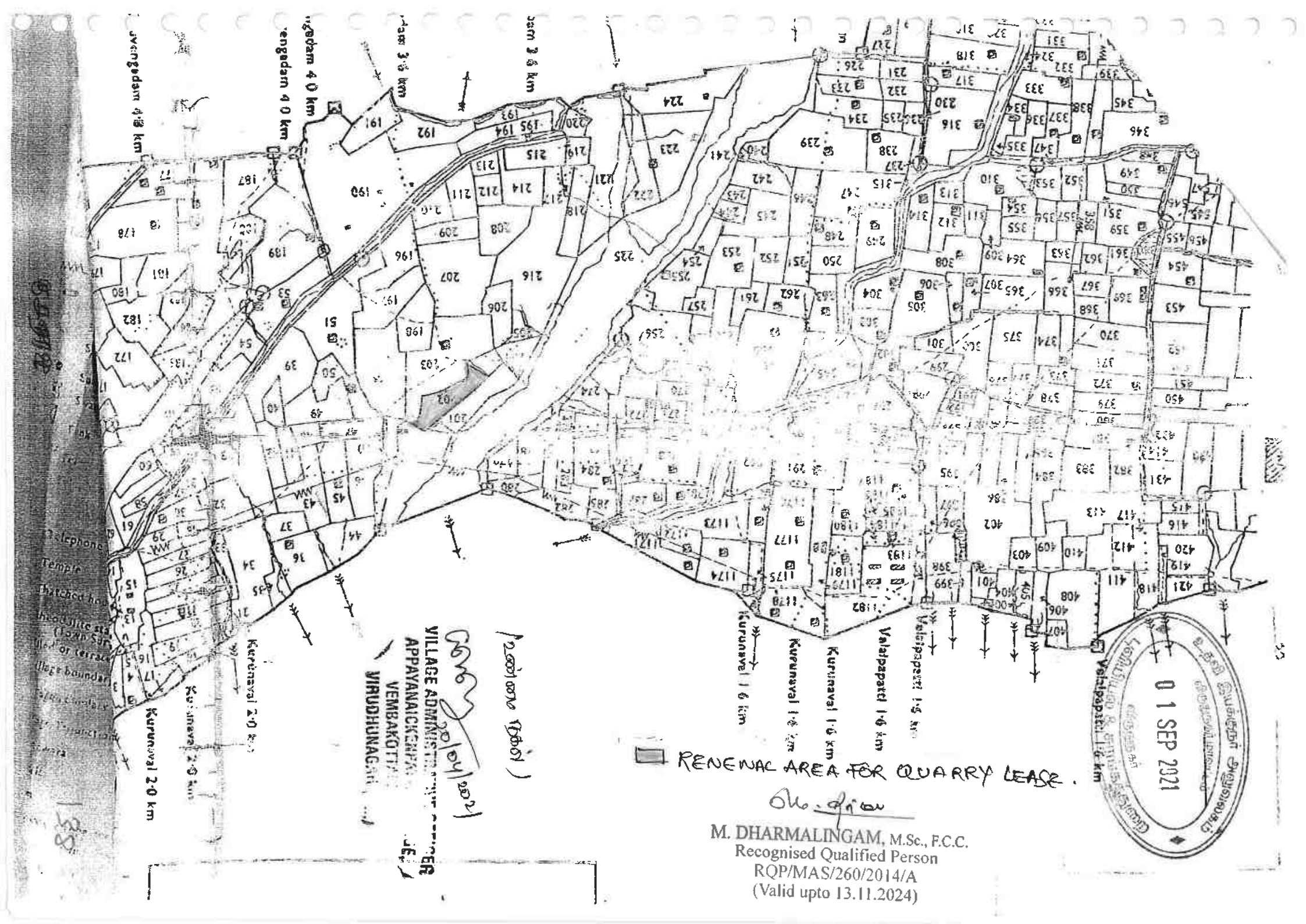
M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

Date of Issue: 17-02-2021 07:21:19

mv.260 fi

Survey and Settlement Department, Government of TamilNadu

137



VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPA...
VEMBAKOTTAI
VIRUDHUNAGAR...

01 SEP 2021

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

ANNEXURE-VIII

01 SEP 2021

MINES LAND PHOTO

விருதுநகர் மாவட்டம் வெம்பக்கோட்டை வட்டம் அப்பையநாயக்கன்பட்டி கிராமம் பட்டா எண். 1783-ல் புலஎண். 202/1A2 மொத்தம் 1-21.50 ஹெக்டேரில் மட்டும் 5 வருடங்களுக்கு விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/158/2021-கனிமம் நாள் 13.08.2021ன் படி திரு. கு. கணிராஜ், த/பெ. குருசாமி அவர்கள் மனு செய்துள்ளார். மேற்படி இடம் உடைகல், ஜல்லி மற்றும் கிராவல் வெட்டி எடுப்பதற்கு அங்கீகரிக்கப்பட்ட இடம் என்பதை இதன் முலம் சான்றளிக்கிறேன்.

மேற்படி இடத்திற்கு செல்வதற்கு அணுகுபாதை வசதி உள்ளது என்றும் சான்றளிக்கிறேன்.

இடம்:

நாள்:

மனுதாரர் கையெப்பம்

கிராம நிர்வாக அலுவலர்.
VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (Dt.).

139

கிராம நிர்வாக அலுவலரின் சான்று

விருதுநகர் மாவட்டம் வெம்பக்கோட்டை வட்டம் அப்பையநாய்க்கன்பட்டி கிராமம் பட்டா எண். 1783-ல் புலஎண். 202/1A2 மொத்தம் 1-21.50 ஹெக்டேரில் மட்டும் 5 வருடங்களுக்கு விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/158/2021-கனிமம் நாள் 13.08.2021ன் படி திரு. கு. கனிராஜ், த/பெ. குருசாமி 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.

18/08/2021

கிராம நிர்வாக அலுவலர்.
VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (Dt.,)

140

ANNEXURE - IX

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : விருதுநகர் **வட்டம் : வெம்பக்கோட்டை**

வருவாய் கிராமம் : அப்பையநாயக்கன்பட்டி **பட்டா எண் : 1783**

உரிமையாளர்கள் பெயர்

1. குருசாமி மகன் கனிராஜ்

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	
202	1A2	1 - 21.50	2.47	--	--	--	--	---- -- 23-05-2002
		1 - 21.50	2.47					

குறிப்பு2 :

1.	மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் [illegible] என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2.	இத் தகவல்கள் 17-02-2021 அன்று 07:17:33 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3.	கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

கனிராஜ்

161

		199-3		ர	ய			8-2	4	2	00	0	1.50	0	06	513-லட்சுமண நாயக்கர் மற்றும் 2 நபர்(கள்)	
199	4	199-4		ர	ய			8-2	4	2	00	0	3.00	0	06	1452-பெரியசக்கண நாயக்கர் மற்றும் 4 நபர்(கள்)	
199	5	199-5		ர	ய			8-2	4	2	00	0	28.00	0	56	1452-பெரியசக்கண நாயக்கர் மற்றும் 4 நபர்(கள்)	
199	6A	199-6	P	ர	ய			8-2	4	2	00	1	8.00	2	20	2010-கோபாலகிருஷ்ணன்	
199	6B	199-6	P	ர	ய			8-2	4	2	00	0	10.50	0	20	2011-ராம்ராஜ்	
199	7	199-7		ர	ய			8-2	4	2	00	0	16.50	0	31	1453-பெருமாள் மற்றும் 4 நபர்(கள்)	
199	8	199-8		ர	ய			8-2	4	2	00	0	97.50	1	94	2011-ராம்ராஜ்	
199	9	199-9		ர	ய			8-2	4	2	00	0	6.50	0	13	513-லட்சுமண நாயக்கர் மற்றும் 2 நபர்(கள்)	
TOTAL FOR SURVEY NUMBER- 199												2	96.50	5	78		
200	1	200-2	P	ர	ய			8-2	4	2	00	0	62.00	1	30	1716-குமரேசன்	
200	2	200-2		ர	ய			8-2	4	2	00	0	11.50	0	25	513-லட்சுமண நாயக்கர் மற்றும் 2 நபர்(கள்)	
200	3	200-3	P	ர	ய			8-2	4	2	00	0	22.50	0	44	513-லட்சுமண நாயக்கர் மற்றும் 2 நபர்(கள்)	
TOTAL FOR SURVEY NUMBER- 200												0	96.00	1	99		
201	1	201-1		ர	ய			8-2	4	2	00	0	60.00	1	20	513-லட்சுமண நாயக்கர் மற்றும் 2 நபர்(கள்)	
201	2	201-2		ர	ய			8-2	4	2	00	0	69.50	1	39	513-லட்சுமண நாயக்கர் மற்றும் 2 நபர்(கள்)	
201	3	201-3	P	அ	புற			0-0	0	0	00	0	16.00	0	00		வாரி
201	3	201-3	P	அ	புற			0-0	0	0	00	0	16.00	0	00		வாரி
201	4	201-4		ர	ய			8-2	4	2	00	0	69.50	1	39	1844-கோபாலகிருஷ்ணன்	
201	5	201-5		ர	ய			8-2	4	2	00	0	53.50	1	07	1699-ராமசாமி நாயுடு	
TOTAL FOR SURVEY NUMBER- 201												2	84.50	5	05		
202	1A1	202-1A	P	அ	புற		0	8-2	4	0	00	0	11.00	0	00		
202	1A1	202-1A	P	அ	புற		0	8-2	4	0	00	0	11.00	0	00		
202	1A2	202-1A	P	ர	ய			8-2	4	2	00	1	21.50	2	47	1783-கனிராஜ்	

தி. எண். (9) அப்பய்யநாயக்கன்பட்டி.

	2	3	4	6	6	7	8	9	10	11	12
							கு. பை.	தெ.ஏர்ஸ்	கு. பை.		
	201-1	ர	செ	...	8-2	4	2 00	0 60·0	1 20	513 ந. லட்சுமண நாயக்கர் (1), ந. முத்தாலப்ப நாயக்கர் (2), பெ. நல்ல முத்து நாயக்கர் (3).	-
	-2	ர	செ	...	8-2	4	2 00	0 69·5	1 39	513 ந. லட்சுமண நாயக்கர் (1), ந. முத்தாலப்ப நாயக்கர் (2), பெ. நல்ல முத்து நாயக்கர் (3).	
3	-3	ச	புற	...	...	...	...	0 16·0	...	.....	ஓடை.
4	-4	ர	செ	...	8-2	4	2 00	0 69·5	1 39	1505 க. சுப்பையா நாயக்கர்.	
5	-5	ர	செ	...	8-2	4	2 00	0 53·5	1 07	1126 அ. வைர பிரகாசம்.	
								2 68·5	5 05		
202	1A	202-1A	ச	செ	...	8-2	4	2 00	1 32·5	2 69	.....	தரிசு.
	1B	-1B	ர	செ	...	8-2	4	2 00	0 06·0	0 13	162 ரா. காந்தி மீனாட்சி யம்மாள்.	
	2	-2	ச	புற	...	...	...	...	0 08·0	...	.....	வண்டிப் பாதை.
	3	-3	ர	செ	...	8-2	4	2 00	0 11·5	0 24	195 வே. கடற் கரை.	
									1 58·0	3 06		
203	1	203-1	ர	செ	...	8-2	4	2 00	0 42·5	0 85	104 கா. கந்தக் குடும்பன்.	
	2	-2	ர	செ	...	8-2	4	2 00	0 29·0	0 58	1306 சிலுவுக் குடும்பன் (1), கருப்பாயி (2), வழிவிட் டான் (3).	
	3	-3	ர	செ	...	8-2	4	2 00	0 31·0	0 62	513 ந. லட்சுமண நாயக்கர் (1), ந. முத்தாலப்ப நாயக்கர் (2). பெ. நல்ல முத்து நாயக்கர் (3).	

கிராம நிர்வாக அலுவலர்,
அப்பய்யநாயக்கன்பட்டி

143

1427

(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(18அ)	(19)
	1783 ④ கிணறு													

202-1A+1215 2.47

2 எண்ணிக்கை

01/08/21

கிராம நிர்வாக அலுவலர்,
அய்யம்பேடுசாலக்கல்பட்டி
கிளாசி வட்டம்

01 SEP 2021

1427

ANNEXURE - X

भारतीय गैर न्यायिक

बीस रुपये

Rs.20

रु.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

08AA 837183

தமிழ்நாடு தமிலநாடு TAMIL NADU

19.10.06

திருநெல்வேலி

ரூ.30,000

2006ம் வருடம் அக்டோபர் மாதம் 19ம் தேதிக்கு

கமிழ் விய வருடம் ஐப்பசி மாதம் 2ம் தேதி

திருநெல்வேலி மாவட்டம், சங்கரன்கோவில் வட்டம், திருவேங்கடம்

கிராமம் கல்பர் இந்திராநகரில் கதவு எண்.மி-66ல் வசிக்கும் குருசாமி

அவர்கள் குமாரி கமிராஜ் அவர்களுக்கு

விருதநகர் மாவட்டம், திருவில்லிபுத்தூர் வட்டம், அசசந்தவிழ்த்தான்

கிராமம் கல்பாவில் வசிக்கும் லேட்.சக்கலன் ஆசாரி அவர்கள் மனைவி வயதில்

வந்தாள் 1 மகளார் குமாரிகள் லேட்.சக்கலன் ஆசாரி குமாரிகள் மாரியப்பன் 2

கனிராஜ்

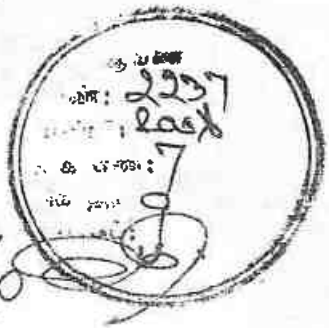
—ல் கையொப்பமிட்டோம்

—ல் மாரியம்மாள் டாம

ரு. முன்றாம் சாட்சி

145

கனிராஜ்



08AA 837184

தமிழ்நாடு तमिलनाडु TAMIL NADU

19-10-06

.2.

பொன்னுசாமி 3 ஆகிய நாங்கள் எழுதிக்கொடுக்க கிரையபத்திரம்.

இதன் தபசில் கண்ட சொத்தானது எங்களுக்கு பூர்வீகமாகும், எங்களில் 1 நபரின் கணவரும், 2,3 நபர்களின் தகப்பனாருமான லேட்.சதாசிவம் ஆசாரி அவர்களுக்கு பட்டா எண்.1646 நிர்.பட்டா மூலம் பட்டா கண்டும், தொடர்ந்து அனுபவித்து காலஞ்சென்ற பின் கூட்டாக அனுபவித்து வருகிற இதன் தபசில் கண்ட சொத்தை நாங்கள் தங்களுக்கு நாளது தேதியில் கிரையம் செய்து கொடுத்தது ரூ.30,000/-இந்த ரூபாய் முப்பதாயிரமும் எங்கள் குடும்பநலன் கருதி இதமுள்ள நாங்கள் தங்களிடம் தொகை பெற்றுக்கொண்டபடியால் தபசில் கண்ட சொத்தை தாங்கள் நாளது தேதி முதல் கிரையபத்திரமாகவும், சர்வசுதந்திர பாத்தியமாகவும், சந்ததி பரம்பரையாகவும் அனுபவித்துக்

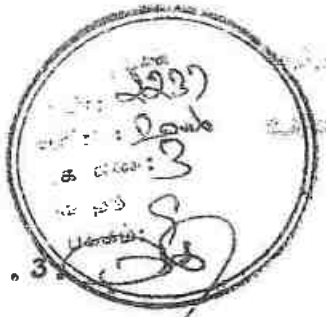
சாட்சி

1. [illegible]

2. [illegible]

147

தமிழ்நாடு तमिलनाडु TAMIL NADU 08AA 837185



கொள்ளிகளாகவும் தபசில் சொத்து கங்கள் பெயருக்கு பட்டாவாகும்படிக்கு இத்துடன் புகீன்மனுவும் கொடுத்துவிட்டோம். தபசில் சொத்தில் பாரில் எவ்வித விவிலங்கும் இல்லையென்று உறுதி கூறுகிறோம். ஏதேனும் விவிலங்கும் வியாரங்கள் ஏற்பட்டால் எங்களின் இதரச்சொத்திலிருந்து நிவர்த்தி செய்து கொடுப்போமாக வும். தபசில் சொத்தை நாதை மகன் முதல் கங்களின் சுவாதீன அனுபவத்திற்கு விட்டு விட்டோம்.

சொத்து விபரம்

தபசில் விருதுநகர் பஞ்சு மாவட்டம் சீழராஜகுலராமன் சார்பஞ்சு சரகம் அபிவைதாயக்கர்பட்டி கிராமம் பட்டா எண்.1646 நிலம் சர்வே அடங்கல்

—ன் மனுவினை வரிதாள்டாம

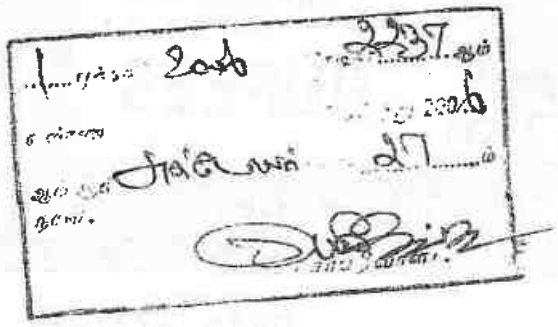
—ன் மாரியப்பிள்ளை டாம

149

இணைமேலாய்வு குறிப்புகள்

ஸ்ரீபார்வதி அ/மி மாரிகண்ணன், சிவகாசி

சக்திவேல் அ/மி சங்கைகண்ணன் (தலைவர்), அச்சம்தவிர்த்தான்.



भारतीय गैर न्यायिक

बीस रुपये

Rs.20

रु.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMIL NADU

08AA 837186

19.8.06

சார்பு நீதிமன்றம்

சர்வே 202/1ஏ திரீக்கு மெட்டியைமனீட் ரீ சர்வேப்படி சர்வே 202/1ஏ2 நிர்.மேறக்கடேரி 1.21.5க்கு ஏகீகரி 3 (மூன்று) பூராவும் மாகி:

1) வெயிலிமுத்தாள்டாம

2) மாரியப்பன்டாம

நிகனராஜ்

நிகனராஜ்

15

भारतीय गैर न्यायिक

सत्यमेव जयते

बीस रुपये

Rs.20

रु.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

08AA 837187

தமிழ்நாடு तमिलनाडु TAMIL NADU

19/10/06

மாற்றுத்திறனாளி புத்தகத்திற்கு .. விற்கு

கோபிநாதன் புத்தகத்திற்கு .. பெற்று

கம்பளத்து நாயக்கர் புத்தகத்திற்கு .. தெற்கு

வண்டிப்பாதைக்கு .. வடக்கு

இம்மாவட்டத்தில் 30 பக்கத்தில் மாற்றுத்திறன் மதிப்பு ரு.30,000/-

[illegible] கையின் சுற்றளவு

[illegible] மார்பின் சுற்றளவு

[illegible]

152

மேற்படி சொத்தை அபகரிப்பதற்காக பத்திரப்பதிவு செய்து கொடுத்த

துணைராஜ்

ஆகும்.

வலது கை பெருவிரல் ரேகை

இடது கை பெருவிரல் ரேகை

சாட்சிகள்:

1) [illegible]

2) [illegible]

வரைவு செய்தவர்

S/o. திருநாவுக்கரசு

மாவட்ட அரசு ப்ளீடர்

கீழ்நீதிமன்றம்,

உரிமம் எண்: B/279/VGR/84

துணைராஜ்

153

ANNEXURE- XI

TOPO GRAPHICAL VIEW OF APPAIYANAICKANPATTI ROUGHSTONE / JELLY / GRAVEL QUARRY

Name and Address of the owner :- **G. KANIRAJ,**
S/o. SRI. GURUSAMY,
No.60C, INDRA NAGAR,
THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT.

S.F.No. of the Quarry lease area :- **202/1A2**

Extent of the Quarry lease area :- **1-21.5 Hectares**

Name of the Village (Which lease is located):- **APPAIYANAICKANPATTI**

Taluk :- **VEMBAKOTTAI**

Distict :- **VIRUDHUNAGAR**

State :- **TAMILNADU**

Place:- VIRUDHUNAGAR

Date:- 23-08-2021 **Proponent Signature**

R.Q,P Signature

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

ANNEXURE-XII

அனுப்புநர்:

திருமதி. ரா.புஷ்பா, பி.எஸ்.சி.,
வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

பெறுநர்:

மாவட்ட ஆட்சியர்,
விருதுநகர்.

ந.க.அ2 / 1574 /2021, நாள்: 21.06.2021.

ஐயா,

பொருள் : கனிமம் மற்றும் சுரங்கம் - விருதுநகர் மாவட்டம் - வெம்பக்கோட்டை வட்டம் - அப்பையநாயக்கன்பட்டி கிராமம் - பட்டா எண்.1783-ல் புல எண்கள்.202/1ஏ2, 1.21.50 ஹெக்டேர் பரப்பு நிலத்தில் 5 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரியுள்ளது - கருத்துரு அனுப்புதல் - தொடர்பாக.

பார்வை:

1. விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் கடிதம் எண் ந.க கேவி1/158/2020, நாள்: 01.03.2021.
2. வெம்பக்கோட்டை, வருவாய் வட்டாட்சியர் கடித எண். ந.க. அ6/562/2021, நாள்: 26.05.2021.

*****

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண். 1783-ல் புல எண். 202/1ஏ2, 1.21.50 ஹெக்டேர் பரப்பு நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரி திரு.கு.கனிராஜ், த/பெ. குருசாமி என்பவர் மனு செய்துள்ளது தொடர்பாக, எனதறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

மனுதாரர் குவாரி செய்ய உரிமம் வழங்கக் கோரும் இடம் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 202/1ஏ2, பட்டா எண்.1783, குருசாமி மகன் கனிராஜ் என்பவர் பெயரில் அப்பையநாயக்கன்பட்டி வருவாய் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.

மேற்படி கிராம புல எண்.202/1ஏ2-க்கு நான்குமால் விபரம்:-

வடக்கு - புல எண்.201/3, 4-ல் ஓடை, கோபால்கிருஷ்ணன்,
தெற்கு - புல எண்.203/1, 2-ல் ராமராஜ், ராஜேந்திரன்,
மேற்கு - புல எண்.202/1பி-ல் கனிராஜ்,
கிழக்கு-புல எண்.202/1ஏ1-ல் தீர்வை ஏற்பட்ட தரிசு,

மேற்படி புல எண்.202/1ஏ2 நிலமானது விருதுநகர் மாவட்ட ஆட்சியர் அவர்களால் 33631/கே.வி.1/2013, நாள்: 16.09.2016 உத்தரவின்படி 5 வருடங்களுக்கு குத்தகை உரிமம் வழங்கப்பட்டு செயல்பட்டுக்கொண்டிருக்கிறது. மேற்படி குவாரி அமைக்கக் கோரும் புலங்களைச் சுற்றி 300 மீ சுற்றளவிற்கு குடியிருப்பு பகுதிகள் எதுவும் கிடையாது. 300 மீ சுற்றளவில் முடிவடைந்த மற்றும் செயல்படும் குவாரிகள் எதுவும் இல்லை. 50 மீ சுற்றளவிற்குள் சாலைகள், இரயில் இருப்பு பாதைகள், கோவில்கள் மற்றும் புராதனச் சின்னங்கள், மின்கம்பிகள், நீர்நிலை ஆதாரங்கள் எதுவும் கிடையாது.

கு.கனிராஜ்

மேற்படி குவாரி அமைவதால் அதன் அருகிலுள்ள நிலங்களுக்கோ, நீர் நிலை ஆதாரங்களுக்கோ, பொது பாதைகளுக்கோ எவ்விதமான இடையூறும் கிடையாது.

மேற்படி புலத்தில் மாவட்ட ஆட்சியர் அவர்களின் செயல்முறை ஆணைகள் கே.வி.1/33631/2013, நாள்: 16.09.2016-ன்படி ஐந்து வருடங்களுக்கு கற்குவாரி உரிமம் வழங்கப்பட்டதில், 7.6 மீட்டர் ஆழம், 93 மீட்டர் நீளம், 43 மீட்டர் அகலத்திலும் கனிமம் எடுக்கப்பட்டுள்ளது.

மேற்படி அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண்.1783-ல் புல எண்.202/1ஏ2, பரப்பு 1.21.50 ஹெக்டேர் பரப்பு நிலத்தில் கல்குவாரி அமைவதால் அருகில் உள்ள நீர்நிலைகள் எதற்கும் பாதிப்பு ஏற்பட வாய்ப்பில்லை. அருகில் உள்ள புறம்போக்கு பட்டா நிலங்களுக்கு பாதிப்பில்லை. அப்பையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் மூலம் "அ1" நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் பொது மக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மேலும் மனுதாரர் தி/ள்.கனிராஜ் கல்குவாரி உரிமையாளர் கு.கனிராஜ் என்பவர் அப்பையநாயக்கன்பட்டி கிராமத்தில் அரசுக்கு செலுத்த வேண்டிய நிலவரி பாக்கி ஏதுமில்லை. மேலும் குவாரி அமையும் புலம் அப்பையநாயக்கன்பட்டி ஊராட்சி மன்றத்திற்கும், வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்திற்கும் உட்பட்டது.

இந்நேர்வில், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி வருவாய் கிராமம், பட்டா எண்.1783-ல் புல எண்.202/1ஏ2-ல் 1.21.50 ஹெக்டேர்ஸ் நிலத்தில் அருகில் உள்ள பட்டா நிலங்களுக்கு போதிய பாதுகாப்பு தூரம் விடுத்து 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகளின்படி திரு.கனிராஜ், த/பெ. குருசாமி என்பவருக்கு மேற்படி நிலங்களில் 5 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கலாம் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு:

வருவாய் வட்டாட்சியர் அறிக்கை (ம) அதனுடன் வரப்பெற்ற இணைப்புகள்.

ஒம்/ரா.புஷ்பா,
வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

/உத்தரவுப்படி/

நேர்முக உதவியாளர்

156

புலத்தணிக்கைக்குறிப்பு

புலத்தணிக்கை அலுவலர் பெயர் மற்றும் பதவி	வருவாய் கோட்டாட்சியர், சாத்தூர்.
தணிக்கை செய்த இடம்	வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம்.
புல எண்கள்	பட்டா எண்.1783, புல எண்.202/1ஏ2
தணிக்கை நாள்	18.06.2021
புலத்தணிக்கையின் நோக்கம்	ஐந்து வருடங்களுக்கு உடைகல்மற்றும் கிராவல் விற்பனை செய்ய அனுமதி வழங்கக் கோரியது - தொடர்பாக.

*****

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண். 1783-ல் புல எண். 202/1ஏ2, 1.21.50 ஹெக்டேர் பரப்பு நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரி திரு.கு.கனிராஜ், த/பெ குருசாமி என்பவர் மனு செய்துள்ளது தொடர்பாக, 18.06.2021 அன்று புலத்தணிக்கை செய்யப்பட்டது. புலத்தணிக்கையின்போது வருவாய் வட்டாட்சியர், மண்டல துணை வட்டாட்சியர், குறுவட்ட ஆய்வாளர், குறுவட்ட அளவர் மற்றும் கிராம நிர்வாக அலுவலர் ஆகியோர் உடனிருந்தனர்.

மனுதாரர் குவாரி செய்ய உரிமம் வழங்கக் கோரும் இடம் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண்.202/1ஏ2, பட்டா எண்.1783, குருசாமி மகன் கனிராஜ் என்பவர் பெயரில் அப்பையநாயக்கன்பட்டி வருவாய் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.

மேற்படி கிராம புல எண்.202/1ஏ2-க்கு நான்குமால் விபரம்:-

வடக்கு - புல எண்.201/3, 4-ல் ஓடை, கோபால்கிருஷ்ணன்,
தெற்கு - புல எண்.203/1, 2-ல் ராமராஜ், ராஜேந்திரன்,
மேற்கு - புல எண்.202/1பி-ல் கனிராஜ்,
கிழக்கு-புல எண்.202/1ஏ1-ல் தீர்வை ஏற்பட்ட தரிசு,

மேற்படி புல எண்.202/1ஏ2 நிலமானது விருதுநகர் மாவட்ட ஆட்சியர் அவர்களால் 33631/கே.வி.1/2013, நாள்: 16.09.2016 உத்தரவின்படி 5 வருடங்களுக்கு குத்தகை உரிமம் வழங்கப்பட்டு செயல்பட்டுக்கொண்டிருக்கிறது. மேற்படி குவாரி அமைக்கக் கோரும் புலங்களைச் சுற்றி 300 மீ சுற்றளவிற்கு குடியிருப்பு பகுதிகள் எதுவும் கிடையாது. 300 மீ சுற்றளவில் முடிவடைந்த மற்றும் செயல்படும் குவாரிகள் எதுவும் இல்லை. 50 மீ சுற்றளவிற்குள் சாலைகள், இரயில் இருப்பு பாதைகள், கோவில்கள் மற்றும் புராதனச் சின்னங்கள், மின்கம்பிகள், நீர்நிலை ஆதாரங்கள் எதுவும் கிடையாது.

157

திரு.எஸ்.இராஜ்
வருவாய் வட்டாட்சி
வெம்பக்கோட்டை

மேற்படி குவாரி அமைவதால் அதன் அருகிலுள்ள நிலங்களுக்கோ, நீர் நிலை ஆதாரங்களுக்கோ, பொது பாதைகளுக்கோ எவ்விதமான இடையூறும் கிடையாது.

மேற்படி புலத்தில் மாவட்ட ஆட்சியர் அவர்களின் செயல்முறை ஆணைகள் கே.வி.1/33631/2013, நாள்: 16.09.2016-ன்படி ஐந்து வருடங்களுக்கு கற்குவாரி உரிமம் வழங்கப்பட்டதில், 76 மீட்டர் ஆழம், 93 மீட்டர் நீளம், 43 மீட்டர் அகலத்திலும் கனிமம் எடுக்கப்பட்டுள்ளது.

மேற்படி அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண்.1783-ல் புல எண்.202/1ஏ2, பரப்பு 1.21.50 ஹெக்டேர் பரப்பு நிலத்தில் கல்குவாரி அமைவதால் அருகில் உள்ள நீர்நிலைகள் எதற்கும் பாதிப்பு ஏற்பட வாய்ப்பில்லை. அருகில் உள்ள புறம்போக்கு பட்டா நிலங்களுக்கு பாதிப்பில்லை. அப்பையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் மூலம் "அ1" நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் பொது மக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மேலும் மனுதாரர் தி/ள்.கனிராஜ் கல்குவாரி உரிமையாளர் கு.கனிராஜ் என்பவர் அப்பையநாயக்கன்பட்டி கிராமத்தில் அரசுக்கு செலுத்த வேண்டிய நிலவரி பாக்கி ஏதுமில்லை. மேலும் குவாரி அமையும் புலம் அப்பையநாயக்கன்பட்டி ஊராட்சி மன்றத்திற்கும், வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்திற்கும் உட்பட்டது.

இந்நேர்வில், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி வருவாய் கிராமம், பட்டா எண்.1783-ல் புல எண்.202/1ஏ2-ல் 1.21.50 ஹெக்டேர்ஸ் நிலத்தில் அருகில் உள்ள பட்டா நிலங்களுக்கு போதிய பாதுகாப்பு தூரம் விடுத்து 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகளின்படி திரு.கனிராஜ், த/பெ. குருசாமி என்பவருக்கு மேற்படி நிலங்களில் 5 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க மாவட்ட ஆட்சியர் அவர்களுக்கு கடித வரைவு அனுப்பலாம்.

வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

158

கனிராஜ்

அனுப்புநர்

திரு.எஸ்.இராஜாஹுசைன்.,
வருவாய் வட்டாட்சியர்,
வெம்பக்கோட்டை.

பெறுநர்

வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

01 SEP 2021

ந.க.அ6/562/2021 நாள்: 26.05.2021

1574/2021
1/6/2021

ஐயா,

பொருள்: கனிமம் மற்றும் சுரங்கம் விருதுநகர் மாவட்டம் - வெம்பக்கோட்டை வட்டம் - அப்பையநாயக்கன்பட்டி கிராமம் - பட்டா எண்.1783-ல் புல எண்கள் .202/1ஏ2 1.21.50 ஹெக்டர் பரப்பு நிலத்தில் 5 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரியுள்ளது - கருத்துரு அனுப்ப கோருதல் - தொடர்பாக.

31 MAY 2021

பார்வை: 1.விருதுநகர் மாவட்ட ஆட்சித்தலைவர் அவர்களின் கடிதம் எண் ந.க.கேவி1/158/2020 நாள்:01.03.2021.
2.சாத்தூர் வருவாய் கோட்டாட்சியர் அவர்களின் கடிதம் ஒ.மு/அ2/0883/2021.நாள்:08.03.2021.
3.அப்பையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் அறிக்கை நாள்:20.04.2021.
4.ஆலங்குளம் வருவாய் ஆய்வாளர் அறிக்கை நாள்:23.04.2021.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண். 1783-ல் புல எண்.202/1ஏ2 1.21.50 ஹெக்டர் பரப்பு நிலத்தில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கோரி திரு.கு.கனிராஜ் த/பெ.குருசாமி என்பவர் பார்வை(1)-ல் காணும் மனுவில் மனுச் செய்துள்ளார். மேற்படி மனுதாரரின் கோரிக்கை தொடர்பாக 22.05.2021 2021அன்று புலத்தணிக்கை செய்து எனதறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

மனுதாரர் குவாரி செய்ய உரிமம் வழங்கக்கோரும் இடம் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண்- 202/1ஏ2, பட்டா எண்: 1783 குருசாமி மகன் கனிராஜ் என்பவர் பெயரில் அப்பையநாயக்கன்பட்டி வருவாய் கிராம கணக்கில் தாக்ககலாகியுள்ளது.

மேற்படி புலங்களுக்கு நான்குமால் விபரம்:

புல எண்.567/2ஏ, 567/2பி, 568/1பி-க்கு நான்குமால்

வடக்கு: புல எண் 201/3, 4 ஓடை, கோபால்கிருஷ்ணன்.

தெற்கு: புல எண் 203/1, 2 ராமராஜ், ராஜேந்திரன்

கிழக்கு : புல எண் 202/1B கனிராஜ்

மேற்கு: புல எண் 202/1A1 தீர்வை ஏற்பட்ட தரிசு

மேற்படி புல எண் 202/1A2 நிலமானது விருதுநகர் மாவட்ட ஆட்சியர் அவர்களால் 33631/கே.வி-1/2013 நாள்16.09.2016 உத்தரவின்படி 5 வருடங்களுக்கு குத்தகை உரிமம் வழங்கப்பட்டு செயல்பட்டுக் கொண்டிருக்கிறது. மேற்படி குவாரி அமைக்கக் கோரும் புலங்களைச் சுற்றி 300 மீ.

159

சுற்றளவிற்கு குடியிருப்பு பகுதிகள் எதுவும் கிடையாது என்றும் 50 மீ சுற்றளவிற்கு சாலைகள், இரு இருப்பு பாதைகள், கோவில்கள் மற்றும் புராதனச் சின்னங்கள், மின்கம்பிகள், நீர் நிலை ஆதாரங்கள் எதுவும் கிடையாது. மேற்படி குவாரி அமைவதால் அதன் அருகிலுள்ள நிலங்களுக்கோ, நீர் நிலை ஆதாரங்களுக்கோ, பொது பாதைகளுக்கோ எவ்விதமான இடையூறும் கிடையாது.

மேற்படி அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண்.2038-ல் புல எண்.567/2ஏ (0.61.0), பட்டா எண். 1783-வ் புல எண்.202/1ஏ2 1.21.50 ஹெக்டர் பரப்பு நிலத்தில் கல்குவாரி அமைவதால் அருகில் உள்ள நீர்நிலைகள் எதற்கும் பாதிப்பு ஏற்பட வாய்ப்பில்லை. அருகில் உள்ள புறம்போக்கு மற்றும் பட்டா நிலங்களுக்கு பாதிப்பில்லை. அப்பையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் மூலம் "அ1" நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் பொதுமக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மேலும் மனுதாரர் தி/ள்.கனிராஜ் கல்குவாரி உரிமையாளர் கு.கனிராஜ் என்பவர் அப்பையநாயக்கன்பட்டி கிராமத்தில் அரசுக்கு செலுத்த வேண்டிய நிலவரி பாக்கி ஏதுமில்லை. மேலும் குவாரி அமையும் புலம் அப்பையநாயக்கன்பட்டி ஊராட்சி மன்றத்திற்கும் வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்திற்கும் உட்பட்டது.

மேலும் அப்பையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் மற்றும் ஆலங்குளம் குறுவட்ட வருவாய் ஆய்வாளர், பார்வை 3 மற்றும் 4-இல் கண்டவாறு அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண். 1783-ல் புல எண்.202/1ஏ2 1.21.50 ஹெக்டர் பரப்பு நிலத்தில் ஐந்து வருடங்களுக்கு உடைகல், கிராவல் விற்பனை செய்ய மனுதாரர் தி/ள்.கனிராஜ் கல்குவாரி உரிமையாளர் கு.கனிராஜ் என்பவருக்கு அனுமதி வழங்கலாம் என பரிந்துரை அறிக்கை செய்துள்ளனர்.

எனவே, வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், பட்டா எண்.2038-ல் புல எண்.567/2ஏ (0.61.0), பட்டா எண்.1945-ல் புல எண்.567/2பி (0.35.0), பட்டா எண். 1783-ல் புல எண்.202/1ஏ2 1.21.50 ஹெக்டர் பரப்பு நிலத்தில் ஐந்து வருடங்களுக்கு உடைகல், கிராவல் விற்பனை செய்ய உரிமம் மனுதாரர் தி/ள்.கனிராஜ் கல்குவாரி உரிமையாளர் கு.கனிராஜ் என்பவருக்கு அனுமதி வழங்கலாம் என பரிந்துரை செய்கிறேன் என்பதைப் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

இணைப்பு : தொடர்புடைய ஆவணங்கள்.

(ஒ.ம்).எஸ்.இராஜாஹுசைன்,
வட்டாட்சியர்,
வெம்பக்கோட்டை.

-/உத்தரவுப்படி/-

26/12/24

வட்டாட்சியருக்காக.

160

விருதுநகர் மாவட்டம் வெம்பக்கோட்டை வருவாய் வட்டாட்சியரின் புலத்தணிக்கை அறிக்கை

❁❁❁

1.	குத்தகை உரிமம் கோரிய விண்ணப்பம் பெறப்பட்ட தேதி	:	24.02.2021.
2.	அ) புலத்தணிக்கை செய்த நாள்	:	22.05.2021.
	ஆ) புலத்தணிக்கையின் போது உடனிருந்த அலுவலர்கள் பற்றிய விவரம்	:	அப்பையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் மற்றும் ஆலங்குளம் வருவாய் ஆய்வாளர்.
3.	குத்தகை உரிமம் கோரும் விண்ணப்பதாரரின் பெயர் மற்றும் முகவரி	:	திரு.கு.கனிராஜ், த/பெ.குருசாமி, 60சி, இந்திரா நகர், கீழத்திருவேங்கிடபுரம் கிராமம், சங்கரன்கோவில் வட்டம், தென்காசி மாவட்டம்.
4.	குத்தகை உரிமம் கோரும் கனிமங்களின் பெயர்	:	உடைகல், கிராவல்
5.	குத்தகை உரிமம் கோரும் கால அளவு	:	5 (ஐந்து 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	அப்பையநாயக்கன்பட்டி	202/1A2	1.21.50	1.21.50	பட்டா நிலம்
			மொத்தம்	1.21.50	1.21.50	

7.	அ) குத்தகை உரிமம் கோரும் புல எண்கள், விண்ணப்பதாரரின் பெயரில் பட்டா நிலங்களாக இருப்பின் அது பற்றிய விவரம்	:	அப்பையநாயக்கன்பட்டி கிராமம் பட்டா எண்.1783 குருசாமி மகன் கனிராஜ் என்பவரின் பெயரில் 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
			202/1A2	201/3, 201/4	203/1, 203/2	202/1B	202/1A1
9.	குத்தகை உரிமம் கோரும் புல எண்களுக்கு ஏற்கனவே குத்தகை உரிமம் வழங்கப்பட்டிருப்பின் அது பற்றிய விவரம்.	:	கேவி1/33631/2013, நாள்:16.09.2016				

161

10.	குத்தகை உரிமம் கோரும் புல எண்களுக்கு அருகில் பாதுகாப்பு இடைவெளிக்குள் அமைந்துள்ள நிரந்தர அமைப்புகள் ஒதுக்கப்பட வேண்டிய பாதுகாப்பு இடைவெளி பற்றிய விவரம்	:	மேற்படி புல எண்களுக்கு அருகில் உள்ள [illegible] 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 வீட்டுமனைப் பிரிவுகள் மற்றும் புராதனச்சின்னங்கள் 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 வாக்குமூலம் அளித்துள்ளார்.
17.	குத்தகை உரிமம் வழங்குவது தொடர்பாக "அ1" நோட்டீஸ் விளம்பரம் செய்யப்பட்டு பொது மக்களிடமிருந்து ஆட்சேபனை ஏதும் பெறப்பட்டுள்ளதா?	:	"அ1" நோட்டீஸ் விளம்பரம் 05.04.2021 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.

தி/ள்.கனிராஜ் கல்குவாரி உரிமையாளர் திரு.கனிராஜ் என்பவர் விண்ணப்பித்துள்ள புல எண்கள் பட்டா நிலங்கள் என்ற அடிப்படையிலும் அ்பபையநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர் மற்றும் ஆலங்குளம் குறுவட்ட வருவாய் ஆய்வாளர் ஆகியோர் மனுதாரர் நிறுவனத்திற்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்துள்ளதன் அடிப்படையிலும் மனுதாரர்

182

கனிராஜ்

சிறுவனத்தாருக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959, விதி 19 மற்றும் 20-ன் கீழ் கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு ஐந்தாண்டுகளுக்கு 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

163

പുലർച്ചെയും രാത്രി 300 മീറ്റർ ചുറ്റളവിലും
കുടുംബപരമായ ചടങ്ങുകൾ നടത്തുന്നതിനും
മറ്റുമായി കോടതിയിൽ . നിന്നും മറ്റുമായി
300 മീറ്റർ ദൂരപരിധിക്കുള്ളിൽ ഉത്സവങ്ങൾ നടത്തുന്നതിനും
കോടതിയിൽ നിന്നും ആയതിനാൽ 500 മീറ്റർ
ചുറ്റളവിലുള്ള ~~ദേവസ്വം~~ ക്ഷേത്രങ്ങൾ, ദേവസ്വം,
ക്ഷേത്രഭൂമി പരമ്പരാഗതമായി, ദേവസ്വങ്ങൾ, മറ്റുമായി ഏ കുടുംബ
ട്രസ്റ്റികൾക്കായി, മറ്റുമായി ചെയ്തു വരുന്ന കർമ്മങ്ങൾക്കായി
സ്ഥിരം നിലയായി കുടുംബാംഗങ്ങൾക്ക് വേണ്ടി ക്ഷേത്രത്തിനു പരിസരത്തിനായി
നിലവിൽ കിടക്കുന്ന ആധാരത്തിൽ ഉൾപ്പെടുന്ന പുറമ്പോക്ക് സർവ്വേ നമ്പർ 202/1A2 ൽ ഉൾപ്പെട്ട
ഭൂമിയിൽ ~~ഭൂമിയിൽ~~ ഉൾപ്പെടുന്ന ആധാരത്തിൽ പുറമ്പോക്ക് സർവ്വേ നമ്പർ 202/1A1
ഭൂമിയിൽ ~~ഭൂമിയിൽ~~ നിന്നും ഉൾപ്പെടുന്നു - അതിനാൽ ഞങ്ങൾ
ആവശ്യപ്പെടുന്നതിനു മേൽപ്പറഞ്ഞ സർവ്വേ നമ്പറിൽ ഉൾപ്പെടുന്ന ഭൂമി
കൂടി ഞങ്ങൾക്ക് പതിച്ചു നൽകുന്നതിനുള്ള നടപടികൾ ഉണ്ടാകണമെന്ന്
അപേക്ഷിക്കുന്നു. ഇതോടൊപ്പം ഇതുമായി ബന്ധപ്പെട്ട രേഖകൾ ഹാജരാക്കുന്നുണ്ട്
താഴെപ്പറയുന്ന പ്രകാരമാണ് ഞങ്ങൾക്ക് ഭൂമി ആവശ്യമുള്ളത്.

1. പുറമ്പോക്ക് സർവ്വേ നമ്പർ 201/3, 4 ഭാഗം, ദേവസ്വം ക്ഷേത്രത്തിനും ചുറ്റമ്പലത്തിനും
പുറമ്പോക്ക് സർവ്വേ നമ്പർ 202/1.2, ഓഫീസിനും, ഗോപുരത്തിനും ചുറ്റുമതിലിനും ഉൾപ്പെടുന്നു
2. പുറമ്പോക്ക് സർവ്വേ നമ്പർ 202/1B കൽമണ്ഡപത്തിനും തീപ്പുരയ്ക്കും
3. പുറമ്പോക്ക് സർവ്വേ നമ്പർ 202/1A1 ~~ഭൂമിയിൽ~~ ഭൂമിയിൽ നിന്നും ഉൾപ്പെടുന്നു.

ആയതിലേക്ക് രേഖപ്പെടുത്തുന്നത് ക - ഭാഗത്തിനായി ദേവസ്വത്തിന്റെ കൈവശത്തിലുള്ള
പുറമ്പോക്ക് സർവ്വേ നമ്പർ 202/1A2 ന്റെ ഭാഗം. 1.21.5 സെന്റ് - ഉൾപ്പെടെ
നിലവിൽ ഉള്ളതും മറ്റുമായ ചിറപ്പുറം ക്ഷേത്രവും
ഓഫീസും ഗോപുരവും ചുറ്റമ്പലവും നിൽക്കുന്നതും ദിവസേന നിത്യപൂജകൾ നടത്തുന്നതും
പ്രതിഷ്ഠകൾ നിലനിൽക്കുന്നതുമായ ഭൂമിയാണ്

ഒപ്പ്
2-4-2021
REVENUE INSPECTOR
ALANGULAM
65

ക്ഷേത്രഭൂമി

வெம்பக்கோட்டை யூனியம் அப்பையநாயக்கன்பட்டி

கிராம நிர்வாக அலுவலர் வாரிக்கை

பணிந்து அனுப்பப்படுகிறது :

விருதுநகர் மாவட்டம் வெம்பக்கோட்டை

யூனியம் அப்பையநாயக்கன்பட்டி கிராமம் புல எண்கள்

202/1A2 என்ற 1.21.5 ஹெக்டர் நிலத்தில்

உரிமை மற்றும் கிரயத்தில் குடிநீர் உரிமம் பெறுவதற்கு

கோரி தென்காசி மாவட்டம் சங்கரன்கோவில் யூனியம்

திருவேங்கடம் கிராமம் க.எண் 60தி, இந்திரா நகர்

என்ற முகவரியில் வசிக்கும் திரு. கி. கணபதி சுப்பு

என்பவர் விருதுநகர் மாவட்ட ஆட்சித் தலைவர் அவர்களின்

செயலகம் எண் நகக/ நேரி 1/2021/2020 நாள் : 01/03/2021 என்ற

எனது அறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்-

விருதுநகர் மாவட்டம் வெம்பக்கோட்டை

யூனியம் அப்பையநாயக்கன்பட்டி கிராமம் புல எண் 202/1A2

என்ற 1.21.5 ஹெக்டர் நிலமானது கிராம கணக்கில்

பட்டா எண் 1783 ல் கணபதி சுப்பு குடிநீர்

என்பவர் பெயரில் தக்கலாகி உள்ளது. மேற்படி

புல எண் 202/1A2 உள்ள நிலத்தை அரசு சென்ற

புலத்தணிக்கை செய்த போது

M 300 பேர் சார்பாளில் இருப்பு குடிநீர்,

199-3	199-4	199-5
4	5	

பள்ளி மற்றும் கல்லூரிகள் அருகில் : இல்லை.

* 300 மீட்டர் சுற்றளவில் செயல்படும் மற்றும் முடிவடைந்துள்ள குவாரிகள் இல்லை.
* புல எண் 202/1A2 க்கு மேல்புறம் தூரம் ஏற்படவில்லை.
* 500 மீட்டர் சுற்றளவில் சாலைகள், இரயில் கிடப்பு பணிகள், கோவில்கள் மற்றும் புராதன சின்னங்கள், முன்கம்மாகள், நீர்நிலை ஆதாரங்கள், வேறு நிர்ணய அமைப்புகள் எதுவும் இல்லை.
* புல எண் 202/1A2 க்கு அடுத்தும் சிறிய தூரை உள்ளது.
* மேற்படி குவாரி செயல்படுவதில் பொது மக்களுக்கும் அடுக்கேணை ஏதும் இல்லை.
* மேற்படி உரிமம் மற்றும் குவாரி செய்வதால் அருகில் உள்ள நீர்வளங்களுக்கு பாதிப்பு ஏதும் இல்லை என்பது விசாரணையில் தெரியவருகிறது.

எனவே தணிக்கை செய்து, கனிமம் கோரியுள்ள மேற்படி புல எண் 202/1A2 ல் 1.21.5 ஹெக்டேர் நிலத்தில் உரிமம் மற்றும் குவாரி உரிமம் வழங்குவதற்கு பரிந்துரை செய்யப்படுகிறது.

20/04/2021

VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE.
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (DT.)

167

விருதுநகர்

மேல்க்கோபடை அரசு அப்பையநாயக்கன்பட்டி கிராமம் புல எண் 202/1A2 க்கு நான்கு

வடக்கு .. புல எண் 201/3,4 தனி, அப்பையகிருஷ்ணன்

தெற்கு .. புல எண் 203/1,2 ராமர், ராஜேந்திரன்

கிழக்கு .. புல எண் 202/1B தனிநபர்

மேற்கு .. புல எண் 202/1A, தீர்வை ஏற்படாதது

20/04/2021
VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (TK)
VIRUDHUNAGAR (Dt.,)

1/8

இடனிறங்கு

ப. அ

ந.க.தி.2/562/2021

தென்காசி மாவட்டம், சங்கரன்கோவில் வட்டம், கீழநீலிதநல்லூர் கிராமம், கரிசல்குளம் கிராமத்தில் உள்ள சர்வே எண் 600 இல் அருள்மிகு ஸ்ரீ முத்துமாரியம்மன் திருக்கோயிலுக்கு சொந்தமான 2.21.5 ஹெக்டேர் நன்செய் நிலத்தை அருள்மிகு ஸ்ரீ முத்துமாரியம்மன் திருக்கோயில் நிர்வாக அதிகாரி அவர்கள் 2021-2022 ஆம் ஆண்டிற்கு குத்தகைக்கு விடுவதற்கு ஏலம் நடத்தி ஏலம் கோரியதில் ஏலதாரர்கள் ஏலம் கேட்டு வந்த நிலையில் ஏலம் கேட்டு வந்த ஏலதாரர்கள் ஏலத்தை கைவிட்டு சென்றதால் ஏலம் கேட்கப்படாமல் உள்ளது.

அருள்மிகு ஸ்ரீ முத்துமாரியம்மன் திருக்கோயில் நன்செய் நிலத்தை 2021-2022 ஆம் ஆண்டிற்கு குத்தகைக்கு விடுவதற்கு ஏலம் நடத்தி ஏலம் கோரியதில் ஏலதாரர்கள் ஏலம் கேட்டு வந்த நிலையில் ஏலம் கேட்டு வந்த ஏலதாரர்கள் ஏலத்தை கைவிட்டு சென்றதால் ஏலம் கேட்கப்படாமல் உள்ளது.

* 300 மீட்டர் சுற்றளவில் குடியிருப்பு பகுதிகள், பள்ளி கல்லூரிகள் ஏதும் இல்லை.

* 50 மீட்டர் சுற்றளவில் மின்சார கம்பங்கள், தொலைபேசி இணைப்பு பெட்டிகள், மின்கம்பங்கள், கிணறு அமைந்துள்ளதால் ஏதும் இல்லை என தெரிவித்து 2022 ஆம் ஆண்டு சம்பந்தம், கூட்டுவரைபடம், அ பதிவேடு நகல் ஆகியவை தாக்கல் செய்து தொடர்பு வேர் நடவடிக்கைக்கு பரிந்துரை செய்யப்படுகிறது.

17.09.21

தனி வருவாய் ஆய்வாளர்

169

A1 நோட்டீஸ்

அரசு புறம்போக்கு / பட்டா நிலத்தில் கனிம உரிமம் (கல், மண், கிராவல், கங்கா கல், கிரானைட்) செய்து கொள்ளும் விண்ணப்பம் குறித்து ஆட்சேபனை இல்லை என்பதற்கான அறிக்கை

!!!!

இதனால் அறிவிக்கப்படுவது என்னவென்றால் :

கிராமத்தில் வசித்து வரும் தனிராஜ் குருசாமி மகன் / மனைவி ~~மனைவி~~ என்பவர்

புல எண் 203/1,2 க்கு வடக்கிலும்,

புல எண் 201/3,4 க்கு தெற்கிலும்,

புல எண் 202/1A1 க்கு கிழக்கிலும்,

புல எண் 202/1B க்கு மேற்கிலும்,

சர்வே எண் 202/1A2 விஸ்தீரணம் 1.21.5 ஹெக்டர் நிலத்தில் கனிமங்கள் மற்றும் கிராவல் பணி செய்வது தொடர்பாக ஆட்சேபனையுடைய நபர்கள் அதன் விபரத்தை இந்த அறிக்கை பிரசித்தம் செய்யப்படும் தேதியிலிருந்து பதினைந்து தினங்கள் கொண்ட கால அளவிற்குள் மேற்படி கிராமத்தின் கிராம நிர்வாக அலுவலர் மற்றும் வட்டாட்சியரிடம் தெரிவிக்க வேண்டும்.

1) பே. சுப்புராஜ் S/o வேலுச்சாமி தேவர் (என் முன்பாக)

2) A. பொன்னுராஜ் S/o முருகசாமி ஆட்சேபனை எதுவும் இல்லை

05/04/2021

VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VIL...
VEMBAKOTTAI (T.K.)
VIRUDHUNAGAR (Dt.,)

மேற்படி அறிக்கையானது 05/04/2021 தேதியில் தண்டோரா மூலமாகவும், கிராமச் சாவடி மற்றும் முக்கிய இடங்களிலும் பிரசித்தம் செய்யப்பட்டு கையொப்பம் பெறப்பட்டுள்ளது.

VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (Dt.,)

170

தனிராஜ்

ANNEXURE - XIII

தமிழ்நாடு तमिलनाडु TAMIL NADU 90AB 120121

S. குமாரசாமி
முத்திரைத்தாள் விற்பனையாளர்
ஸ்ரீவில்லிபுத்தூர். தமிழ்நாடு.
உரிமம் எண் : 5730 / ஆ 1 / 2010-7

15.02.2021.
ப. கனிராஜ்
மெய்யப்பகோட்டை.

AFFIDAVIT-MINING DUES CLEARANCES

I/We G. Kaniraj, S/o Gurusamy Residing at Door No.60C, Indira Nagar, Keelathiruvenkdam Village, Sankarankovil Taluk, Tenkasi District-627 756 do hereby Solemnly affirm and state as follows,

2. I/We am/are not applying simultaneously for any other quarry lease.

3. There are no other Quarry Lease in any Districts of the State of Tamil Nadu.

NOTARY
GOVT OF INDIA

K. RAMKUMAR M.A., B.L.
ADVOCATE & NOTARY PUBLIC
Regn. No: 1/1442, Govt. of India
SANKARANKOVIL
TIRUNELVELI DISTRICT

கனிராஜ்

DEPONENT.

171

கனிராஜ்

தமிழ்நாடு तमिलनाडु TAMIL NADU 90AB 120123

S. குமாரசாமி
முத்திரைத்தாள் விற்பனையாளர்
ஸ்ரீவில்லிபுத்தூர், தமிழ்நாடு.
உரிமம் எண் : 5730 / ஆ 1 / 2010-7

15.09.2021.
ஜி. கனிராஜ்
மெலம்பகோட்டை.

AFFIDAVIT-QUARRY DETAILS & DUES

I/We G. Kaniraj, S/o Gurusamy Residing at Door No.60C, Indira Nagar, Keelathiruvenkdam Village, Sankarankovil Taluk, Tenkasi District-627 756 do hereby Solemnly affirm and state as follows,

2. There are No other Quarry Lease in any Districts of the State of Tamil Nadu.
3. And I/We do not have any Mining dues to be paid to government of Tamil Nadu.

K. RAM... ADVOCATE ... Regn. No. ...

ஜி. கனிராஜ்
DEPONENT.

ஜி. கனிராஜ்

தமிழ்நாடு तमिलनाडु TAMIL NADU

90AB 120122

Sb

S. குமாரசாமி
முத்திரைத்தாள் விற்பனையாளர்
ஸ்ரீவில்லிபுத்தூர். தமிழ்நாடு.
உரிமம் எண்: 5730/ஆ1/2010-7

15.09.2021.
ப. கனிராஜ்
கொம்பகோட்டை

AFFIDAVIT-INCOME TAX CLEARANCE

I/We G. Kaniraj, S/o Gurusamy Residing at Door No.60C, Indira Nagar, Keelathiruvenkdam Village, Sankarankovil Taluk, Tenkasi District-627 756 do hereby Solemnly affirm and state as follows,

I/We am a Income Tax Assessee under Income Tax Act 1961 and my/our permanent Account Number is CHYPK9799K and there is no Income Tax Dues pending against us.

This Affidavit Filed in lieu of Income Tax Clearance Certificate.

NOTARY

K.RAMKUMAR M.A.,B.L.
ADVOCATE

கனிராஜ்

DEPONENT.

172

ANNEXURE - XIV

†

PRINCE EXPLOSIVES

7/71,Nadu Street,ELAYIRAMPAMMAI-62[illegible]
VIRUDHUNAGAR (Dist)
Explosive Magazine at Sankarapandiyapuram *Lic.No: E/SC/TN/22/343(E5998)*
Cell:*9443961120*

Date: 18/08/2021

TO

G.Kaniraj
S/o Gurusamy
Indira nagar
Thiruvengadam
Sankarankovil
Pin-627719

Ref: Your letter Dates
Sub: Regarding blasting using explosives in your proposed quarry

Sir,

We are having explosives license in from 22 Holding No: E/SC/TN/22/343 (E599ŧ Situated in Sankarapandiapuram village, Sattur Taluk. Our office functions at Address: M/ Prince Explosives,No.7/71, Nadu street, Elayirampannai Post, Sattur (via).Virudhunaga District.

We are enacting 2 explosives van for transporting detonators and class 2 separately fc our work site and well experienced and licensed blaster and shot firer for safe blasting wor since 13-08-2021 to 12-08-2026 where as the owner of the Quarry having License to b granted to survey No 202/1A2 and (K.V 1/158/2021) hectares the Survey Number are wit in Appainayakkan patti village, Vembakottai taluk , Virudhunagar District.

Thank you

For Prince Explosives,

J. Ramin

174

अनुज्ञप्ति प्ररुप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 का अनुसूची 4 के भाग I के अनुच्छेद 3(क) से (घ) दखए।)
(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 रख
Licence to possess : (c) for use,explosives of class 1, 2,3,4,5,6 or 7 in a magazine

अनुज्ञप्ति सं. (Licence No.) : E/SC/TN/22/343(E5998)
वार्षिक फीस रुपए (Annual Fee Rs): 6200/-

1. Licence is hereby granted to

M/s Prince Explosives (अधिभोगी / Occupier : J.Prince Nimaldoss), 7/71, Nadu Street, Elayirampannai Post, Sattur (via), Town/Village - Virudhunagar, District-VIRUDHUNAGAR, State-Tamil Nadu, Pincode - 626201

को अनुज्ञप्ति अनुदत्त की जाती है।

2. अनुज्ञप्तिधारी की प्रास्थिति | Status of licensee : Partnership Firm

3. अनुज्ञप्ति निम्नलिखित प्रयोजनों के लिए विधिमान्य है।
Licence is valid only for the following purpose. : possess for use of Nitrate Mixture, Safety Fuse, Detonating Fuse, Electric and/or Ordinary Detonators, के उपयोग के लिए

4. अनुज्ञप्ति विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।
Licence is valid for the following kinds and quantity of explosives: – (क) (a)

क्र Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2.0	0	1500 Kg.
2.	Safety Fuse	6.1	0	20000 Mtrs
3.	Detonating Fuse	6.2	0	10000 Mtrs
4.	Electric and/or Ordinary Detonators	6.3	0	44000 Nos.

(ख) किसी एक कलैंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञप्ति के लिए
(b) Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)] : : 17 times as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञप्त परिसर की पुष्टि होती है।
The licensed premises shall conform to the following drawing(s): . : रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/343(E5998)
दिनांक (Dated) 30/12/2004

6. अनुज्ञप्ति परिसर निम्नलिखित पते पर स्थित हैं। The licensed premises are situated at following address:
Survey No(s). 179/2, ग्राम (Town/Village) : Sankarapandiapuram Village,Sattur Taluk, District
जिला (District) : VIRUDHUNAGAR राज्य (State) : Tamil Nadu पुलिस थाना (Police Station) : Elayirampannai
दूरभाष (Phone) ई. मेल (E-Mail) पिनकोड (Pincode)
फैक्स (Fax)

7. अनुज्ञप्ति परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं।
The licensed premises consist of following facilities. : A Main Magazine Room, a lobby and a Detonator store.

8. अनुज्ञप्ति समय – समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधो, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबन्धों 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, 2008 framed there under and the conditions, additional conditions and the following Annexures.

1. उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
2. अनुज्ञप्ति प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञप्ति की शर्तें और अतिरिक्त शर्तें।
Conditions and Additional Conditions of this licence signed by the licensing authority.
3. दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञप्ति तारीख 31 मार्च 2008 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2008.

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपवर्णित इस अनुज्ञप्ति की शर्तों का अधिक्रमण करने या यदि अनुज्ञप्त परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहृत 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 - 30/12/2004

Sd/-
संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives
South Circle, Chennai

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 06/01/2010
- Change in Authorized Signatory/Occupier/Partners/Directors dated : 13/10/2010
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 20/01/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 12/08/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 20/08/2014

नवीनीकरण के पृष्ठांकन के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख Date of Renewal	समाप्ति की तारीख Date of Expiry	अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प Signature of licensing authority and stamp
30/09/2020	31/03/2025	Jt. Chief Controller of Explosives, South Circle, Chennai

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरूपयोग विधि के अधीन गंभीर दांडिक अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

175

Form DE-2
(See rule 113 of the Explosives Rules, 2008)
(Distance Form to be attached to the licence)

Safety distances required to be kept clear around magazine for high explosives or fire works or factory licence number E/SC/TN/22/343(E5998) in form LE-3 granted to M/s Prince Explosives, 7/71, Nadu Street, Elayirampannai Post, Sattur(via), Tamil Nadu-.

	Type of Structure(s)	Safety distances meters	
	Inside Safety Distances(ISD)	**M**	**UM**
1	Room or Workshop used in Connection with the Magazine	29	44
2	Any other Explosives Magazine or store House or Factory of the Applicant		
3	Magazine Office		
	Middle Safety Distances(MSD)		
4	Magazine Keeper's or Chowkidar's Dwelling house		
5	Railway including Minerals and Private Railways		
6	Canal (in active use) or other navigable water		
7	Dock or Pier or Jetty		
8	Public Highway or Public Road	106	
9	Private Road which is PRINCIPAL means of access to a Temple, Mosque, Church, Gurudwara or other places of worships, Hospital, College, School or Factory		
10	River Embankment or Sea Embankment or Public Well		
11	Reservoir or Bounded tank/rope way		
12	Windmillor or Solar panel for Power Generation		
	Outside Safety Distances(OSD)		
13	Dwelling House		
14	Govt. and Public Building		
15	Temple, Mosque, Church or Gurudwara or other Places of Worships		
16	Shops, Market place, Public recreation and Sports Ground, College, School, Hospital, Theater, Cinema or other Building where the public are accustomed to assemble		
17	Factory		
18	Buildings or Works used for the Storage in Bulk of Petroleum, Sprit, gas, or other inflammable or hazardous substances	211	
19	Building or Works used for Storage and Manufacture of Explosives or of articles which contain Explosives		
20	Aerodrome		
21	Furnace, Kiln or Chimney		
22	Quarry or mine pit head		
23	Power House or Electric Substation		
24	Wireless Station		
25	Warehouse or other Storage Building		
26	Any other Protected works		
	Overhead Electric lines		
27	Electric Power over head Transmission Lines above 440V	90	
28	Electric Power over head Transmission Lines upto 440V	15	

The Date : 30/12/2004

For Joint Chief Controller of Explosives
South Circle, Chennai

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 06/01/2010
- Change in Authorized Signatory/Occupier/Partners/Directors dated : 13/10/2010
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 20/01/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 12/08/2011

176

अनुसूचि प्रपत्र एल.ई. -10 | Form LE-10
शॉट फायर कर्ता प्रमाण-पत्र | Shot Firer's Certificate
(अनुसूची IV के भाग I का अनुच्छेद 10 देखें | See article 10 of Part 1 of Schedule IV)
[विस्फोटक नियम, 2008 का नियम 107(5) देखें | see rule 107(5) of Explosives Rules, 2008]

01 SEP 2021

(खान अधिनियम,1952 के अधीन न आने वाले क्षेत्र में विस्फोट करने के लिए सक्षमता प्रमाणपत्र)
(Certificate of competency to carry out blasting of explosives in area not coming under t

क्रमांक | No.: E/SS/TN/30/306(E77559)

प्रमाणित किया जाता है कि श्री P. Manikannan S/o Perumal,
जिनका जन्म 01/06/1981 को हुआ था, जो D.no.2/53 Appanampatti Muthandiahpuram Post,Sattur Tk, VIRUDHUNAGAR, Tamil Nadu - 626201 के निवासी है ने, जिनने उक्त तारीख को आयोजित शॉट फायर की परीक्षा तारीख को उत्तीर्ण कर ली है और वह विस्फोटक अधिनियम, 1884 और उसके अधीन विरचित नियमों के उपबंधों के अधीन रहते हुए खान अधिनियम, 1952 के अधीन आनेवाले खानों से अन्यथा क्षेत्र में नीचे यथा उल्लिखित विस्फोटकों का उपयोग करते हुए विस्फोट प्रचालन करने के लिए प्राधिकृत है :

This is to certify that Shri P. Manikannan S/o Perumal,
born on 01/06/1981 ,resident of D.no.2/53 Appanampatti Muthandiahpuram Post,Sattur Tk, VIRUDHUNAGAR, Tamil Nadu - 626201 passed the shotfirer's examination held on conducted by Sivakasi 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

प्राधिकृत किये जाने के अधीन वर्ग, प्रकार और प्रकम :
वर्ग: (ख), श्रेणी: सामान्य जमीन के ऊपर, जमीन के ऊपर ब्लास्टिंग आपरेशन

Authorised class, category and type of blasting :
Class : (B), Category : General aboveground, All phases of aboveground blasting operation

[नियम 107 का उप-नियम (5) का स्पष्टीकरण देखें | See explanation of sub-rule (5) of rule 107]

यह प्रमाणपत्र 03/09/2018 (जारी करने की तारीख से पांच वर्ष) तक विधिमान्य होगा |
This certificate shall remain valid till 03/09/2018 (five years from the date of issue)

यह प्रमाण-पत्र अधिनियम या उसके अधीन विरचित नियमों अथवा इस प्रमाण-पत्र की शर्तों का कोई अतिक्रमण करने पर या यदि आवेदक द्वारा अनुरोध प्रपत्र में दी गई सूचना में कोई फर्क या विचलन होता है तो निलंबित या अभिरक्षित किया जाएगा।
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.

स्थान | Place : शिवाकाशी | Sivakasi
दिनांक | Date: 03/09/2013

Sd/-
उप मुख्य विस्फोटक नियंत्रक | Dy. Chief Controller of Explosives
शिवकाशी | Sivakasi

Amendments :
- Change in Postal Address/Purpose/Attached to Magazine dated : 01/01/2014

पुनर्विधिमान्यकरण के लिए पृष्ठांकन
Endorsement for revalidation

पुनर्विधिमान्यकरण की तारीख Date of Revalidation	समाप्ति की तिथि Date of Expiry	अनुज्ञप्ति प्राधिकारी के हस्ताक्षर Signature of licensing authority
15/10/2018	03/09/2023	Chief Controller of Explosives, South Circle, Chennai

सांविधिक चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग किये जाने पर दांडिक अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

177

शर्तें | CONDITIONS

संख्या | No.: E/SS/TN/30/306(E77559)

1. यह परमिट,परमिट धारक को ब्लास्टिंग करने के लिए तब तक अधिकृत करता है जब तक कि वह विस्फोटक नियम, 2008 के अंतर्गत फॉर्म एलई-3 में वैध अनुज्ञप्ति धारक (अनुज्ञप्ति संख्या : F/SC/TN/22/343 (E5998)). M/s Prince Explosives के नौकरी/अनुबंध के अधिन काम कर रहा है।
This permit authorizes the permit holder to conduct blasting so long as he is working under the employment/contract of M/s Prince Explosives holding valid licence (Licence No. E/SC/TN/22/343 (E5998)) in Form LE-3 of Explosives Rules, 2008.
2. विस्फोटक सामग्री प्राप्त करने, उसके स्वामित्व परिवहन भंडारण, उठाई घराई और उपयोग करने के लिए सभी स्थानीय विधियों और विनियमों का अनुपालन किया जाएगा।
All local laws and regulations applicable for obtaining, owning, transporting, storing, handling and using explosive materials shall be followed.
3. विस्फोटक सामग्री को अप्राधिकृत कब्जे से संरक्षित किया जाएगा तथा उसे परित्यक्त नहीं किया जाएगा।
Explosive materials shall be protected form unauthorised possession and shall not be abandoned.
4. विस्फोटक सामग्री का उपयोग केवल ऐसे अनुभवी व्यक्तियों द्वारा किया जाएगा जो उसमें अंतर्ग्रस्त परिसंकट को जानते हों और जिनके पास अपेक्षित अनुज्ञापत्र हो।
Explosive materials shall be used only by experienced persons who are familiar with the hazards involved and who hold all required permits.
5. लदाई और फायरिंग या उसका पर्यवेक्षण केवल ऐसे व्यक्ति द्वारा किया जाएगा जिसके पास समुचित शाट फायरकर्ता प्रमाणपत्र और विस्फोट के लिए अनुज्ञापत्र हों।
Loading and firing shall be performed or supervised only by a person possessing an appropriate shot firer certificate and permit to blast.
6. प्रशिक्षार्थी सहायक और अन्य व्यक्ति, जिनके पास अपेक्षित शाट फायरकर्ता प्रमाणपत्र या अनुज्ञापत्र नहीं है, केवल ऐसे अनुज्ञापत्र धारण करने वाले व्यक्तियों के पर्यवेक्षण के अधीन काम करेंगे।
Trainees helpers and other persons who do not hold the required shot firer certificate or permits shall work only under the supervision of persons holding such permits.
7. ऐसे स्थान पर कोई विस्फोटक सामग्री अवस्थित या भंडारित नहीं की जाएगी जहां अत्यधिक गर्मी या उसके प्रभाव से उनका विस्फोट हो सकता है।
No explosive materials shall be located or stored where they may be exposed to flame excessive heat sparks or impact.
8. ऐसे स्थापन के 15 मीटर के भीतर धूम्रपान करने की अनुमति नहीं दी जाएगी जहां विस्फोटकों को लाया किया गया है या उनका उपयोग किया जा रहा है।
No smoking shall be permitted within 15 metre of any location where explosive are being handled or used.
9. कोई व्यक्ति ऐसे स्थान के 15 मीटर के भीतर कोई माचिस, बिजली या अन्य प्रकार की अग्नि या ज्वाला नही जलाएगा, जहां विस्फोटकों को लाया किए गए है या उनका उपयोग किया जा रहा है। तथापि इस अपेक्षा से सुरक्षित फ्यूज जलाने के लिए उपयुक्त युक्तियों को छूट प्राप्त होगी।
No person with in 15 metres of any location where explosive are being handled or used shall carry any matches open light or other fire or flame. However, suitable devices for lighting safety fuse are exempted form this requirement.
10. चालक, शराब, स्थापक या अन्य खतरनाक औषधियों से प्रभावित किसी व्यक्ति को विस्फोटक सामग्री के उपयोग की अनुज्ञा नहीं होगी।
No person under the influence of intoxicating liquors narcotics or other dangerous drugs shall be allowed to handle explosive materials.
11. भंडारण मैगजीन और विस्फोट स्थान के बीच परिवहन के दौरान विस्फोटक सामग्री बंद अनुमोदित पात्र या पैकेज में रखे जाएंगे।
Explosive materials shall be kept in close approved containers or packages while being transported between the storage magazine and the blasting site.
12. विस्फोट करने का शाट फायरकर्ता प्रमाणपत्र और अनुज्ञापनधारक द्वारा प्राप्त की गई और फायर की गई या इससे निबटाई गई सभी विस्फोटक सामग्री का दैनिक अभिलेख रखेगा। ऐसा अभिलेख पांच वर्ष तक प्रतिधारित किया जाएगा
A holder of a shot firer certificate and Permit to Blast shall keep a daily record of all explosive materials received and fired or otherwise disposed of by the permit holder. Such records shall be retained for five years.
13. शॉट फायरकर्ता और कर्मचारी आपातकाल के दौरान बरती जानेवाली प्रक्रिया से अवगत होंगे।
The shot firer and the employee shall be conversant with procedure to be taken during the emergency.
14. शॉट फायरकर्ता प्रमाण-पत्र का धारक जो सुरक्षा के हित में नियंत्रक द्वारा समय-समय पर दिए गए उन सभी या किन्हीं निदेशों का पालन करेगा।
The holder of the shot firer certificate shall comply with all or any of the directions as may be given by the Controller from time to time in the interest of safety.
15. अग्नि या विस्फोटक के कारण होने वाली दुर्घटना और विस्फोटकों की हानि,कमी या चोरी के बारे में निकटतम पुलिस स्टेशन और अनुज्ञापन प्राधिकारी तथा अनुज्ञापन प्राधिकारी के स्थानीय कार्यालय में तुरंत रिपोर्ट की जाएगी।
Accidents by fire or explosion and losses, shortage or theft of explosives shall be immediately reported to the nearest police station and the Controller of Explosives having jurisdiction over the area.

उप मुख्य विस्फोटक नियंत्रक | Dy. Chief Controller of Explosives
शिवकाशी | Sivakasi

178

ANNEXURE -XV

விருதுநகர் மாவட்ட ஆட்சித் தலைவர் அவர்களின் செயல்முறை ஆணைகள்

முன்னிலை : திரு. க.ராகுபதி, இ.ஆ.ப.

ந.க.கேவி 1 /4[illegible]/2009 நாள் 21.04.2009

பொருள் : கனிமங்களும் குவாரிகளும் - திருநெல்வேலி மாவட்டம் - சங்கரன்கோவில் வட்டம், திருவேங்கடம்- கிராமத்தில் வசித்து வரும் குருசாமி மகன் கனிராஜ் என்பவர் விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், பட்டாப் புல எண் 202/1A2 (0.96.0) பரப்பில் ஐந்து வருடங்களுக்குக் கல்குவாரி குத்தகை உரிமம் வழங்கக் கேட்டுள்ளது - தொடர்பாக

பார்வை: 1. திரு.கனிராஜ், திருவேங்கடம், சங்கரன்கோவில் வட்டம், திருநெல்வேலி மாவட்டம், என்பவரது மனு நாள் 16.2.2009.

2 தனித்துணை வட்டாட்சியர் மற்றும் தனி வருவாய் ஆய்வாளர் (கனிமம்) புலத்தணிக்கை அறிக்கை நாள்: 7.4.2009.

3 உதவிப் புவியியலாளர் (கனிமம்) புலத்தணிக்கை அறிக்கை நாள்: 7.4.2009.

ஆணை

திருநெல்வேலி மாவட்டம், சங்கரன்கோவில் வட்டம், திருவேங்கடம் கிராமத்தில் வசித்து வரும் குருசாமி மகன் கனிராஜ் என்பவர் விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புல எண் 201/1A2 பரப்பு 1.21.5 ஹெக்டேர் பட்டா நிலத்தில் ஐந்து வருடங்களுக்கு 1959-ம் வருட தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண் 19 ன்படி கல்குவாரி செய்ய குத்தகை உரிமம் வழங்கக் கோரி பார்வை 1-ல் கண்டுள்ள விண்ணப்பத்தில் விண்ணப்பம் செய்துள்ளார்.

2). விண்ணப்பதாரர் குத்தகை உரிமம் கோரியது தொடர்பாக சம்பந்தப்பட்ட புலங்களை 28.3.2009ம் தேதி அன்று இவ்வலுவலகத் தனித்துணை வட்டாட்சியர் (கனிமம்), தனி வருவாய் ஆய்வாளர் (கனிமம்) மற்றும் உதவிப் புவியியலாளர் ஆகியோர் பார்வையிட்டு சமர்ப்பித்துள்ள பார்வை 4-மற்றும் 5 ல் கண்டுள்ள ஆய்வறிக்கையில், விண்ணப்பிக்கப்பட்ட புலங்கள் அப்பையநாயக்கன்பட்டி கிராம கணக்கில் கீழ்க்கண்டவாறு உள்ளதாகவும்,

வ.எண்.	புல எண்	மொத்த விஸ்தீரணம்	பாகுபாடு	பட்டா எண் பட்டாதாரர் பெயர்
1	202/1A2	1.21.5	புன்செய்	1783 குருசாமி மகன் கனிராஜ்
	மொத்தம்	1.21.5		

விண்ணப்பிக்கப்பட்ட மேற்படி புலம் விண்ணப்பதாரர் பெயரிலேயே கிராம கணக்கில் தாக்கலாகியுள்ளதால், மேற்படி புலம் விண்ணப்பதாரருக்குப் பாத்தியப்பட்டது எனவும், மேற்படி புலங்களில் கடினப்பாறைகளால் ஆன சார்னகைட் வகை பாறைகள் உள்ளதாகவும், மேற்படி பாறைகளில் சில பகுதிகள் சிதைவடைந்துள்ளதால் மேற்படிப் பாறைகளில் ஏற்றுமதி தரம் வாய்ந்த மெருகேற்றவோ, அழகுபடுத்தவோ தகுந்த கற்கள் எடுக்க இயலாது என்றும், விண்ணப்பிக்கப்பட்ட புலத்தின் வடக்கே 42 மீட்டர் தூரத்தில் கிழமேலாக புல எண் 225ல் வைப்பாறு ஆற்றுப் புறம்போக்கு உள்ளதாகவும், தெற்குப்பகுதியில் புலத்தின் அருகில் கிழமேலாக வண்டிப்பாதை செல்வதாகவும், விண்ணப்பிக்கப்பட்ட புலத்தின் வடக்கே புல எண் 201/3 ல் வடகிழக்கிலிருந்து தென்மேற்காக ஓடை செல்வதாகவும், விண்ணப்பிக்கப்பட்ட புலத்தின் மேற்பகுதியில் 1 ½ வரை பொக்குபாறையாகவும், அதன் கீழ் கருங்கல் உள்ளதாகவும், மேற்படி புலத்தின் மேற்கே புல எண் 202/1A1 தோவை ஏற்பட்ட தரிசு நிலம் உள்ளதாகவும், மேலும்,

179

மனுதார் கோரும் புலத்தில் விலைமதிப்பு மிக்க மரங்கள், கட்டடங்கள், மயானம், புராதனச்சின்னங்கள், மற்றும் உயர் மின்னழுத்த மின்கம்பிகள் ஏதும் செல்லவில்லை எனவும், விண்ணப்பிக்கப்பட்டுள்ள புலத்திலிருந்து 300 மீட்டர் சுற்றளவிற்குள் குடியிருப்புகள் ஏதும் இல்லை எனவும், விண்ணப்பிக்கப்பட்ட புலத்தின் வடக்கே கிழமேலாகச் செல்லும் வைப்பாறு ஆற்றுப்புறம்போக்கு தவிர 50 மீட்டர் தூரத்திற்குள் அணைக்கட்டு, ரயில்வே தண்டவாளம் ஏதும் இல்லை எனவும், அறிக்கை செய்து திருநெல்வேலி மாவட்டம், சங்கரன்கோவில் வட்டம், திருவேங்கடம் கிராமத்தில் வசித்து வரும் குருசாமி மகன் கனிராஜ் என்பவருக்கு, விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புல எணகள் 202/1A2 பரப்பு 1.21.5 ஹெக்டேர் பட்டா நிலத்தில், வடக்கே 42 மீட்டர் தூரத்தில் கிழமேலாக புல எண் 225ல் வைப்பாறு ஆற்றுப் புறம்போக்கு நிலத்திற்கு 50 மீட்டர் பாதுகாப்பு தூரம் கருதி, மேற்படி புறம்போக்கு நிலம் 42 மீட்டர் தூரத்தில் உள்ளதால் விண்ணப்பிக்கபட்ட புலத்தில் 8 மீட்டர் தூரமாக 0.18.0 ஹெக்டேரும், மேற்குப் பகுதியில் உள்ள தீர்வை ஏற்பட்ட தரிசு நிலத்திற்கு 10 மீட்டர் பாதுகாப்பு தூரமாக 0.07.0 ஹெக்டேரும், தெற்குப் பகுதியில் கிழமேலாக செல்லும் வண்டிப்பாதைக்கு பாதுகாப்பு தூரமாக 0.00.5 ஹெக்டேரும் ஆக மொத்தம் 0.25.5 ஹெக்டேர் விடுத்து மீதமுள்ள 0.96.0ஹெக்டேர் பரப்பில் அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்புத்தூரம் விடுத்து ஐந்து வருடங்களுக்கு 1959ம் வருட தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண் 19 மற்றும் 20-ன்படி கல்குவாரி செய்ய குத்தகை உரிமம் வழங்க பரிந்துரை செய்துள்ளனர்.

எனவே திருநெல்வேலி மாவட்டம், சங்கரன்கோவில் வட்டம், திருவேங்கடம் கிராமத்தில் வசித்து வரும் குருசாமி மகன் கனிராஜ் என்பவரது விண்ணப்பத்தினை, தனித்துணை வட்டாட்சியர் (கனிமம்), தனி வருவாய் ஆய்வாளர் (கனிமம்) மற்றும் உதவி புவியியலாளர் (கனிமம்) ஆகியோரின் புலத்தணிக்கை அறிக்கை மற்றும் நிபந்தனைகளின் அடிப்படையில் ஏற்று, விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பைய்நாயக்கன்பட்டி கிராமம் புல எணகள் 202/1A2 பரப்பு 1.21.5 ஹெக்டேர் பட்டா நிலத்தில் வடக்கே 42 மீட்டர் தூரத்தில் கிழமேலாக புல எண் 225ல் வைப்பாறு ஆற்றுப் புறம்போக்கு நிலத்திற்கு 50 மீட்டர் பாதுகாப்பு தூரம் கருதி, மேற்படி புறம்போக்கு நிலம் 42 மீட்டர் தூரத்தில் உள்ளதால் விண்ணப்பிக்கபட்ட புலத்தில் 8 மீட்டர் தூரமாக 0.18.0 ஹெக்டேரும், மேற்குப் பகுதியில் உள்ள தீர்வை ஏற்பட்ட தரிசு நிலத்திற்கு 10 மீட்டர் பாதுகாப்பு தூரமாக 0.07.0 ஹெக்டேரும், தெற்குப் பகுதியில் கிழமேலாக செல்லும் வண்டிப்பாதைக்கு பாதுகாப்பு தூரமாக 0.00.5 ஹெக்டேரும் ஆக மொத்தம் 0.25.5 ஹெக்டேர் விடுத்து மீதமுள்ள பரப்பு 0.96.0 ஹெக்டேர் பட்டா நிலத்தில் 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்: 19 மற்றும் 20-ன் படி சாதாரண உடைகல் மற்றும் ஜல்லி கற்கள் மாவட்ட ஆட்சியருடன் குத்தகை ஒப்பந்தப் பத்திரம் நிறைவேற்றும் நாளிலிருந்து ஐந்து வருடங்களுக்கு எடுத்துக் கொள்ள கல்குவாரி குத்தகை உரிமம் வழங்கி உத்தரவிடப்படுகிறது.

நிபந்தனைகள்

1. குத்தகைதாரர் இந்த உத்தரவு கிடைக்கப் பெற்றவுடன் 5 ஆண்டுகளுக்கான பரப்பு வரித்தொகை ரூ. 480/-ஐ செலான் மூலம் வங்கியில் செலுத்தி அசல் செலானையும், காப்புத் தொகை ரூ.5000-ஐ கீழ்க்குறிப்பிட்டுள்ள கணக்குத் தலைப்பில் செலுத்தி அசல் செலானையும் ஆஜர்படுத்த வேண்டும்.

   கணக்குத் தலைப்பு

   8443 Civil Deposits
   103 Security Deposits
   D.P.Code 8443-00-103-AA-0005

2. மேலும், 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் அனுபந்தம் 4ல் கண்ட நஷனாவில் உரிய முத்திரைத்தாளில் குத்தகை ஒப்பந்த பத்திரம்

நிறைவெற்றி அதனை அவரது சொந்த செலவில் பதிவு செய்து கொடுக்க வேண்டும்.

3. சரியான முறையில் குறிப்பிட்ட பழவத்தில் கணக்குகள் பராமரிக்க வெண்டும். தினந்தோறும் வெட்ட எடுத்துக் கொண்டு செல்லப்பட்ட கனிம அளவைக் குறித்த பதிவேடுகள் வைத்திருக்க வேண்டும். அவைகளை தணிக்கை செய்யும் அதிகாரிகளுக்கு தவறாமல் காண்பிக்க வேண்டும்.

4. சொந்த செலவிலேயே குறிப்பிட்ட படிவத்தில் நடைச்சீட்டு அச்சிட்டு நடைச்சீட்டில் உதவி இயக்குநர் (புவியியல் மற்றும் சரங்கத்துறை) விருதுநகர் அலுவலக முத்திரையுடன் கையொப்பமும் பெறவேண்டும். குவாரியில் இருந்து கனிமம் ஏற்றிச் டிசல்லும் ஒவ்டிவாரு வாகனத்திற்கும் கண்டிப்பாக நடைச்சீட்டு வழங்கப்படவேண்டும். சோதனையிபோது நடைச்சீட்டு இல்லையென்று கண்டுபிடிக்கப்பட்டால் வாகனங்கள் பறிமுதல் செய்யப்படுவதோடு குவாரி குத்தகைதாரர் மீது நடவடிக்கை எடுக்கப்படும்.
5. குவாரி செய்ய அனுமதிக்கப்பட்ட குறிப்பிட்ட புல எண் மற்றும் குறிப்பிட்ட விஸ்தீரத்திற்குள் தான் குவாரி செய்ய வெண்டும்.

6. குத்தகைதாரர் குவாரியை வேறு யாருக்கும் உள் குத்தகைக்கு விடலாகாது.

7. ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகளுக்கு அவர் கட்டுப்பட்டு நடக்க வேண்டும்.

8. பிரதிமாதமும் 5ம் தேதிக்குள் முந்தைய மாதத்தில் குவாரி செய்து எடுக்கப்பட்ட கனிம அளவு வெளியில் அனுப்பப்பட்ட கனிம அளவு குவாரியில் வேலை செய்யும் கூலி ஆட்களின் எண்ணிக்கை முதலிய விபரங்களை விருதுநகர் மாவட்ட புவியியலி மற்றும் சுரங்கத்துறை உதவி இயக்குநருக்கு அனுப்பி வைக்க வேண்டும்.

9. குத்தகை ஒப்பந்தப் பத்திரம் நிறைவெற்றப்பட்ட பின்பு தான் குவாரியில் செய்ய தொடங்க வேண்டும்.

10. பின்னால் அரசுக்குச் செலுத்த பாக்கித் தொகை ஏதெனும் செலுத்த வேண்டி வந்தால் அத்தொகையை உடனடியாக செலுத்தி விட வேண்டும்.

11. குத்தகை பற்றிய முபு விபரங்கள் அடங்கிய தகவல் பலகை ஒன்று குவாரியில் கண்டிப்பாக வைத்திருக்க வேண்டும்.

12. சொந்த செலவிலும், முயற்சியாலும் குவாரிக்குச் செல்லும் சாலைகள் மற்றும் பாதைகள் மற்றும் வசதிகள் அமைத்துக் கொள்ள வேண்டும்

13. தன் சொந்த செலவிலேயே குவாரியில் குத்தகை வழங்கபட்பட்ட உரிமம்தினை வட்ட அளவர் மூலம் அளந்து நான்கு எல்லைக்கும் கல்தூண்கள் நட்டு அமைத்துப் பராமரித்து வர வேண்டும்.

14. குவாரிக்குரிய நடைச்சீட்டுகளை கண்டிப்பாக குவாரியில் இருந்துதான் வழங்க வேண்டும். நடைச்சீட்டுக்ககளின் அடிக்கட்டைகளை குவாரியில் வைத்திருக்க வேண்டும்.

15. குவாரிக்கு அருகில் வீடுகள் சாலைகள் பாதைகள் மின்சாரக்கம்பிகள் மின்சார டிராண்ஸ்பார்மர்கள் கோவில் ஒடை குழநீர் ஆதாரங்கள் மற்றும் சரித்திரப் புகழ் பெற்ற சின்னங்கள் போன்றவை அமைந்திருந்தால் அவைகளுக்கு சேதம் ஏற்படாதவாறு தேவையான அளவு பாதுகாப்பு இடைவெளி விட்டு குவாரி செய்ய வேண்டும்.

16. அனுமதி டிபறாமல் குவாரியில் வெடிமருந்துகள் பயன்படுத்தக்கூடாது. வெடிப்பொருட்கள் சட்டம் கண்டிப்பாக கடைப்பிடிக்கப்பட வேண்டும். குறைந்த அழுத்தமுள்ள வெடிமருந்துகளை மட்டுமே பயன்படுத்தி குவாரிப் பணி செய்ய வேண்டும்.

17. குவாரியில் வேலை செய்யும் தொழிலாளர்களினி நலன் பேணப்படவேண்டும். குழந்தை தொழிலாளர்களை குவாரிப் பணியில் ஈடுபடுத்தக்கூடாது.

18. அனுமதிதாரர் புராதனச் சின்னங்களுக்கோ அரசு சொத்துக்களுக்கோ எவ்வித இடையூறும் செய்யக் கூடாது.

19. புலத்தின் அருகாமையில் உள்ள பட்டா நிலங்களுக்கு எவ்வித சேதாரமுமின்றி குவாரி செய்ய வேண்டும்

20. அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு தூரம் விடுத்து குவாரிப் பணி செய்ய வேண்டும்.

மாவட்ட ஆட்சியருக்காக,
விருதுநகர்

பெறுநர்
திரு.கு.கனிராஜ்,
த-பெ குருசாமி ,
இந்திரா நகர்,
திருவேங்கடம்,
சங்கரன்கோவில் வட்டம்,
திருநெல்வேலி மாவட்டம்,

நகல் வருவாய் கோட்டாட்சியர், சிவகாசி.
நகல் வட்டாட்சியர், சிவகாசி
நகல் கிராம நிர்வாக அலுவலர், அப்பையநாயக்கன்பட்டி
நகல் ஊராட்சி மன்றத் தலைவர், அப்பையநாயக்கன்பட்டி
நகல் கேவி 1 இருக்கைக்கு

182

ANNEXURE-XVI

விருதுநகர் மாவட்ட ஆட்சித் தலைவர் அவர்களின் செயல்முறை ஆணைகள்
முன்னிலை: திரு. அ. சிவஞானம், இ.ஆ.ப.,

கேவி1/33631/2013

நாள்: 16.09.2016

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம் - சிவகாசி வட்டம் - அப்பையநாயக்கன்பட்டி கிராமம் - பட்டா புல எண்கள். 202/1A2 -ல் மொத்தம் 1.21.5 ஹெக்டேர் நிலங்களில் ஐந்து வருடங்களுக்கு கற்குவாரி உரிமம் வழங்கி உத்தர்விடுதல் - தொடர்பாக.

பார்வை:

1. திரு.கு.கனிராஜ், த/பெ.குருசாமி, கீழதிருவேங்கடம் கிராமம், சங்கரன்கோவில் வட்டம், திருநெல்வேலி மாவட்டம் என்பவரது விண்ணப்பம் நாள். 08.08.2013.
2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/33631/2013-1,2 நாள். 08.08.2013.
3. வெம்பக்கோட்டை ஊராட்சி ஒன்றிய ஆணையாளர் கடித மூ.மு.எண் அ2/2725/2013, நாள். 21.08.2013.
4. சிவகாசி வருவாய் வட்டாட்சியரின் கடித ந.க. எண். ஆ4/7896/2014, நாள். 23.07.2014.
5. உதவிப்புவியியலாளர் (கனிமம்) மற்றும் தனித்துணை வட்டாட்சியர் (கனிமம்) மற்றும் தனிவருவாய் ஆய்வாளர்(கனிமம்) ஆகியோரின் கூட்டுப்புலத்தணிக்கை அறிக்கை நாள். 09.08.2014.
6. இவ்வலுவலக குறிப்பாணை எண். ந.க.கேவி 1/33631/2013, நாள்: 19-12-2014.
7. மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையம், சென்னை கடித எண். SEIAA-TN/F.No.3260/ EC/1(a)/ 2629/2015, நாள்: 05.01.2016.
8. 24-01-2016 நாளிட்ட தினச்சூரியன் மற்றும் தமிழ்சுடர் ஆகிய இரு நாளிதழ்களில் வெளியிடப்பட்ட பொது அறிவிப்பு.
9. மாவட்ட சுற்றுச்சூழல் பொறியாளர், மாசுக்கட்டுப்பாட்டு வாரியம், விருதுநகர் அவர்களின் ஒப்புதல் உத்தரவு எண்: 160114268808 மற்றும் 160124268808, நாள்: 12.02.2016.
10. சாத்தூர் வருவாய் கோட்டாட்சியர் அவர்களின் கடித எண் மூ.மு.அ2/1636/2016, நாள்: 16.06.2016.
11. தொடர்புடைய ஆவணங்கள்

*****

ஆணை:

திருநெல்வேலி மாவட்டம், சங்கரன்கோவில் வட்டம், கீழதிருவேங்கடம் கிராமத்தைச் சேர்ந்த திரு.கு.கனிராஜ், த/பெ.குருசாமி என்பவர் விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண். 202/1A2-ல் மொத்தம் 1.21.5 ஹெக்டேர் நிலங்களில் ஐந்து வருடங்களுக்கு சாதாரணகற்கள், ஜல்லி மற்றும் கிராவல் எடுத்துக்கொள்ள பார்வை 1-ல் காணும் மனுவில் கற்குவாரி உரிமம் வழங்கக் கோரியுள்ளார்.

183

கு.கனிராஜ்

மேற்படி அனுமதி வழங்குவது தொடர்பாக விண்ணப்பதாரா பெயரிலோ, அவரது குடும்ப உறுப்பினர்கள் பெயரிலோ அரசுக்கு செலுத்த வேண்டிய பாக்கித்தொகை ஏதேனும் நிலுவையில் உள்ளதா? என்பது குறித்து அறிக்கை சமர்ப்பிக்கும்படி சிவகாசி வட்டாட்சியர் / வெம்பக்கோட்டை ஊராட்சி ஒன்றிய ஆணையாளர் ஆகியோரிடமும், விண்ணப்பிக்கப்பட்ட புலங்களை புலத்தணிக்கை செய்து அறிக்கை சமர்ப்பிக்குமாறு சிவகாசி வருவாய் கோட்டாட்சியரிடமும் பார்வை 2-ல் காணும் இவ்வலுவலகக் கடிதங்களின்படி கேட்டுக்கொள்ளப்பட்டது.

பார்வை 3-ல் காணும் வெம்பக்கோட்டை ஊராட்சி ஒன்றிய ஆணையாளரின் கடிதத்தில், விண்ணப்பதாரர் திரு.கு.கனிராஜ் என்பவர் பெயரிலோ அவரது குடும்பத்தில் உள்ள பிற நபர்கள் பெயரிலோ ஊராட்சிக்கு செலுத்த வேண்டிய தொகை எதுவும் நிலுவையில் "இல்லை" என்று அறிக்கை செய்துள்ளார்.

பார்வை 4-ல் காணும் சிவகாசி வட்டாட்சியரின் கடிதத்தில், மேற்படி புலங்களை 22.07.2014 அன்று புலத்தணிக்கை செய்யப்பட்டது என்றும், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 202/1A2-ல் மொத்தம் 1.21.5 ஹெக்டேர் பரப்பில் பட்டா எண். 1783-ல் குருசாமி மகன் கனிராஜ் என்பவர் பெயரில் கிராமக் கணக்கில் தாக்கலாகி உள்ளது என்றும். மேற்படி புல எண். 202/1A2-க்கு கிழக்கு பக்கம் புல எண். 202/1B அமைந்துள்ளது என்றும், மேற்படி புல எண். 202/1B-ல் மனுதார் கு.கனிராஜ் என்பவர் ஆக்கிரமிப்பு செய்து கல்குவாரி பணி செய்துள்ளார். இது சம்பந்தமாக புகார் தெரிவிக்கப்பட்டு, கனிமம் மற்றும் சுரங்கத்துறையால் தணிக்கை செய்யப்பட்டு அபராதம் ரூ.1,09,800/- வரை விதிக்கப்பட்டது, மேற்படி அபராதத் தொகை ரூ.1,09.800/-ஐ 12.05.2014 அன்று சிவகாசி பாரத வங்கியில் செலுத்தியுள்ளார். மேற்படி புல எண். 202/1A2-க்கு அருகாமையில் அமைந்துள்ள புல எண். 202/2, 203/4-ன் வழியாக கிராம வரை படத்தின்படி வண்டிப்பாதை செல்கிறது என்றும், மேற்படி புலங்களுக்கு நான்குமால் விபரம் பின்வருமாறு உள்ளது என தெரிவித்துள்ளனர்.

வடக்கு	:	புல எண். 201/1,2
தெற்கு	:	புல எண். 203/1, புல எண். 203/2
கிழக்கு	:	புல எண். 202/1B
மேற்கு	:	புல எண். 202/1A1 (தீர்வை ஏற்பட்ட தரிசு)

மேற்படி நிலங்களை பார்வையிட்டதில், 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதும் இல்லை என்றும், 50 மீட்டர் சுற்றளவில் சாலைகள், வண்டிப்பாதை, கோவில்கள் மற்றும் புராதனச் சின்னங்கள், மின்கம்பிகள், இருப்புப்பாதைகள், நீர்நிலை ஆதாரங்கள், வேறு நிரந்தர அமைப்புகள் ஏதும் இல்லை. மேற்படி புல எண். 202/1A2-க்கு அருகாமையில் புல எண். 201/3 0.16.0 புறம்போக்கு ஓடை உள்ளது என்றும், மேற்படி ஓடையில் நீர் வரத்து இல்லாமல் வறண்டு உள்ளது என்றும், எனவே, அதற்குரிய பாதுகாப்பு தூரம் கடைப்பிடித்தும், கற்குவாரி பணி செய்திட உரிமம் கோரும் நிலத்தின் அருகில் உள்ள பட்டா நிலங்களுக்கு போதிய பாதுகாப்பு தூரம் விடுத்தும் 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம விதிகளின்படி சாதாரண உடைகல் எடுத்து கல்குவாரி பணி செய்ய அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

பார்வை 5-ல் காணும் உதவிப்புவியியலாளர் (கனிமம்) மற்றும் தனித்துணை வட்டாட்சியர் (கனிமம்) மற்றும் தனிவருவாய் ஆய்வாளர் (கனிமம்) ஆகியோரின் கூட்டுப்புலத்தணிக்கை அறிக்கையில், மேற்படி புலம் 09.08.2014 அன்று புலத்தணிக்கை மேற்கொள்ளப்பட்டது என்றும், மேற்படி கற்குவாரி குத்தகை

உரிமம் வழங்கக் கோரி விண்ணப்பித்துள்ள அப்பையநாயக்கன்பட்டி கிராமம் பட்டா எண். 1783-ன்படி புல எண். 202/1A2 விண்ணப்பதாரர் திரு.கு.கனிராஜ் என்பவர் பெயரில் தாக்கலாகியுள்ளது என்றும், மேற்கண்ட புலத்தில் ஏற்கனவே திரு.கு.கனிராஜ் என்பவருக்கு கேவி1/409/09-ன்படி 25.04.2009 முதல் 24.04.2014 வரை கற்குவாரி குத்தகை உரிமம் வழங்கப்பட்டு உள்ளது என்றும், இப்புலத்தின் மேற்குப்பகுதியில் 25 மீட்டர் நீளம், 12 மீட்டர் அகலம், 3 மீட்டர் ஆழம் என்ற அளவிலும், கிழக்குப்பகுதியில் 30 மீட்டர் நீளம், 25 மீட்டர் அகலம், 4.5 மீட்டர் ஆழம் என்ற அளவில் குவாரி செய்யப்பட்ட பகுதியாக காணப்படுகிறது என்றும், விண்ணப்பதாரர் அனுமதியில்லாத பகுதியில் குவாரிப்பணி மேற்கொண்டதற்காக அபராத நடவடிக்கை மேற்கொள்ளப்பட்டு அபராதத் தொகையாக ரூ.1,09,800/- வசூலிக்கப்பட்டுள்ளது எனத் தெரிவித்துள்ளனர்.

மேற்படி விண்ணப்பிக்கப்பட்ட புலத்தின் நான்குமால் விபரம் :

வ.எண்.	புல எண். உட்பிரிவு எண்.	பரப்பளவு	வடக்கு	தெற்கு	கிழக்கு	மேற்கு
1.	202/1A2	1.21.5	201	203	200	202/1A1

மேலும், விண்ணப்பித்துள்ள புல எண்ணைச் சுற்றி 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதும் இல்லை என்றும், புல எண். 202/2, 203/4-ல் வண்டிப்பாதை செல்கிறது என்றும், புல எண். 201/3-ல் சிறிய அளவிலான ஓடை செல்கிறது. இவற்றைத் தவிர வேறு எந்த நிரந்தர அமைப்புகள் ஏதும் இல்லை எனத் தெரிவித்து, மனுதாரர் திரு.கு.கனிராஜ், த/பெ.குருசாமி என்பவருக்கு, சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண். 202/1A2-ல் மொத்தம் 1.21.5 ஹெக்டேர் நிலங்களில் ஐந்து வருடங்களுக்கு சாதாரணகற்கள், ஜல்லி மற்றும் கிராவல் எடுத்துக்கொள்ள கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டும், 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண். 19 மற்றும் 20-ன்படி கற்குவாரி குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

1. புல எண். 202/2, 203/4-ல் அமைந்துள்ள வண்டிப்பாதைக்கு போதிய பாதுகாப்பு இடைவெளி தூரமாக 10 மீட்டர் தூரமும், அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் இடைவெளிதூரமும் கடைப்பிடித்து குவாரிப்பணி மேற்கொள்ளவேண்டும்.

பார்வை 6-ல் காணும் இவ்வலுவலக கடிதத்தில் விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண். 202/1A2-ல் மொத்தம் 1.21.5ஆக மொத்தம் 1.39.0 ஹெக்டேர் பரப்பளவு நிலங்களில், ஐந்து வருடங்களுக்கு உடைகல் / ஜல்லி, கிராவல் குவாரி உரிமம் வழங்க சுரங்கத்திட்ட அறிக்கை ஒப்புதலுக்கும் மற்றும் மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் பரிந்துரை பெற்று வரும்படி விண்ணப்பதாரரை கேட்டுக்கொள்ளப்பட்டது.

பார்வை 7-ல் காணும் மாநில சுற்றுப்புறச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் உத்தரவில், மேற்படி விண்ணப்பதாரருக்கு விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண். 202/1A2-ல் மொத்தம் 1.21.5ஆக மொத்தம் 1.39.0 ஹெக்டேர் நிலப்பரப்பில் ஐந்து வருடங்களுக்கு கற்குவாரி உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

பார்வை 8ல் காணும் 24.01.2016 நாளிட்ட தினச்சூரியன் மற்றும் தமிழ்சுடர் ஆகிய இரு நாளிதழ்களில் மேற்படி புல எண்களில் கற்குவாரிப்பணி மேற்கொள்வது தொடர்பாக விண்ணப்பதாரர் பொது அறிவிப்பு செய்துள்ளார்.

பார்வை 9-ல் காணும் விருதுநகர் மாவட்ட மாசுக்கட்டுப்பாட்டு வாரிய சுற்றுச்சூழல் பொறியாளர் அவர்களின் ஒப்புதல் உத்தரவில், விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண். 202/1A2-ல் 1.21.5 ஹெக்டேரில் மேற்குறிப்பிட்ட விண்ணப்பதாரர் கற்குவாரிப்பணி மேற்கொள்ள நிபந்தனைகள் விதித்து அனுமதி வழங்க பரிந்துரை செய்துள்ளார்.

பார்வை 10ல் காணும் சாத்தூர் வருவாய் கோட்டாட்சியரின் அறிக்கையில், 02.06.2016 அன்று புலத்தணிக்கை மேற்கொள்ளப்பட்டது என்றும், மேற்படி மனுதாரர் கற்குவாரி உரிமம் வழங்கக்கோரும் நிலம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புல எண் 202/1A2-ல் பரப்பு 1.21.5 ஹெக்டேர் பட்டா எண் 1783-ல் திரு. கு. கனிராஜ், த.பெ. குருசாமி என்பவர் பெயரில் தாக்கலாகியுள்ளது என்றும், மேற்படி புல எண்ணிற்கு நான்குமால் விவரம் பின்வருமாறு உள்ளது என்றும் தெரிவித்துள்ளார்.

புலஎண் 202/1A2-க்கு நான்குமால்:

வடக்கு	-	புல எண் 201
தெற்கு	-	புல எண் 203 திரு. ராஜேந்திரன்
கிழக்கு	-	புல எண்கள; 200/3. 199
மேற்கு	-	புல எண் 202/1A1, புறம்போக்கு நிலம்

மேற்படி புல எண்ணில் கற்குவாரி செய்யப்படும் இடத்திலிருந்து சுமார் 300 மீட்டர் சுற்றளவில் குடியிருப்பு பகுதிகள் ஏதுமில்லை என்றும், கற்குவாரி உரிமம் கோரும் புலத்திற்கு அருகில் தீர்வை ஏற்பட்ட தரிசு புறம்போக்கு சர்வே எண் 202/1A1- உள்ளது என்றும், மேலும் சர்வே எண் 202/1A1,1A2 ஒரே வரப்பாக உள்ளது என்றும், மேலும் சர்வே எண் 202/2-ல் அணுகுபாதை கல் குவாரியிலிருந்து கற்களை எடுத்துச் செல்ல பாதை வசதி உள்ளது என்றும், மேலும், இரயில் இருப்புப்பாதைகள், வேறு நிரந்தர அமைப்புகள் ஏதுமில்லை என்றும், உயர் மற்றும் தாழ் மின் அழுத்த கம்பிகள், புராதானச் சின்னங்கள், கோவில்கள் புறம்போக்கு நிலங்கள், ஓடை ஏதுமில்லை என்றும், 60மீட்டர் தொலைவில் நீர்நிலை ஆதாரம்(ஆறு) உள்ளது என்றும், மேலும் சர்வே எண் 206-ல் 72மீட்டர் தொலைவிலும், சர்வே எண் 207/2B-ல் 200 மீட்டர் தொலைவில் செயல்படும் குவாரிகள் உள்ளன என்றும், சர்வே எண் 203/2-ல் செயல்படாத குவாரிகள் அமைந்துள்ளது என்றும், மேற்படி புலங்களில் குவாரி செய்தால் அருகிலுள்ள விவசாய நிலங்களுக்கு எந்தவொரு பாதிப்பும் ஏற்படாது என்றும், புலத்தணிக்கை செய்த போது பொது மக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை என்றும், மேற்படி நிலத்தில் கற்குவாரி பணி செய்வதனால் புறம்போக்கு மற்றும் பட்டா நிலத்தில் உள்ள ஓடைகளுக்கு பாதிப்பு ஏற்பட வாய்ப்பு இல்லை என்றும், திருநெல்வேலி மாவட்டம், சங்கரன்கோவில் வட்டம், கீழத்திருவெங்கடம் கிராமத்தைச்சேர்ந்த திரு.கு. கனிராஜ், த.பெ. குருசாமி என்பவர் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண் 202/1A12-ல் 1.21.5 ஹெக்டேர் பரப்பில் ஐந்து வருடங்களுக்கு சாதாரண கற்கள், ஜல்லி மற்றும் கிராவல் எடுத்துக்கொள்ள கற்குவாரி உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

எனவே, சிவகாசி வருவாய் வட்டாட்சியர், சென்னை மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையம், விருதுநகர் மாசுக்கட்டுப்பாட்டு வாரியம்

184

8. ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகளுக்கு அவர் கட்டுப்பட்டு நடக்க வேண்டும்.

9. பிரதிமாதமும் 5ம் தேதிக்குள் முந்தைய மாதத்தில் குவாரி செய்து எடுக்கப்பட்ட கனிம அளவு வெளியில் அனுப்பப்பட்ட கனிம அளவு குவாரியில் வேலை செய்யவும் கூலி ஆட்களின் எண்ணிக்கை முதலிய விபரங்களை விருதுநகர் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநருக்கு அனுப்பி வைக்க வேண்டும்

10. குத்தகை ஒப்பந்தப் பத்திரம் நிறைவேற்றப்பட்ட பின்புதான் குவாரியில் வேலை செய்யத் தொடங்க வேண்டும்.

11. குத்தகை பற்றிய முழு விபரங்கள் அடங்கிய தகவல் பலகை ஒன்று குவாரியில் கண்டிப்பாக வைத்திருக்க வேண்டும்.

12. சொந்த செலவிலும் முயற்சியாலும் குவாரிக்குச் செல்லும் சாலைகள் மற்றும் பாதைகள் மற்றும் வசதிகள் அமைத்துக் கொள்ள வேண்டும்.

13. தன் சொந்த செலவிலேயே குவாரியில் குத்தகை வழங்கப்பட்ட விஸ்தீரணத்தை வட்ட அளவர் மூலம் அளந்து நான்கு எல்லைக்கும் கல்தூண்கள் நட்டு அமைத்துப் பராமரித்து வர வேண்டும்.

14. குவாரிக்குரிய நடைச்சீட்டுகளை கண்டிப்பாக குவாரியில் இருந்துதான் வழங்க வேண்டும். நடைச்சீட்டுக்களின் அடிக்கட்டைகளை குவாரியில் வைத்திருக்க வேண்டும்.

15. குவாரிக்கு அருகில் வீடுகள், சாலைகள், பாதைகள், மின்சாரக்கம்பிகள், மின்சார டிரான்ஸ்பார்மர்கள் கோவில், ஓடை, குடிநீர் ஆதாரங்கள் மற்றும் சரித்திரப் புகழ் பெற்ற ஸ்தலங்கள் போன்றவை அமைந்திருந்தால் அவைகளுக்கு சேதம் ஏற்படாதவாறு தேவையான அளவு பாதுகாப்பு இடைவெளி விட்டு குவாரி செய்ய வேண்டும்.

16. அனுமதி பெறாமல் குவாரியில் வெடிமருந்துகள் பயன்படுத்தக்கூடாது. வெடிபொருட்கள் சட்டம் கண்டிப்பாக கடைப்பிடிக்கப்பட வேண்டும். குறைந்த அழுத்தமுள்ள வெடிமருந்துகளை பயன்படுத்தி குவாரிப் பணி செய்ய வேண்டும்.

17. குவாரியில் வேலை செய்யும் தொழிலாளர்களின் நலன் பேணப்படவேண்டும். குழந்தைத் தொழிலாளர்களை குவாரிப் பணியில் ஈடுபடுத்தக்கூடாது.

18. அனுமதிதாரர் புராதனச் சின்னங்களுக்கோ, அரசாங்க சொத்துக்களுக்கோ எவ்வித சேதமும் இன்றி குவாரி செய்ய வேண்டும். அருகாமையில் உள்ள பட்டா நிலங்களுக்கு எவ்வித சேதமுமின்றி குவாரி செய்ய வேண்டும்.

19. அருகில் அமைந்துள்ள விவசாய நிலங்களுக்கு எவ்வித பாதிப்பும் இல்லாத வகையில் குவாரிப்பணி மேற்கொள்ள வேண்டும்.

20. மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையம், சென்னை கடித எண். SEIAA-TN/F.No.3260/ EC/1(a)/ 2629/2015, நாள்: 05.01.2016. தெரிவிக்கப்பட்டுள்ள அனைத்து நிபந்தனைகளையும் தவறாது கடைப்பிடிக்க வேண்டும்.

187

மற்றும் உதவிபுவியியலாளர்(கனிமம்), தனி வருவாய் ஆய்வாளர்(கனிமம்) மற்றும் தனித்துணை வட்டாட்சியர் (கனிமம்) மற்றும் சாத்தூர் வருவாய் கோட்டாட்சியர் ஆகியோர்களின் பரிந்துரையினை ஏற்றும், நிபந்தனைகளுக்குட்பட்டும், மனுதாரர் திரு.கு.கனிராஜ், என்பவருக்கு, விருதுநகர் மாவட்டம், சிவகாசி வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் பட்டா புல எண். 202/1A2-ல் மொத்தம் 1.21.5 ஹெக்டேர் பரப்பளவு நிலங்களில் 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19, 20 மற்றும் 22-ன்படி சாதாரணகற்கள், ஜல்லி மற்றும் கிராவலை மாவட்ட ஆட்சியருடன் குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றும் நாளிலிருந்து ஐந்து வருடங்களுக்கு எடுத்துக்கொள்ள கற்குவாரி குத்தகை உரிமம் வழங்கி உத்தரவிடப்படுகிறது.

நிபந்தனைகள்

1. குத்தகைதாரர் இந்த உத்தரவு கிடைக்கப் பெற்றவுடன் 5ஆண்டுகளுக்கான பரப்புவரித் தொகை ரூ. 700/-ஐ சலான் மூலம் வங்கியில் செலுத்தி அசல் சலானையும், காப்புத் தொகை ரூ. 5000/-ஐ கீழ்க்குறிப்பிட்டுள்ள கணக்குத் தலைப்பில் செலுத்தி அசல் செலானையும் ஆஜர்படுத்த வேண்டும்.

   காப்புத்தொகை செலுத்தவேண்டிய கணக்குத் தலைப்பு

   8443 Civil Deposits
   103 Security Deposits
   D.P.Code 8443-00-103-AA-010005

2. மேலும், 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் அனுபந்தம் 4ல் கண்ட நமுனாவில் ரூ. 19,850/- முத்திரைத்தாளில் குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றி அதனை அவரது சொந்த செலவில் பதிவு செய்து கொடுக்க வேண்டும்

3. சரியான முறையில் குறிப்பிட்ட படிவத்தில் கணக்குகள் பராமரிக்க வேண்டும் தினந்தோறும் வெட்டி எடுத்துக் கொண்டு செல்லப்பட்ட கனிம அளவைக் குறித்த பதிவேடுகள் வைத்திருக்க வேண்டும். அவைகளை தணிக்கை செய்யும் அதிகாரிகளுக்கு தவறாமல் காண்பிக்க வேண்டும்.

4. சொந்த செலவிலேயே குறிப்பிட்ட படிவத்தில் நடைச்சீட்டு அச்சிட்டு நடைச்சீட்டில் துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) விருதுநகர் அலுவலக முத்திரையுடன் கையொப்பமும் பெறவேண்டும். குவாரியில் இருந்து கனிமம் ஏற்றிச் செல்லும் ஒவ்வொரு வாகனத்திற்கும் நடைச்சீட்டு வழங்கப்பட வேண்டும். சோதனையின் போது நடைச்சீட்டு இல்லையென்று கண்டுபிடிக்கப்பட்டால் வாகனங்கள் பறிமுதல் செய்யப்படுவதோடு குவாரி குத்தகைதாரர் மீது நடவடிக்கையும் எடுக்கப்படும்.

5. குவாரி செய்ய அனுமதிக்கப்பட்ட குறிப்பிட்ட புல எண் மற்றும் குறிப்பிட்ட விஸ்தீரணத்திற்குள் தான் குவாரி செய்ய வேண்டும்

6. குவாரிப்பணி மேற்கொள்வதற்கு முன்பாக குவாரி குத்தகை அனுமதி வழங்கப்பட்ட பகுதியில் நான்கு பக்கங்களிலும் மூன்று மீட்டர் இடைவெளியில் இரண்டு மீட்டர் உயரத்திற்கும் குறையாமலும் கான்கீரிட் கலவை அமைத்து கல் தூண்கள் அமைத்தும் கம்பிவேலி அமைத்தும் பராமரிக்கவேண்டும்.

7. குத்தகைதாரர் குவாரியை வேறு யாருக்கும் உள் குத்தகைக்கு விடலாகாது.

21. மாவட்ட சுற்றுச்சூழல் பொறியாளர், மாசுக்கட்டுப்பாட்டு வாரியம், விருதுநகர் அவர்களின் ஒப்புதல் உத்தரவு எண். 160114268808 மற்றும் 160124268808, நாள்: 12.02.2016.. தெரிவிக்கப்பட்டுள்ள அனைத்து நிபந்தனைகளையும் தவறாது கடைப்பிடிக்க வேண்டும்.

22. சுரங்கத் திட்டத்தில் (Mining Plan) குறிப்பிட்டுள்ள விபரங்களின்படி குவாரிப்பணி மேற்கொள்ள வேண்டும்.

23. காலை 7 மணி முதல் மாலை 5 மணி வரை குவாரிப் பணி மேற்கொள்ள வேண்டும். மேலும் இரவு நேரங்களில் கற்களை ஏற்றக்கூடாது.

24. அருகிலுள்ள புல எண்களுக்கு 7.5 மீட்டர் பாதுகாப்புத் தூரம் கடைப்பிடித்து குவாரிப்பணி மேற்கொள்ள வேண்டும்.

25. புல எண். 202/2, 203/4-ல் அமைந்துள்ள வண்டிப்பாதைக்கு போதிய பாதுகாப்பு இடைவெளி தூரமாக 10 மீட்டர் தூரமும், அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் இடைவெளிதூரமும் கடைப்பிடித்து குவாரிப்பணி மேற்கொள்ளவேண்டும்.

(ஒம்)அ. சிவஞானம்
மாவட்ட ஆட்சியர்,
விருதுநகர்.

ஆணைப்படி / அனுப்பப்படுகிறது

மாவட்ட ஆட்சியருக்காக,
விருதுநகர்.

19.9.16

பெறுநர்
திரு.கு.கனிராஜ்,
த/பெ.குருசாமி,
கீழதிருவேங்கடம் கிராமம்,
சங்கரன்கோவில் வட்டம்,
திருநெல்வேலி மாவட்டம்.

நகல் உதவி ஆட்சியர், சிவகாசி.
நகல் வட்டாட்சியர், சிவகாசி.
நகல் கிராம நிர்வாக அலுவலர், அப்பையநாயக்கன்பட்டி
நகல் ஊராட்சி மன்றத் தலைவர், அப்பையநாயக்கன்பட்டி
நகல் கேவி1 இருக்கைக்கு

18

ANNEXURE-XVII

STATE LEVEL ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY – TAMIL NADU

Dr. S. KALYANASUNDARAM ,I.F.S.(Retd.)
CHAIRMAN

सत्यमेव जयते

3rd Floor, Panagal Maaligai,
No.1 Jeenis Road, Saidapet,
Chennai-15.
Phone No.044-24359974
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.3260/EC/1(a)/2629/2015 dated: 05.01.2016

To
Thiru G. Kaniraj
No C-60, Indira Nagar
Keezha Thiruvengadam
Thiruvengadam Post
Sankarankoil Taluk
Tirunelveli - 627 719

Sir,

Sub: SEIAA-TN – Proposed **Rough Stone Blue Metal & Gravel** quarry located at S.F.No 202/1A2, Appaiyanaickanpatti Village,Sivakasi Taluk, Virudhunagar District- issue of Environmental Clearance – Reg.

Ref:
1. Your Application for Environmental Clearance dt: 24.12.2014
2. Minutes of the 70th SEAC held on 27.11.2015 & 28.11.2015
3. Minutes of the SEIAA meeting held on 05.01.2016

Details of Minor Mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining environmental clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

1	**Name of Project Proponent and address**	Thiru G. Kaniraj No C-60, Indira Nagar Keezha Thiruvengadam Thiruvengadam Post Sankarankoil Taluk Tirunelveli - 627 719
2	**Location of the Proposed Activity**	
	Survey Number	202/1A2
	Latitude and Longitude	09°17'47"N 77°41'41"E
	Village	Appaiyanaickanpatti
	Taluk	Sivakasi

CHAIRMAN
SEIAA-TN

190

	District	Virudhunagar
3	**Proposed Activity**	
	i. Minor mineral	Rough Stone Blue Metal & Gravel
	ii. Mining Lease Area	1.21.5 Ha
	iii. Approved quantity	34833 cu.m of Rough stone & 16404 cu.m of Topsoil and Gravel
	iv. Depth of Mining	6 m
	v. Type of mining	Opencast Manual Method
	vi. Category(B1/B2)	B2
	vii. Precise area communication	Rc.No. KV 1/33631/2013 Dated: 22.08.2014
	viii. Mining plan approval	Deputy Director Rc.No. KV 1/33631/2013 Dated: 19.12.2014
	ix. Mining lease period	5 Years
4	**Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-**	Not attracted. Affidavit furnished
5	**Man Power requirement per day:**	10 Employees
6	**Utilities**	
	i. Source of Water :	Water supplier/Borewell
	ii. Quantity of Water Requirement in KLD:	
	a. Domestic b. Industrial c. Green Belt & Dust Suppression	0.55KLD } 0.85KLD
	iii. Power Requirement: a. Domestic Purpose b. Industrial Purpose	 TNEB 350 Liters of HSD
7	**Cost** i. Project Cost ii. EMP Cost	 Rs.92.74 Lakhs Rs.1.80 Lakhs
8	**Public Consultation:-**	Not required as per O.M. dated 24.12.2013 of MoEF, GoI.
9	**Date of Appraisal by SEAC:-** **Agenda No:**	27.11.2015 & 28.11.2015 70-7
10	**Date of Review/Discussion by SEIAA and the Remarks:-** The proposal was placed before the SEIAA in its **154th** Meeting held on **05.01.2016** and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Rough Stone Blue Metal & Gravel to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
11	**Validity:The Environmental Clearance will be coterminous with the mine lease period or limited to a maximum period of 5 Years from the date of issue whichever is earlier.**	

CHAIRMAN
SEIAA-TN

11 SEP 2021

Conditions to be Complied before commencing mining operations:

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
   - I. The project has been accorded Environmental Clearance.
   - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
   - iii. Environmental Clearance may also be seen on the website of the SEIAA.
   - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

CHAIRMAN
SEIAA-TN

14. Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
19. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
20. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
21. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009.
22. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
    i. Roads shall be graded to mitigate the dust emission.
    ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
23. The following measures are to be implemented to reduce Noise Pollution
    i. Proper and regular maintenance of vehicles and other equipment
    ii. Limiting time exposure of workers to excessive noise.
    iii. The workers employed shall be provided with protection equipment and earmuffs etc.
    iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

CHAIRMAN
SEIAA-TN

24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
28. The following measures are to be adopted to control erosion of dumps:-
    i. Retention/ toe walls shall be provided at the foot of the dumps.
    ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that

CHAIRMAN
SEIAA-TN

194

the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.

34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
36. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.
37. It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site
38. Ground water quality monitoring should be conducted once in 3 Months
39. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
40. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI.
41. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI..
42. Bunds to be provided at the boundary of the project site.
43. Ground water quality monitoring should be conducted once in 3 Months
44. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
45. At least 10 Neem trees should be planted around the boundary of the quarry site.
46. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
47. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
48. The Project Proponent shall provide solar lighting system to the nearby villages
49. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
50. Rainwater shall be pumped out Via Settling Tank only
51. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
52. As per MoEF&CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarring operation, if the project site is located within 10KM from National Park and Sanctuaries.
53. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.
54. Safety equipments to be provided to all the employees.
55. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai

CHAIRMAN
SEIAA-TN

01 SEP 2021

General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.

CHAIRMAN
SEIAA-TN

196

16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA,TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957,National Commission for protection of Child Right Rules,2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied
23. Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

CHAIRMAN
SEIAA-TN

Copy to:

1. The Secretary, Ministry of Mines, Government of India, ShastriBhawan, New Delhi.
2. The Principal Secretary, Environment and Forests Department, Government of Tamil Nadu, Tamil Nadu.
3. The Additional Chief Secretary, Industries Department, Government of Tamil Nadu, 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, PariveshBhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai,Guindy, Chennai-32
7. The District Collector, Virudhunagar District
8. The Commissioner of Geology and Mines,Guindy,Chennai-32
9. EI Division, Ministry of Environment & Forests, ParyavaranBhawan, New Delhi.
10. Spare.

ANNEXURE-XVIII

TAMILNADU POLLUTION CONTROL BOARD

01 SEP 2021

CONSENT ORDER NO. 160114268808 DATED: 12/02/2016.

PROCEEDINGS NO.F.0472VDR/RS/DEE/TNPCB/VDR/W/2016 DATED: 12/02/2016

SUB: TNPC Board-Consent for Establishment-M/S KANIRAJ ROUGH STONE BLUE METAL & GRAVEL QUARRY S.F No. 202/1A2, APPAYANAICKANPATTI Village, Sivakasi Taluk. Virudhunagar District - for the establishment or take steps to establish the industry under Section 25 of the Water (Prevention and control of Pollution)Act,1974, as amended in 1988(Central Act 6 of 1974)- Issued- Reg.

REF: 1. APPLICATION NO-3322517 dtd 05/12/2015.
2.FIR NO-F0472VDR/R/S/AEE/VDR/2015 DTD 11/02/2016
3.Minutes of the 41st DCCC Meeting dated 11/02/2016(Item NO-41-06)

Consent to establish or take steps to establish is hereby granted under Section 25 of the Water (Prevention and control of Pollution) Act,1974, as amended in 1988(Central Act 6 of 1974) (hereinafter referred to as 'The Act') and the Rules and Orders made there under to

The Proprietor,
KANIRAJ ROUGH STONE BLUE METAL & GRAVEL QUARRY

Authorizing occupier to establish or take steps to establish the industry in the site mentioned below:

S.F. No.202/1A2,
APPAYANAICKANPATTI Village,
Sivakasi Taluk,
Virudhunagar District.

This Consent to establish is valid upto **February 11, 2018**, or till the industry obtains consent to operate under Section 25 of the Water (Prevention and control of Pollution) Act, 1974, as amended in 1988 whichever is earlier subject to special and general conditions enclosed.

23/2/16

District Environmental Engineer,
Tamilnadu Pollution Control Board,
VIRUDHUNAGAR

23/2/16

To
The Proprietor,M/s.KANIRAJ ROUGH STONE BLUE METAL & GRAVEL QUARRY,
S.NO.202/1A2, APPAYANAICKENPATTI VILLAGE,
Pin: 626204

Copy to:

1.The Commissioner, VEMBAKKOTTAI-Panchayat Union, Sivakasi Taluk, Virudhunagar District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Maduri for favour of kind information.
4. File

198

SPECIAL CONDITIONS

1. This consent to establish is valid for establishing the facility for the manufacture of product.. byproducts (Col. 2) at the rate (Col 3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	Quarrying of Rough Stone upto a depth of 6 m (Latitude 09°17'47"N & Longitude 77°41'41" E)	34833	(Cu.m over a period of 5 years)
2.	Quarrying of Top soil & Gravel upto a depth of 6 m (Latitude 09°17'47"N & Longitude 77°41'41" E)	16404	(Cu.m over a period of 5 years)

2. The unit shall provide Sewage Treatment Plant and /or Effluent Treatment Plant as indicated below.

a	**Sewage Treatment Plant:**		
	Treatment status: Septic Tank and SP/DT		
SL. No.	Name of the Treatment Unit	No. of Units	Dimensions in metres
1.	SEPTIC TANK	1	4.0*3.0*2.0
2.	SOAK PIT	1	0.6*0.6
b	**Effluent Treatment Plant:**		
	Treatment status: No trade effluent and hence does not arise		
SL. No.	Name of the Treatment Unit	No. of Units	Dimensions in metres
1.			

3. This consent to establish is valid for establishing the facility with the below mentioned outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	SEPTIC TANK WITH SOAK PIT	0.44	On Industrys own land
Effluent Type : Trade Effluent			

4. **Additional Conditions:**

1.The proponent shall comply with the conditions stipulated in the Environmental Clearance issued by SEIAA, TN vide Letter No. SEIAA-TN/F.No. 3260/EC/1(a)/2629/2015 dated 05.01.2016.
2. The establishment activities shall not give to rise to nuisance/complaints from neighbours.
3. The consents do not absolve from obtaining permission/clearance from other authorities or other statutes as applicable

District Environmental Engineer,
Tamilnadu Pollution Control Board,
VIRUDHUNAGAR

199

GENERAL CONDITIONS

1. This consent to establish cannot be construed as consent to operate and the unit shall not commence the operation without obtaining the Consent to operate.
2. The applicant shall make a request for grant of consent to operate at least thirty days, before the commissioning of trial production.
3. Any Change in the details furnished in the conditions has to be brought to the notice of the Board and got approved by the Board, before obtaining consent to operate under the said Act.
4. The unit has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances (wherever applicable).
5. Consent to operate will not be issued unless the unit complies with the conditions of consent to establish.
6. The unit shall provide adequate water sprinklers for the control of dust emission during the loading and unloading of construction material so as to minimize the dust emission.
7. The unit shall provide water sprinklers along the temporary roads inside the premises to avoid fugitive dust emission during the vehicle movements.
8. The unit shall develop green belt of adequate width around the premises.
9. In case there is any change in the management, the unit shall inform the change with relevant documents immediately.

23/02/16

District Environmental Engineer,
Tamilnadu Pollution Control Board,
VIRUDHUNAGAR

23/2/16

200

TAMILNADU POLLUTION CONTROL BOARD

01 SEP 2021

CONSENT ORDER NO. 160124268808 DATED: 12/02/2016.

PROCEEDINGS NO.F.0472VDR/RS/DEE/TNPCB/VDR/A/2016 DATED: 12/02/2016

SUB: TNPC Board-Consent for Establishment-M/s. KANIRAJ ROUGH STONE BLUE METAL & GRAVEL QUARRY , S.F. No. 202/1A2, APPAYANAICKANPATTI village, Sivakasi Taluk and Virudhunagar District - for the establishment or take steps to establish the industry under Section 21 of the Air(Prevention and control of Pollution)Act,1981, as amended in 1987(Central Act. 14 of 1981)-Issued -Reg.

REF: 1. APPLICATION NO-3322517 dtd 05/12/2015.
2.FIR NO-F0472VDR/R/S/AEE/VDR/2015 DTD 11/02/2016
3.Minutes of the 41st DCCC Meeting dated 11/02/2016(Item NO-41-06)

Consent to establish or take steps to establish is hereby granted under Section 21 of the Air (Prevention and control of Pollution) Act,1981, as amended in 1987 and the Rules and Orders made there under to

The Proprietor,
M/s . KANIRAJ ROUGH STONE BLUE METAL & GRAVEL QUARRY
S.F No.202/1A2,
APPAYANAICKANPATTI Village,
Sivakasi Taluk,
Virudhunagar District.

Authorizing occupier to establish or take steps to establish the industry in the site mentioned below:

S.F No. 202/1A2,
APPAYANAICKANPATTI Village,
Sivakasi Taluk,
Virudhunagar District.

This Consent to establish is valid upto **February 11, 2018**, or till the industry obtains consent to operate under Section 21 of the Air (Prevention and control of Pollution) Act, 1981, as amended in 1987 whichever is earlier subject to special and general conditions enclosed.

23/02/16

District Environmental Engineer,
Tamilnadu Pollution Control Board,
VIRUDHUNAGAR

23/2/16

To
The Proprietor,M/s.KANIRAJ ROUGH STONE BLUE METAL & GRAVEL QUARRY,
S.NO.202/1A2, APPAYANAICKENPATTI VILLAGE,
Pin: 626204

Copy to:

1.The Commissioner, VEMBAKKOTTAI-Panchayat Union, Sivakasi Taluk, Virudhunagar District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Maduri for favour of kind information.
4. File

201

SPECIAL CONDITIONS

1. This consent to establish is valid for establishing the facility for the manufacture of products/ byproducts (Col. 2) at the rate (Col 3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	Quarrying of Rough Stone upto a depth of 6 m (Latitude 09°17'47"N & Longitude 77°41'41" E)	34833	(Cu.m over a period of 5 years)
2.	Quarrying of Top soil & Gravel upto a depth of 6 m (Latitude 09°17'47"N & Longitude 77°41'41" E)	16404	(Cu.m over a period of 5 years)

2. This consent to establish is valid for establishing the facility with the below mentioned emission/noise sources along with the control measures and/or stack .Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent has to be obtained if necessary.

I	Point source emission with stack :			
Stack No.	Point Emission Source	Air pollution Control measures	Stack height from Ground Level in m	Gaseous Discharge in Nm3/hr
II	Fugitive/Noise emission :			
Sl. No.	Fugitive or Noise Emission sources	Type of emission	Control measures	
1.	MINING OPERATION	Fugitive	Water sprinkler system	

3. **Additional Conditions:**

1.The proponent shall comply with the conditions stipulated in the Environmental Clearance issued by SEIAA, TN vide Letter No. SEIAA-TN/F.No. 3260/EC/1(a)/2629/2015 dated 05.01.2016.
2. The establishment activities shall not give to rise to nuisance/complaints from neighbours.
3. The consents do not absolve from obtaining permission/clearance from other authorities or statutes as applicable

District Environmental Engineer,
Tamilnadu Pollution Control Board,
VIRUDHUNAGAR

GENERAL CONDITIONS

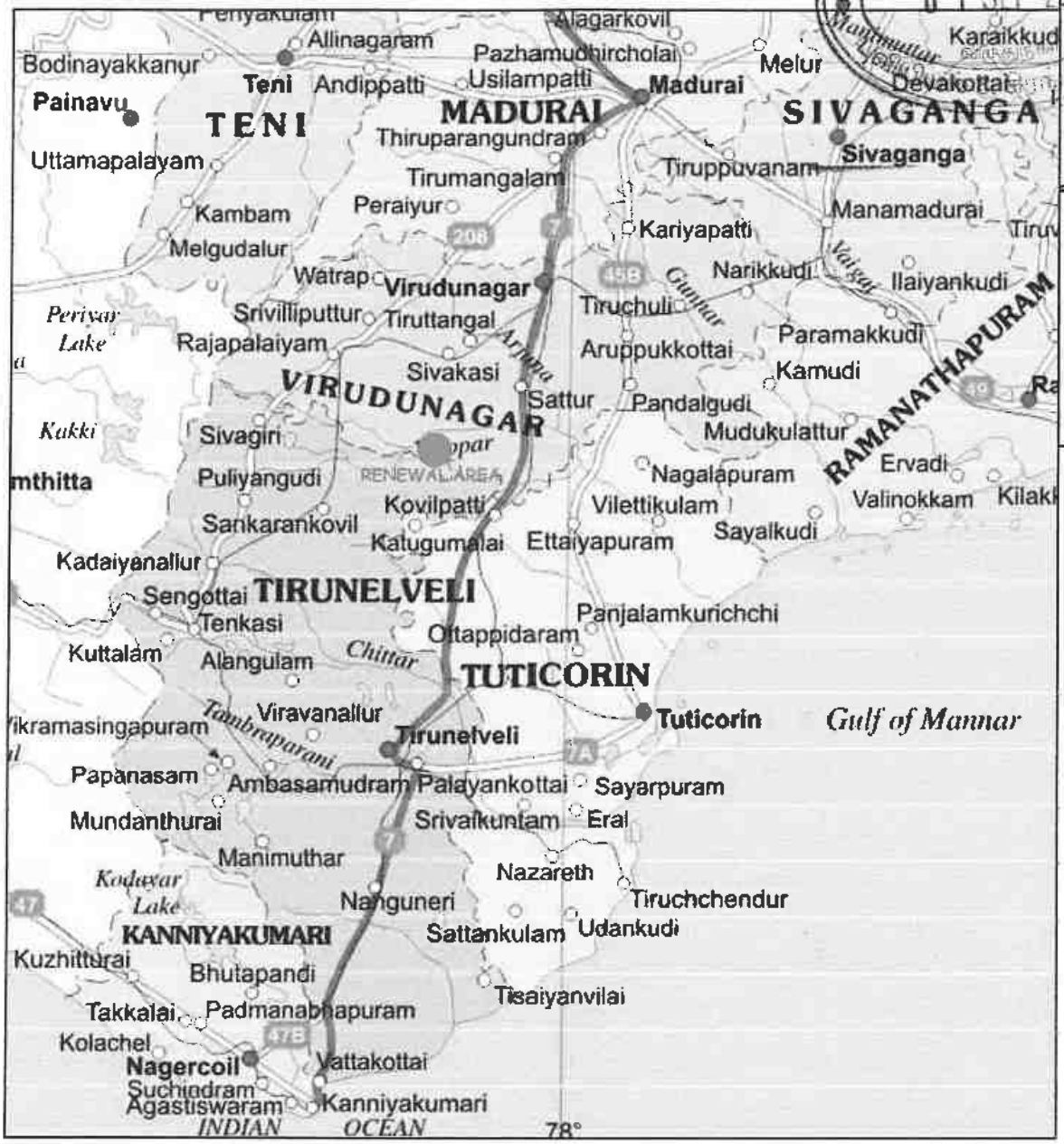
1. This consent to establish cannot be construed as consent to operate and the unit shall not commence the operation without obtaining the Consent to operate.
2. The applicant shall make a request for grant of consent to operate at least thirty days, before the commissioning of trial production.
3. Any Change in the details furnished in the conditions has to be brought to the notice of the Board and got approved by the Board, before obtaining consent to operate under the said Act.
4. The unit has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances (wherever applicable).
5. Consent to operate will not be issued unless the unit complies with the conditions of consent to establish.
6. The unit shall provide adequate water sprinklers for the control of dust emission during the loading and unloading of construction material so as to minimize the dust emission.
7. The unit shall provide water sprinklers along the temporary roads inside the premises to avoid fugitive dust emission during the vehicle movements.
8. The unit shall develop green belt of adequate width around the premises.
9. In case there is any change in the management, the unit shall inform the change with relevant documents immediately.

23/02/16

District Environmental Engineer,
Tamilnadu Pollution Control Board,
VIRUDHUNAGAR

23/2/16

202



NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 756.

PLATE NO. I

ROUGH STONE / JELLY / GRAVEL QUARRY

LOCATION PLAN

SCALE:- 1CM = 12.5KMs

INDEX:-

MINING LEASE RENEWAL AREA

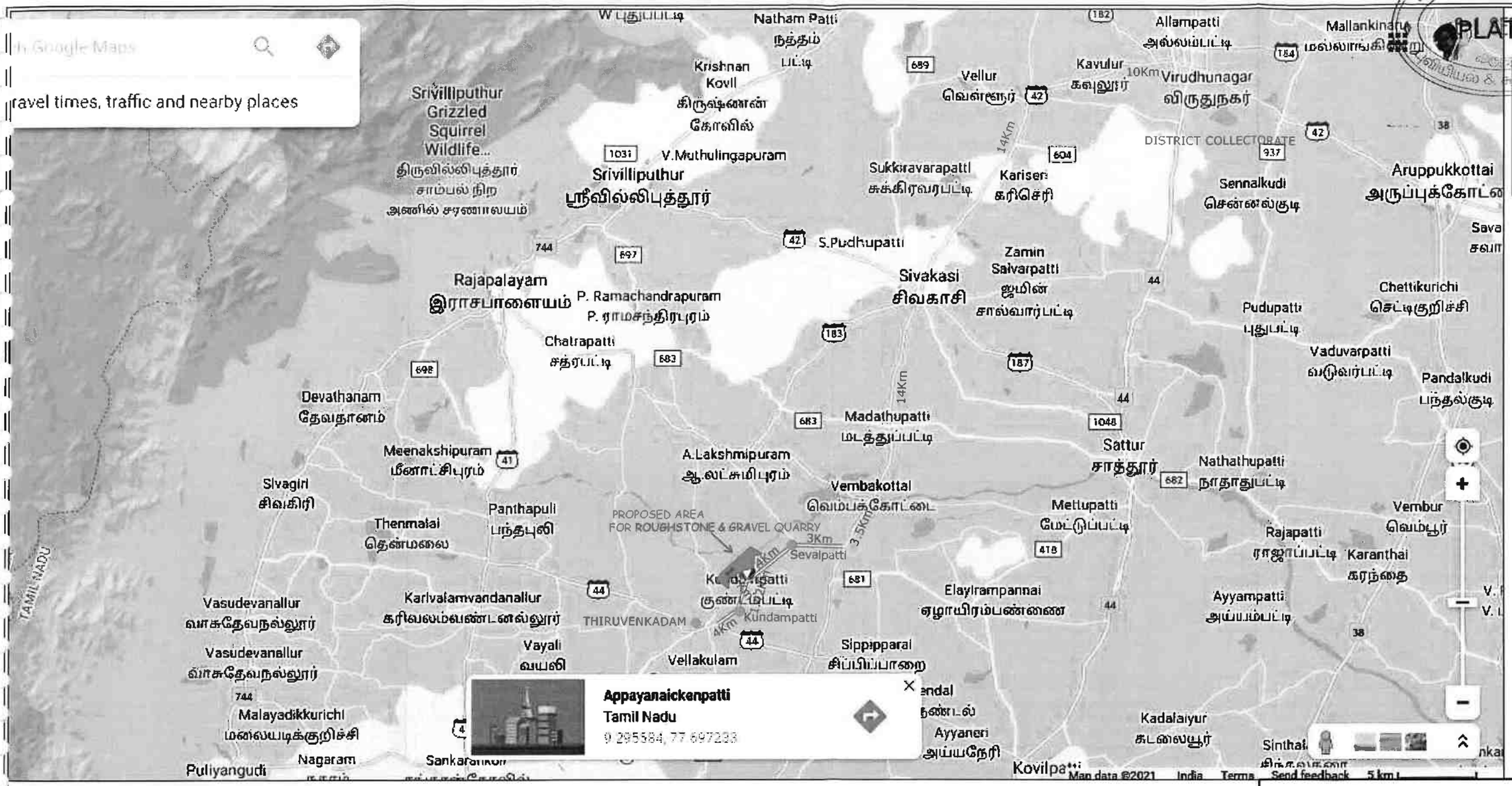
- State capital
- District headquarters
- Other town
- National Highway number
- Golden Quadrilateral
- North-South & East-West Corridors
- National Highway
- Railway

PREPARED BY:-

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
ROP/MAS/260/2014/A
(Valid upto 13.11.2024)

207

PLATE NO. 1A



NAME OF THE APPLICANT:	G. KANIRAJ, S/o. GURUSAMY, 60C, INDRA NAGAR, THIRUVENKADAM, SANKARANKOVIL TALUK, TENKASI DISTRICT - 627 719.
DISTRICT	: VIRUDHUNAGAR
TALUK	: VEMBAKOTTAI
VILLAGE	: APPAIYANAICKANPATTI
S.F.No.	: 202/1A2
EXTENT	: 1-21.5 HECTARE.

INDEX:-

- RENEWAL AREA FOR ROUGHSTONE & GRAVEL QUARRY
- APPROACH ROAD
- VILLAGE

ROUGHSTONE/JELLY/GRAVEL QUARRY

ROUTE MAP

SCALE:- NOT TO SCALE

PREPARED BY:-

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

PLATE NO. II

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

TOPO SHEET No.58-G/11

LATITUDE : 9° 17' 44.4" To 9° 17' 50.3"

LONGITUTE :77° 41' 36.6" To 77° 41' 43.0"

INDEX:- MINING LEASE RENEWAL AREA

WIND DIRECTION

1KM RADIUS

5KM RADIUS

10KM RADIUS

CONVENTIONAL SYMBOLS

Expressway with toll, well bridge with distance stone
Roads, metalled according to importance
Roads, double carriageway according to importance
Streams with track in bed, undefined Canal
Dams masonry or rock filled earthwork Weir
River dry with water channel, with island & rocks Tidal river
Wells lined, unlined Tube-well Spring Tanks perennial, dry
Embankments road or rail Cutting Broken ground
Railways broad gauge double, single with station, under construction
Railways other gauges double, single with distance stone, dismantled
Mineral line or tramway Kiln Cutting with tunnel
Contours with sub-features Rocky slopes Cliffs
Towns or Villages inhabited, deserted Fort

ROUGHSTONE/JELLY/GRAVEL QUARRY

TOPO SKETCH - 10KM RADIUS

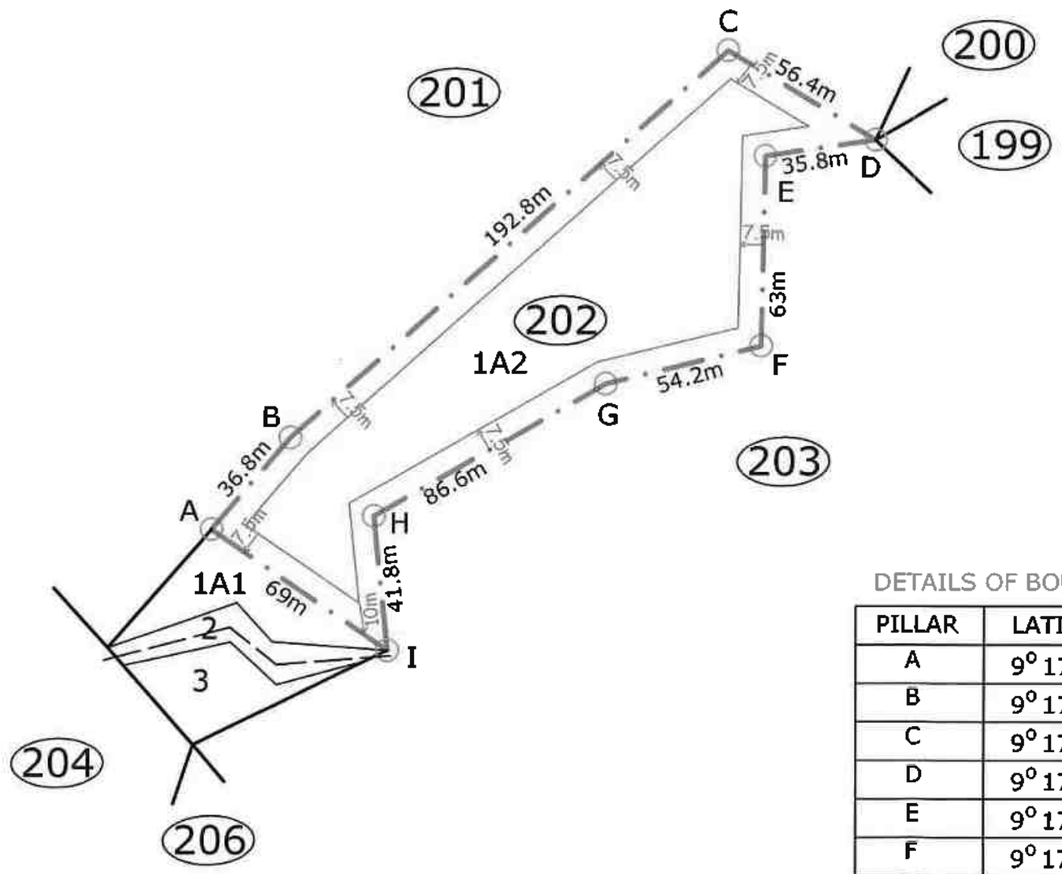
SCALE:- 1: 1,00,000

PREPARED BY:-

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

205

PLATE NO. III



DETAILS OF BOUNDARY PILLARS

PILLAR	LATITUDE	LONGITUDE
A	9°17' 45.6"	77°41' 36.6"
B	9°17' 46.4"	77°41' 37.4"
C	9°17' 50.3"	77°41' 41.6"
D	9°17' 49.4"	77°41' 43.0"
E	9°17' 49.2"	77°41' 42.0"
F	9°17' 47.3"	77°41' 42.0"
G	9°17' 47.0"	77°41' 40.4"
H	9°17' 45.7"	77°41' 38.2"
I	9°17' 44.4"	77°41' 38.3"

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

INDEX:-

LEASE RENEWAL BOUNDARY — · —

SAFETY DISTANCE 7.5M & 10M from carttrack ———

CART TRACK AT SF.No. 202/2 & 203/4 — — —

BOUNDARY PILLARS ○ A B C . .

DISTRICT : VIRUDHUNAGAR
TALUK : VEMBAKOTTAI
VILLAGE : APPAIYANAICKANPATTI
S.F.No : 202/1A2
EXTENT : 1-21.5 HECTARE.

ROUGHSTONE/JELLY/GRAVEL QUARRY

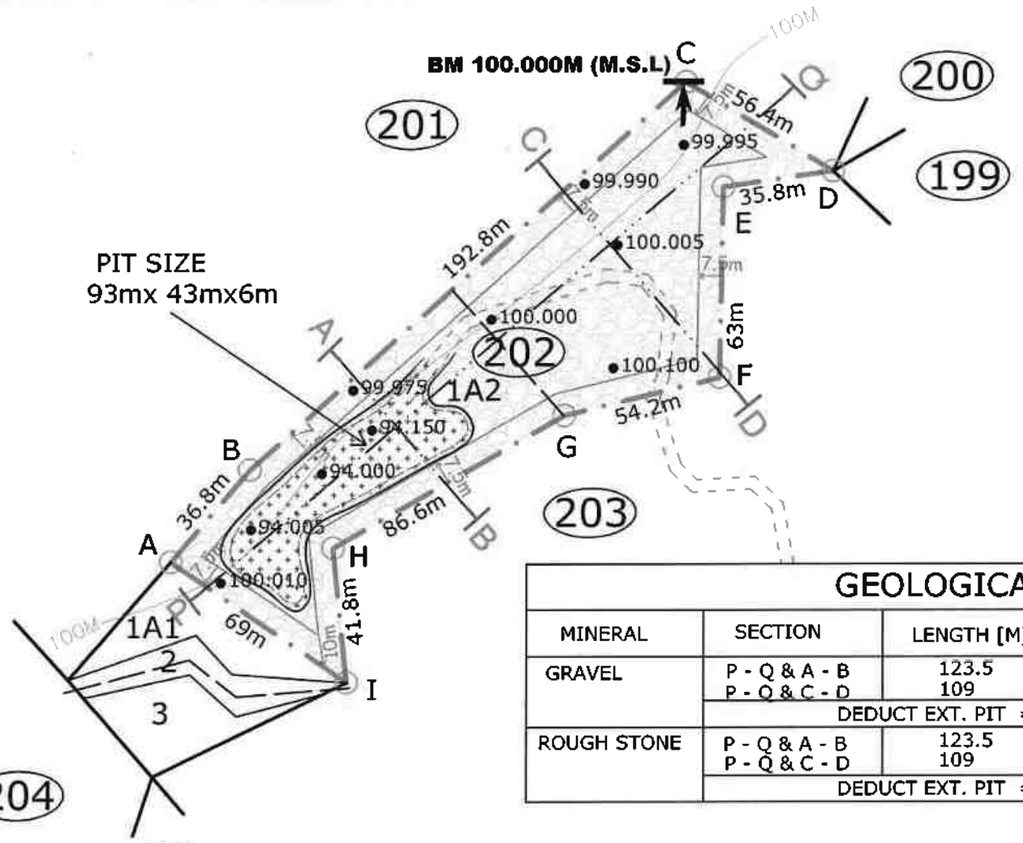
LEASE PLAN

SCALE:- 1: 2000

ALL PLANS AND SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

206

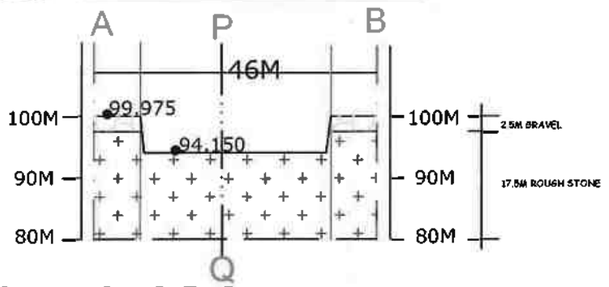


GEOLOGICAL RESERVES

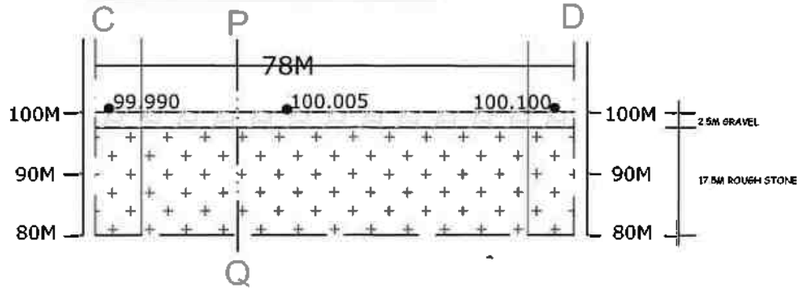
MINERAL	SECTION	LENGTH [M]	WIDTH [M]	HEIGHT [M]	VOLUME IN CUM	GEOLOGICAL RESERVES IN CUM
GRAVEL	P - Q & A - B	123.5	46	2.5	14202.5	25,460 Cu.m.
	P - Q & C - D	109	78	2.5	21255	
	DEDUCT EXT. PIT = 93x 43x 2.5m				- 9997.5	
ROUGH STONE	P - Q & A - B	123.5	46	17.5	99417.5	2,34,206 Cu.m.
	P - Q & C - D	109	78	17.5	148785	
	DEDUCT EXT. PIT = 93x 43x 3.5m				-13996.5	
			TOTAL GEOLOGICAL RESERVES			2,59,666 Cu.m.

206

SECTION ALONG A-B



SECTION ALONG C-D



SECTION ALONG P-Q

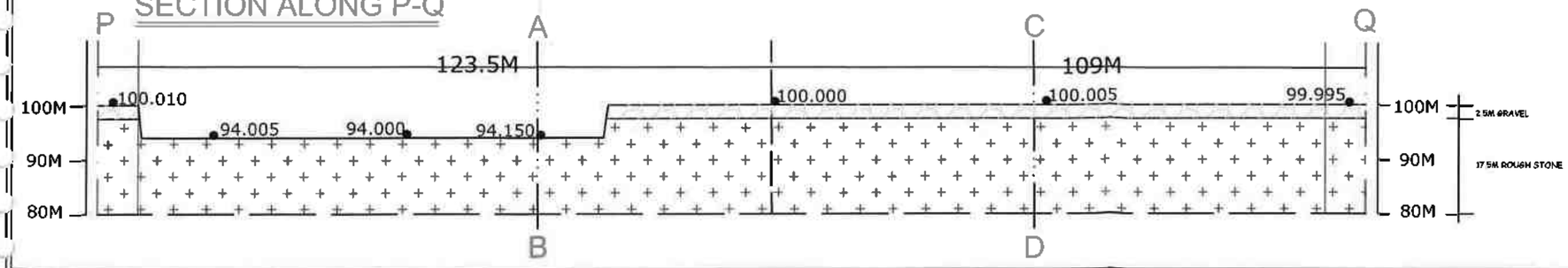


PLATE NO. IV

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

INDEX:-

- LEASE RENEWAL BOUNDARY
- SAFETY DISTANCE 7.5M & 10M from carttrack
- BOUNDARY PILLARS — A B C..
- CONTOURS — 100M
- BENCH MARK (M.S.L) — BM 100.000M
- EXISTING PIT
- APPROACH ROAD
- WEATHERED GNEISS(GRAVEL)
- CHARNOKITE (ROUGH STONE) — + + +

ROUGH STONE / JELLY / GRAVEL QUARRY

SURFACE CUM GEOLOGICAL PLAN & SECTIONS

PLAN SCALE:- 1: 2000

SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

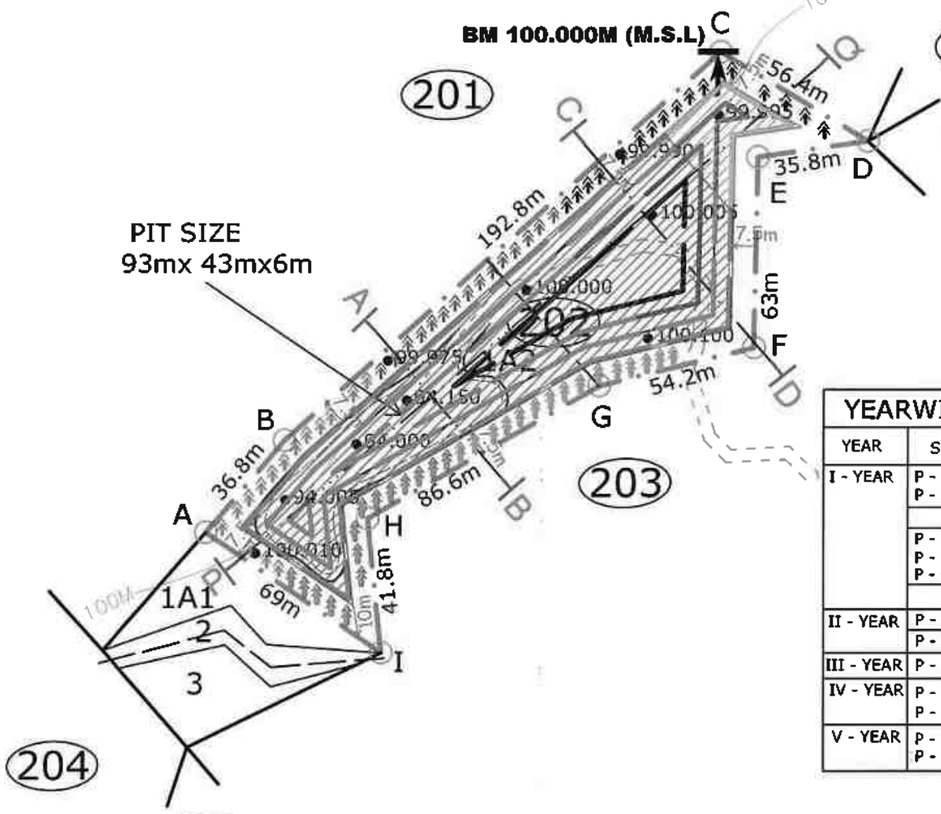
ALL PLANS AND SECTIONS ARE PREPARED

BY STATE GOVERNMENT.

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

207

PLATE NO. V



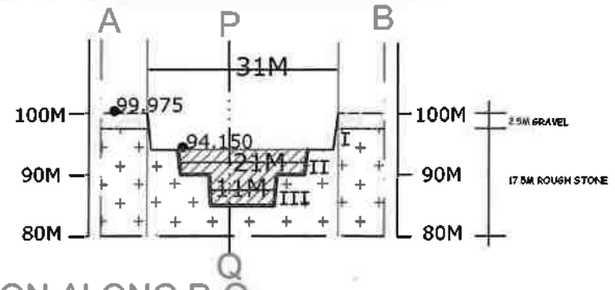
AFFORESATION PROGRAMME

PLANTATION	TYPE	No of TREES	SPACING	AREA (Ha)	SURVIVAL	
I YEAR	NEEM	15	3m x 3m	0-01.35	80%	
II YEAR	NEEM	15	3m x 3m	0-01.35	80%	
III YEAR	NEEM	15	3m x 3m	0-01.35	80%	
IV YEAR	NEEM	15	3m x 3m	0-01.35	80%	
V YEAR	NEEM	15	3m x 3m	0-01.35	80%	
	TOTAL PLANTATION AREA			0-07.0Ha		

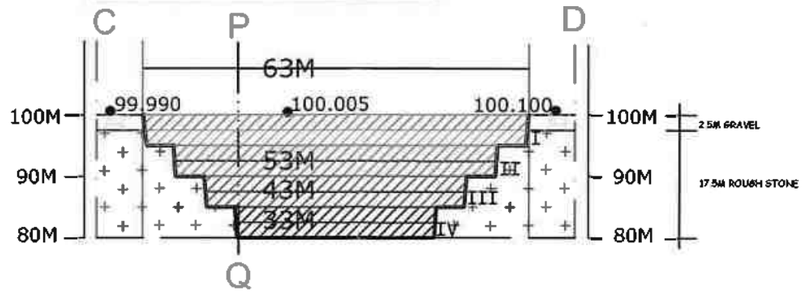
YEARWISE PRODUCTION SCHEDULE

YEAR	SECTION	BENCH	LENGTH [M]	WIDTH [M]	HEIGHT [M]	VOLUME IN CUM GRAVEL	VOLUME IN CUM ROUGHSTONE	TOTAL PRODUCTION IN CUM
I - YEAR	P - Q & A - B	I	116	31	2.5			
	P - Q & C - D	I	76.5	63	2.5			
	DEDUCT EXT. PIT= 93x 43x 2.5m=- 9997.5					11041.25	---	
	P - Q & A - B	I	116	31	2.5			
	P - Q & A - B	II	111	21	5.0			
	P - Q & A - B	III	106	11	5.0			
	DEDUCT EXT. PIT= 93x 43x 3.5m=-13996.5					---	12478.5	23,519.75
II - YEAR	P - Q & C - D	I	25	63	2.5	3937.5	---	
	P - Q & C - D	I	101.5	63	2.5	---	15986.25	19,923.75
III - YEAR	P - Q & C - D	II	75	53	5.0	---	19875	19,875
IV - YEAR	P - Q & C - D	II	21.5	53	5.0	---	5697.5	
	P - Q & C - D	III	66.5	43	5.0	---	14297.5	19,995
V - YEAR	P - Q & C - D	III	25	43	5.0	---	5375	
	P - Q & C - D	IV	86.5	33	5.0	---	14272.5	19,647.5
	TOTAL PRODUCTION					14,978.75	87,982.25	1,02,961 Cu.m

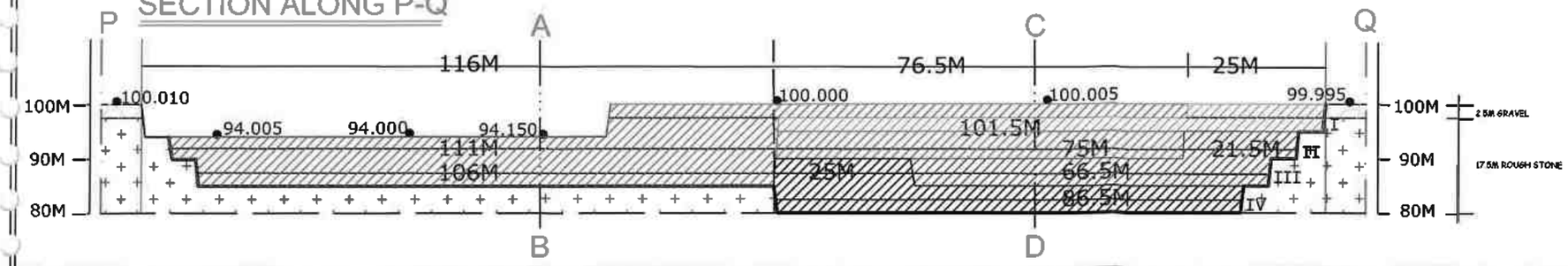
206 SECTION ALONG A-B



SECTION ALONG C-D



SECTION ALONG P-Q



NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

INDEX:-

- LEASE RENEWAL BOUNDARY
- SAFETY DISTANCE 7.5M & 10M from carttrack
- BOUNDARY PILLARS (A B C..)
- CONTOURS
- BENCH MARK (BM 100.000M)
- APPROACH ROAD
- I YEAR EXCAVATION
- II YEAR EXCAVATION
- III YEAR EXCAVATION
- IV YEAR EXCAVATION
- V YEAR EXCAVATION

ROUGH STONE / JELLY / GRAVEL QUARRY

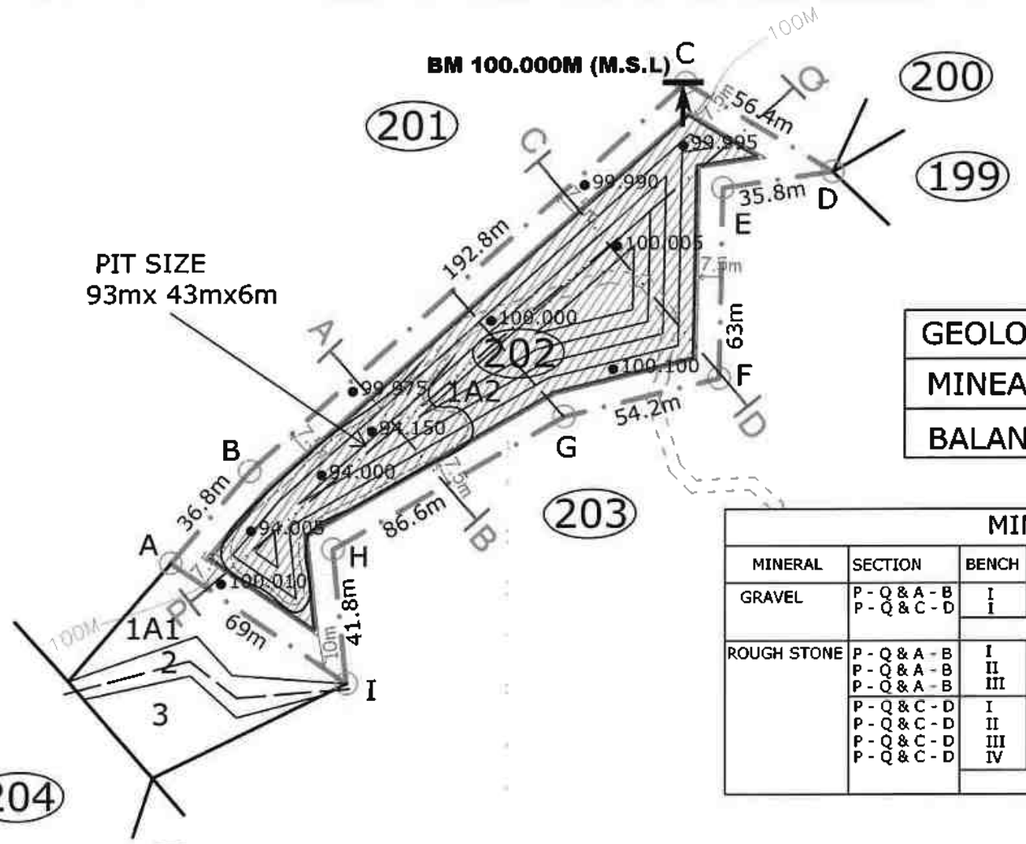
LAND USE CUM YEARWISE PLAN & SECTIONS

PLAN SCALE:- 1: 2000

SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

ALL PLANS AND SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

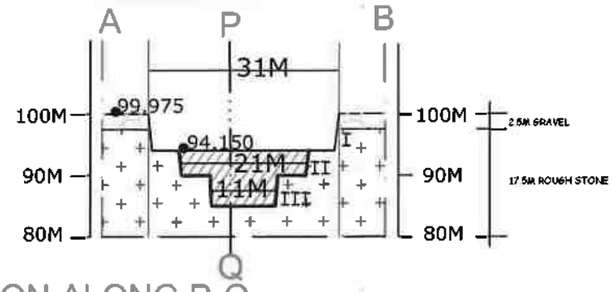


ULTIMATE PIT SIZE			
SECTION	LENGTH[M]	WIDTH[M]	DEPTH[M]
PQ-AB	116	31	15.0
PQ-CD	101.5	63	20.0

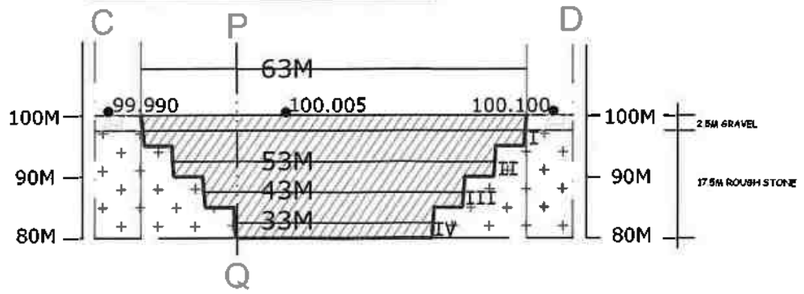
GEOLOGICAL RESERVES	2,59,666
MINEABLE RESERVES	1,02,961
BALANCE RESERVES	1,56,705

MINEABLE RESERVES							MINEABLE RESERVES IN CUM
MINERAL	SECTION	BENCH	LENGTH [M]	WIDTH [M]	HEIGHT [M]	VOLUME IN CUM	
GRAVEL	P - Q & A - B	I	116.0	31	2.5	8990	
	P - Q & C - D	I	101.5	63	2.5	15986.25	
	DEDUCT EXT. PIT = 93x 43x 2.5m					- 9997.50	14,978.75 Cu.m.
ROUGH STONE	P - Q & A - B	I	116	31	2.5	8990	
	P - Q & A - B	II	111	21	5.0	11655	
	P - Q & A - B	III	106	11	5.0	5830	
	P - Q & C - D	I	101.5	63	2.5	15986.25	
	P - Q & C - D	II	96.5	53	5.0	25572.5	
	P - Q & C - D	III	91.5	43	5.0	19672.5	
	P - Q & C - D	IV	86.5	33	5.0	14272.5	
	DEDUCT EXT. PIT = 93x 43x 3.5m					-13996.5	87,982.25 Cu.m.
	TOTAL MINEABLE RESERVES						1,02,981 Cu.m.

206 SECTION ALONG A-B



SECTION ALONG C-D



SECTION ALONG P-Q

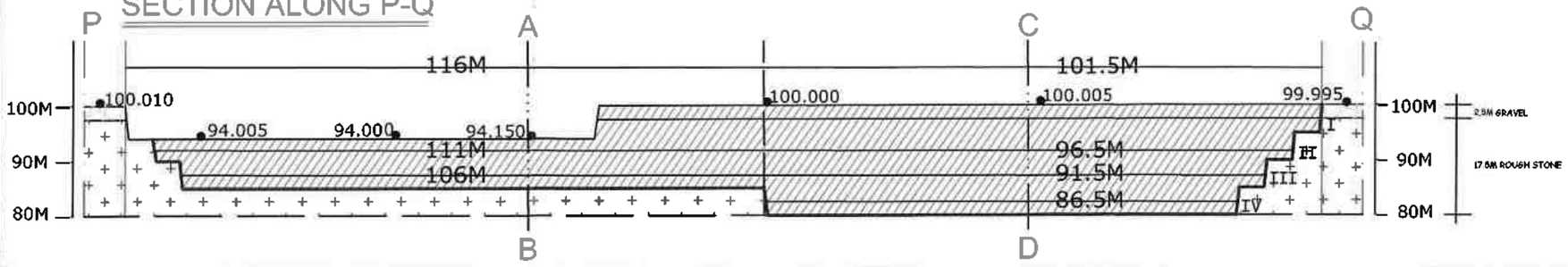


PLATE NO. VI

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

INDEX:-

- LEASE RENEWAL BOUNDARY
- SAFETY DISTANCE 7.5M & 10M from carttrack
- BOUNDARY PILLARS (A B C..)
- CONTOURS (100M)
- BENCH MARK (BM 100.00M)
- APPROACH ROAD
- WEATHERED GNEISS(GRAVEL)
- CHARNOKITE (ROUGH STONE) (+ + +)
- LAYOUT OF MINE WORKING
- ULTIMATE PIT SLOPE

ROUGH STONE / JELLY / GRAVEL QUARRY

CONCEPTUAL MINING PLAN

SECTIONS

PLAN SCALE:- 1: 2000

SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

ALL PLANS AND SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

500m Radius from the proposed quarry

Quarries details	Name of owner	Village name	Survey nos	Extent (Ha)	Distance (m)
a. Existing workings	1.G.Ravikumar	Appaiyanaickanpatti	276,278,etc.,	3-85.5	195m
	2.S.Subburaj	Appaiyanaickanpatti	44,46/1	2-20.5	220m
	3.S.Ramraj	Appaiyanaickanpatti	196,197,etc	2-88.0	156m
	4.R.Gopalakrish	Appaiyanaickanpatti	199/6A	1-08.0	78m
b. Abondent	5.S.Arumugam	Appaiyanaickanpatti	207/2A,2B	perior 2018	130m
	6.S.Ramraj	Appaiyanaickanpatti	196/1a,etc	perior 2018	290m
	7.G.Ramasamy	Appaiyanaickanpatti	208/1,2,etc	perior 2019	310m
	8.Govt.Pit	Appaiyanaickanpatti	50	perior 2012	260m
c. Proposed	9.G.Kaniraj	Appaiyanaickanpatti	202/1A2	1-21.5	applied
d. Future proposel	10.S.Ragupathi	Appaiyanaickanpatti	196/2a,etc.,	1-30.3	320m
	11. Gayathiri	Appaiyanaickanpatti	39/1a,etc.,	2-30.2	340m
		TOTAL EXTENT (Ha)		14-84.0Ha	

PLATE NO. VII

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

INDEX:-

- LEASE RENEWAL BOUNDARY
- WORKING PITS
- ABONDENT PITS
- 300M RADIUS
- 500M RADIUS
- WIND DIRECTION
- APPROACH ROAD

ROUGH STONE / JELLY / 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.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

500m Radius from the proposed quarry

Quarries details	Name of owner	Village name	Survey nos	Extent (Ha)	Distance (m)
a. Existing workings	1.G.Ravikumar	Appaiyanaickanpatti	276,278,etc,	3-85.5	195m
	2.S.Subburaj	Appaiyanaickanpatti	44,46/1	2-20.5	220m
	3.S.Ramraj	Appaiyanaickanpatti	196,197,etc	2-88.0	156m
	4.R.Gopalakrish	Appaiyanaickanpatti	199/6A	1-08.0	78m
b. Abondend	5.S.Arumugam	Appaiyanaickanpatti	207/2A,2B	perior 2018	130m
	6.S.Ramraj	Appaiyanaickanpatti	196/1a,etc	perior 2018	290m
	7.G.Ramasamy	Appaiyanaickanpatti	208/1,2,etc,	perior 2019	310m
	8.Govt.Pit	Appaiyanaickanpatti	50	perior 2012	260m
c. present proposed	9.G.Kaniraj	Appaiyanaickanpatti	202/1A2	1-21.5	applied
d. future proposel	10.S.Ragupathi	Appaiyanaickanpatti	196/2a,etc.,	1-30.3	320m
	11. Gayathiri	Appaiyanaickanpatti	39/1a,etc.,	2-30.2	340m
TOTAL EXTENT (Ha)				14-84.0Ha	

PLATE NO. VIIA

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

DISTRICT : VIRUDHUNAGAR
TALUK : VEMBAKOTTAI
VILLAGE : APPAIYANAICKANPATTI
S.F.No : 202/1A2
EXTENT : 1-21.5 HECTARE.

INDEX:-

- AREA RENEWAL FOR QUARRY LEASE
- APPROACH ROAD (GOVT. PROMBOKE ROAD & Applicant own patta land)
- 300M RADIUS LINE (No well, No historical monuments & Vaipar river - 90m dist.)
- 500M RADIUS LINE (No habitations, No temples, 4 working quarries with in 500m & No other structures like culverts, head works, bridges etc.,)

ROUGHSTONE/JELLY QUARRY

VILLAGE MAP

showing environmental features

SCALE:- 1: 5000

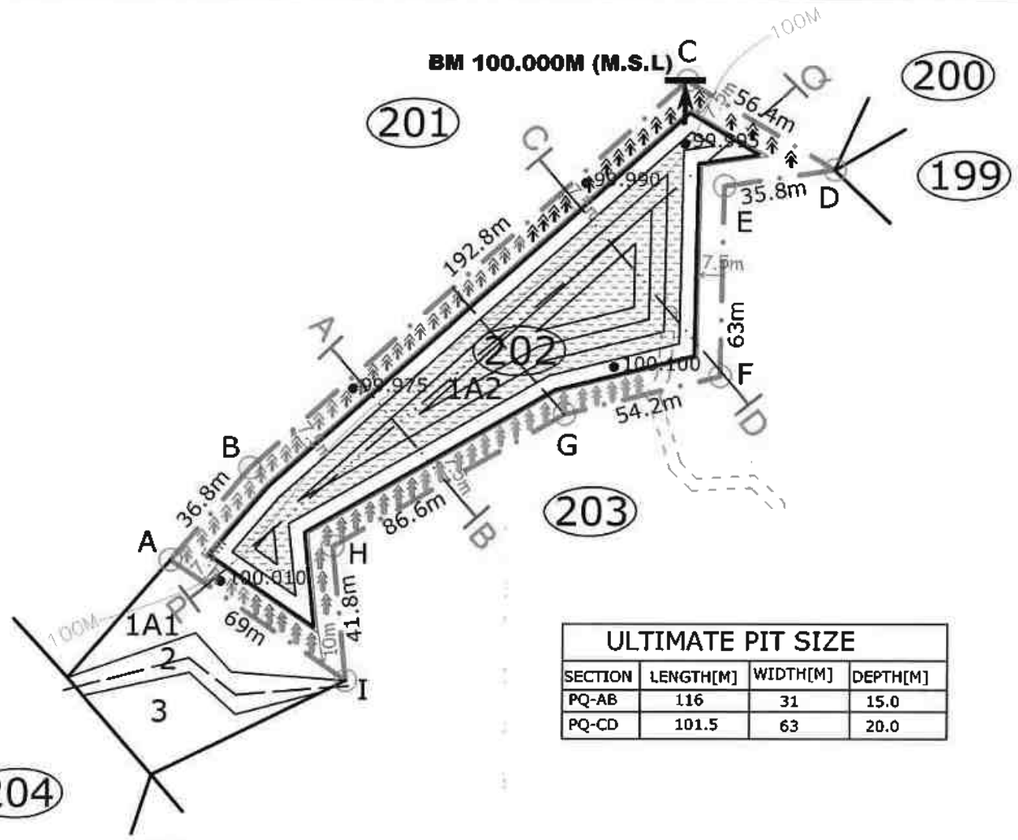
ALL PLANS AND SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

BASE LINE DATA FOR WATER BODIES

Sl.No.	Sl.No.	DIRECTION	DIRECTION (M)	DEPTH (M)	WATER LEVEL
1.	Well	North west	725	12	dry
2.	Well	North west	575	2243	dry
3.	Well	North east	620	14	dry
4.	Well	North east	475	16	dry
5.	Well	South east	925	14	dry
6.	Well	South	850	17	dry
7.	Well	West	575	15	dry
8.	Well	West	625	14	dry
9.	Well	West	650	15	dry
10.	Well	West	600	14	dry
11.	Devanadi	North west	90	0.50	dry

PLATE NO. VIII



AFFORESATION PROGRAMME

PLANTATION	TYPE	No of TREES	SPACING	AREA (Ha)	SURVIVAL	
I YEAR	NEEM	15	3m x 3m	0-01.35	80%	
II YEAR	NEEM	15	3m x 3m	0-01.35	80%	
III YEAR	NEEM	15	3m x 3m	0-01.35	80%	
IV YEAR	NEEM	15	3m x 3m	0-01.35	80%	
V YEAR	NEEM	15	3m x 3m	0-01.35	80%	
	TOTAL PLANTATION AREA			0-07.0Ha		

ULTIMATE PIT SIZE

SECTION	LENGTH[M]	WIDTH[M]	DEPTH[M]
PQ-AB	116	31	15.0
PQ-CD	101.5	63	20.0

PRESENT MINING LAND USE PLANNING
(BREAKUP ALONG WITH GREENBELT ETC.;)

SL.No.	LAND USE CATEGORY	AT THE END OF LIFE OF MINE
1.	Mining / Excavation	1-00.0 hectare
2.	Storage of Top soil	0-00.0 hectare
3.	Sorting and mineral Dressing yard	0-00.0 hectare
4.	Infrastructure & Road	0-03.0 hectare
5.	Afforesation (greenbelt & plantation)	0-07.0 hectare
6.	Water reservoir	1-00.0 hectare (after closure of mine)
7.	Undisturbed area	0-05.5 hectare
8.	Fencing	0-06.0 hectare
TOTAL		1-21.5 Hectare.

N

NAME OF THE APPLICANT:

G. KANIRAJ, S/o. GURUSAMY,
60C, INDRA NAGAR, THIRUVENKADAM,
SANKARANKOVIL TALUK,
TENKASI DISTRICT - 627 719.

INDEX:-

- LEASE RENEWAL BOUNDARY
- SAFETY DISTANCE 7.5M & 10M from carttrack
- BOUNDARY PILLARS ○A B C..
- CONTOURS
- BENCH MARK BM 100.000M
- APPROACH ROAD
- LAYOUT OF MINE WORKING (FUTURE WATER RESERVOIR)

ROUGH STONE / JELLY / GRAVEL QUARRY

MINE CLOSURE PLAN & SECTIONS

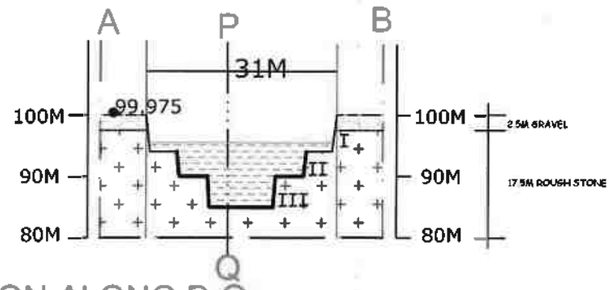
PLAN SCALE:- 1: 2000

SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

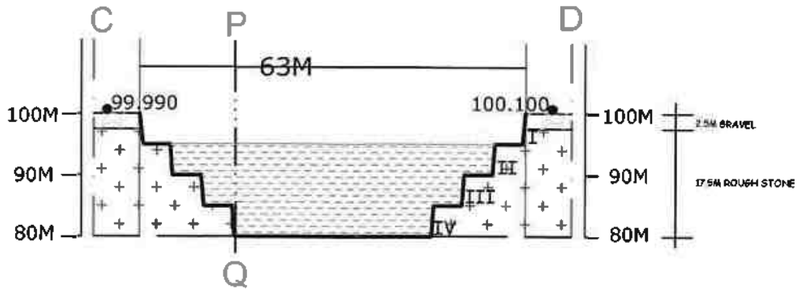
ALL PLANS AND SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

M. DHARMALINGAM, M.Sc., F.C.C.
Recognised Qualified Person
RQP/MAS/260/2014/A
(Valid upto 13.11.2024)

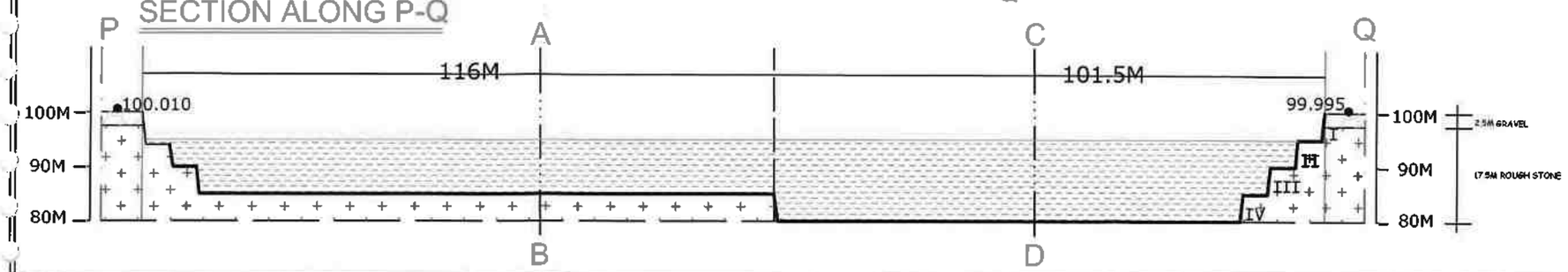
SECTION ALONG A-B



SECTION ALONG C-D



SECTION ALONG P-Q



212