

**From,**

**Thiru T.Kumaresh**

S/o Thangamuthu Madukkarai (Via),  
Coimbatore District – 641105

**To**

**District Environmental Engineer (Dindigul District)**

Tamilnadu Pollution Control Board,  
Collectorate Complex,  
Dindigul -624 004.

**Sub: Submission of Draft EIA/EMP report and Summary for Rough stone and Gravel Quarry of Thiru T.Kumaresh at Survey No. 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu - Public hearing\_ Reg**

**Ref: ToR granted by SEIAA, Tamil Nadu vide letter SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022 dated 08.10.2022**

Sir,

With reference to the above mentioned subject, I am herewith submitting the copies of Draft EIA/EMP report and Summary of EIA/EMP report in English and Tamil along with CD for Rough stone and Gravel Quarry at 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu.

As per the terms of reference issued by SEIAA, Tamil Nadu referred to as (1) above, point no. 39 stipulates conduction of public hearing. Hence, I request you to consider conducting a public hearing for my project at the earliest.

Here with enclosed D.D No –                      dated                      for public hearing.

Thank you.

Yours Faithfully,



Thiru T.Kumaresh

Encl: as above

# DRAFT EIA / EMP REPORT

FOR

## ROUGHSTONE AND GRAVEL QUARRY

<b>Extent</b>	2.331Ha
<b>Survey No.</b>	388/1A2(P)
<b>Land Type</b>	Patta Land
<b>Location</b>	Kolumankondan village, Palani Taluk, Dindigul District, Tamil Nadu.
<b>Production for 5 years</b>	Roughstone – 2,29,340 m <sup>3</sup> Gravel – 15042 m <sup>3</sup> Weathered Rock – 60168 m <sup>3</sup>
<b>Depth</b>	40m

- Terms of Reference issued by SEIAA, Tamil Nadu vide SEIAA-TN/F.No.9430/ToR-1274/2022 dated 08.10.2022.
- Baseline Monitoring Period – Winter Season (December 2022 to February 2023)

### **PROJECT PROPONENT**

# **THIRU T.KUMARESH**

S/o.Thangamuthu Madukkarai (Via), Coimbatore District - 641105

### **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,



## **MAY 2023**

## **REVISIONS OF EIA/EMP REPORT**

<b>Revision number</b>	<b>Report Status</b>	<b>Date of submission</b>
00/MAY/23	Draft EIA /EMP Report	08.05.2023

Environmental Impact Assessment & Environmental Management Plan Report for Rough stone and Gravel Quarry at Survey No. at 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul 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 08.05.2023 after due review by the personnel and consultation with Thiru T.Kumaresh. Current Revision number of the EIA/EMP report is 00/MAY/23, signifying as per the revision mentioned in the above table that this is a draft EIA/EMP report.

## **PROJECT PROPONENT DECLARATION**

I, Thiru T.Kumaresh received ToR under EIA Notification 2006 from SEIAA, Tamil Nadu vide their SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022 dated 08.10.2022 for mining lease for Rough stone and Gravel Quarry at Survey No. 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu

I have entrusted the EIA study to M/s. Creative Engineers & Consultants (CEC), Chennai who have been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India with their accreditation valid upto 23.12.2023.

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/EMP Report.

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



**Thiru T.Kumaresh**



# CREATIVE ENGINEERS & CONSULTANTS

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

## EIA Consultant Undertaking

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

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

CEC has been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India for empanelment of EIA Consultants with accreditation valid upto 23.12.2023.

Thiru T.Kumaresh received ToR under EIA Notification 2006 from SEIAA, Tamil Nadu vide their SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022 dated 08.10.2022 for mining lease for Rough stone and Gravel Quarry at Survey No. 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul 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**

**Annexure – VII**

**Declaration by Experts contributing to the EIA Report for**

**Rough stone and Gravel Quarry of Thiru T.Kumaresh at Survey No. 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul 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**



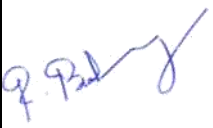


Signature and Date: 





Period of involvement: **July 2022 onwards**

Contact information: **09444133619**

Functional area experts:

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and date
1	AP*	<b>P.Giri</b>	<ul style="list-style-type: none"> <li>• Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards.</li> <li>• Identification of sources of air pollution comprising dust, gaseous emission due to mining &amp; other activities</li> <li>• Identification of Impacts &amp; suggestion of mitigation measures</li> </ul> <b>Period: July 2022 onwards</b>	
		<b>B.Swamynathan</b>	<ul style="list-style-type: none"> <li>• Data interpretation of Micro meteorological data for wind rose.</li> <li>• Identification of polluting source and suggestion of suitable mitigation measures.</li> </ul> <b>Period: December 2022 onwards</b>	

2	WP*	G.Sandhya	<ul style="list-style-type: none"> <li>• Study of the monitored data with respect to the applicable standards.</li> <li>• Identification of Water requirement &amp; Source</li> <li>• Preparation of water balance diagram</li> <li>• Identification of Water polluting sources</li> <li>• Impact of the project on the water quality, both surface and groundwater</li> <li>• Suggestion of Mitigation measures to control water pollution</li> </ul> <p>Period: December 2022 onwards</p>	
3	SHW*	P.Giri	<ul style="list-style-type: none"> <li>• Quantification of mineral &amp; waste from mining operation</li> <li>• Waste disposal method evaluation</li> <li>• Providing dump management plan</li> <li>• Providing Surface Runoff Management Structure Requirements.</li> <li>• Identification of Hazardous waste and its details of disposal</li> </ul> <p>Period: July 2022 onwards</p>	
4	SE*	R.Baburaj	<ul style="list-style-type: none"> <li>• Identification of villages in the study area and finalization of demographic profile of the villages within the study area.</li> <li>• Preparation of sections relevant to SE functional area in the EIA/EMP report</li> </ul> <p>Period: December 2022 onwards</p>	
5	EB*	B.Swamynathan	<ul style="list-style-type: none"> <li>• Perusal of existing data relevant to this project.</li> <li>• Studying the details of flora and fauna, separately for core, buffer zone and forest area based on primary field survey.</li> <li>• Identification of species , Indicating the Schedule of the fauna present in the study area</li> <li>• Assessment of impact on Biological environment and suggestion of mitigative measures</li> <li>• Collecting &amp; providing details of existing and proposed Green belt development /plantation in the core zone</li> </ul> <p>Period: December 2022 onwards</p>	
6	HG*	K.Shankar	<ul style="list-style-type: none"> <li>• 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</li> </ul>	

			<ul style="list-style-type: none"> <li>• Perusal of site specific ground water table details for the core zone and the study area.</li> <li>• Studied the hydrological aspects of surface and groundwater in study area</li> <li>• Study about impact on the hydrology due to mining operation</li> <li>• Suggesting mitigative measures like RWH for enhancement of ground water level</li> </ul> <p><b>Period: December 2022 onwards</b></p>	
7	GEO*	<b>K.Shankar</b>	<ul style="list-style-type: none"> <li>• Study of geology of the ML area and the surrounding areas.</li> <li>• Provide details about Mineral composition</li> </ul> <p><b>Period: December 2022 onwards</b></p>	
8	SC*	<b>B.Swamynathan</b>	<ul style="list-style-type: none"> <li>• Study of soil profile</li> <li>• Assessment of Impact on soil and suggesting plantation scheme.</li> </ul> <p><b>Period: December 2022 onwards</b></p>	
9	AQ*	<b>G.Sandhya</b>	<ul style="list-style-type: none"> <li>• Quantification of emission particulars</li> <li>• Air quality modelling for post project impact on the air quality prediction of the study area.</li> <li>Analysis of the Isopleth generated</li> <li>• Arriving at the post project concentration at the AAQ monitoring locations</li> <li>• Preparation of meteorological data in suitable form for input into the model</li> <li>• Simulation of model for generation of Isopleth and data interpretation.</li> <li>• Studying the impact on AAQ monitoring locations due to the generated emissions.</li> <li>• Preparation of sections relevant to AQ functional area in the EIA/EMP report.</li> </ul> <p><b>Period: December 2022 onwards</b></p>	
10	NV*	<b>P.Giri</b>	<ul style="list-style-type: none"> <li>• Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards.</li> <li>• Predict the noise level and vibration level due to proposed mining operation based on scientific evaluation.</li> <li>• Suggesting the Mitigation measures to control noise pollution, Suggesting the Mitigation measures to</li> </ul>	



			<p><b>control ground vibration</b>  <b>Period: July 2022 onwards</b></p>	
11	LU	<b>B.Swamynathan</b>	<ul style="list-style-type: none"> <li>• Collection of Remote sensing satellite data to study the land use pattern.</li> <li>• Primary field survey and limited field verification</li> <li>• 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.</li> </ul> <p><b>Period: December 2022 onwards</b></p>	<i>B.Swamynathan</i>
12	RH*	<b>K.Shankar</b>	<ul style="list-style-type: none"> <li>• Identified Major risks involved in the project</li> <li>• Mitigation measures suggested to avoid risk.</li> <li>• Preparation of onsite and offsite emergency management plan</li> </ul> <p><b>Period: December 2022 onwards</b></p>	<i>K.Shankar</i>

\*One TM against each FAE may be shown

\*\*Please attach additional sheet if required

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

I, **P.Giri** hereby, confirm that the above mentioned experts prepared the EIA report for **Rough stone and Gravel Quarry of Thiru T.Kumaresh at Survey No. 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul 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/SA 0187 & date 30.01.2023**



**QUALITY COUNCIL  
OF INDIA**  
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## National Accreditation Board for Education and Training



### Certificate of Accreditation

**Creative Engineers and Consultants,**  
9B/4, Bharathwajar street, East Tambaram, Chennai, Tamil Nadu

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

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including opencast/ underground mining	1	1 (a) (i)	A
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 SAAC minutes dated Oct 4, 2022 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/23/2653 dated January 30, 2023. The accreditation needs to be renewed before the expiry date by Creative Engineers and Consultants, following due process of assessment.

Sr. Director, NABET  
Dated: January 30, 2023

Certificate No.  
NABET/EIA/2023/SA 0187

Valid up to  
December 23, 2023

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



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**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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**TERMS OF REFERENCE  
& ITS COMPLIANCE**



THIRU.DEEPAK S.BILGI, 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.9430/ToR-1274/2022 Dated:08.10.2022.**

To

Thiru.T.Kumaresh  
S/o.Thangamuthu Madukkarai (Via)  
Coimbatore District-641105

Sir / Madam,

**Sub:** SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the Proposed Rough Stone and Gravel Quarry over an extent of 2.33.10Ha SF.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District by Thiru.T.Kumaresh - 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/81184/2022, dt 01.08.2022.
  2. Your application submitted for Terms of Reference dated: 10.08.2022.
  3. Minutes of the 312<sup>th</sup> SEAC meeting held on 16.09.2022.
  4. Minutes of the 557<sup>th</sup> Authority meeting held on 08.10.2022.

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

The proponent, Thiru.T.Kumaresh has submitted application for Terms of Reference (ToR) with public Hearing on 10.08.2022, in Form-I, Pre- Feasibility report for the proposed Rough Stone and Gravel Quarry over an extent of 2.33.10Ha SF.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu.

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**Discussion by SEAC and the Remarks:-**

**Proposed Rough Stone and Gravel Quarry over an extent of 2.33.10Ha SF.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District by Thiru.T.Kumaresh for Terms of Reference.**

**(SIA/TN/MIN/81184/2022, dt 26.07.2022)**


The proposal was placed in this 312<sup>th</sup> Meeting of SEAC held on 16.09.2022. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

The SEAC noted the following

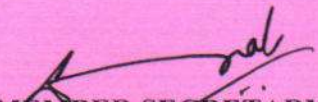
1. The Project Proponent, Thiru.T.Kumaresh has applied for Terms of Reference for the proposed Rough Stone and Gravel Quarry over an extent of 2.33.10Ha SF.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The precise area communication/lease is issued for the period of 5 years. The approved mining plan is for the period of five years & production should not exceed 233610m<sup>3</sup> of Rough Stone & 15042m<sup>3</sup> of Gravel & 60168m<sup>3</sup> of Weathered Rock. The annual peak production is 57170m<sup>3</sup> of rough stone (5<sup>th</sup> year) & 7522m<sup>3</sup> of Gravel (1<sup>st</sup> Year) & 30088m<sup>3</sup> of Weathered rock (1<sup>st</sup> year). The ultimate depth is 45m BGL.

Based on the presentation made by the proponent, SEAC has decided to recommend grant of **Terms of Reference (TOR) with Public Hearing** is issued for the production of 233610m<sup>3</sup> of Rough Stone & 15042m<sup>3</sup> of Gravel & 60168m<sup>3</sup> of Weathered Rock in 5 years with ultimate depth 45m BGL, subject to the following TORs, in addition to the standard terms of reference for EIA study and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. The PP shall furnish DFO letter in regard to shortest distance of Reserve Forest & protected areas/Wildlife sanctuaries & wild life corridors etc. within 25 Km radius.
2. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.

  
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3. The Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
4. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
5. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
6. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
7. 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.
8. 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).
9. The PP shall carry out Drone video survey covering the cluster, Green belt , fencing etc.,
10. 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.

  
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11. 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.
12. 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.
13. The Project Proponent shall conduct a detailed 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, odai, canals, ponds etc. within 1 km (radius) for both monsoon and non-monsoon seasons by a reputed institution / University to assess the impacts on the wells due to quarrying activity vice versa on the quarrying operations.
14. 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.
15. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
16. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
17. 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.
18. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
19. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the

  
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- court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
20. 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.
  21. Impact on local transport infrastructure due to the Project should be indicated.
  22. 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.
  23. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
  24. Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
  25. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
  26. The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.
  27. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
  28. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix-I** in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
  29. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS

  
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- coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
30. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
  31. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
  32. 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.
  33. 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.
  34. 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.
  35. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
  36. 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.
  37. 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.
  38. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
  39. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

  
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**Appendix -I**  
**List of Native Trees Suggested for Planting**

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	வில்வம்
2	<i>Adenaanthera pavonina</i>	Manjadi	மஞ்சாடி, ஆனைக்குன்றுமணி
3	<i>Albizia lobbeck</i>	Vaagai	வாகை
4	<i>Albizia amara</i>	Usil	உசில்
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathi	ஆத்தி
7	<i>Bauhinia tomentos</i>	Iruvathi	இருவாத்தி
8	<i>Buchanania axillaris</i>	Kattuma	காட்டுமா
9	<i>Borassus flabellifer</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkamaram	முருக்கமரம்
11	<i>Bobax ceiba</i>	Ilavu, Sevvilavu	இலவு
12	<i>Calophyllum inophyllum</i>	Punnai	புன்னை
13	<i>Cassia fistula</i>	Sarakondrai	சரக்கொன்றை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கொன்றை
15	<i>Chloroxylon sweitenia</i>	Purasamaram	புரசு மரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Manjalllavu	கோங்கு, மஞ்சள் இலவு
17	<i>Cordia dichotoma</i>	Naruvuli	நருவுளி.
18	<i>Creteva adansoni</i>	Mavalingum	மாவிலங்கம்
19	<i>Dillenia indica</i>	Uva, Uzha	உசா
20	<i>Dillenia pentagyna</i>	SiruUva, Sitruzha	சிறு உசா
21	<i>Diospyro sebenum</i>	Karungali	கருங்காலி
22	<i>Diospyro schloroxylon</i>	Vaganai	வாகனை
23	<i>Ficus amplissima</i>	Kalltchi	கல் இச்சி
24	<i>Hibiscus tiliaceou</i>	Aatrupoovarasu	ஆற்றுப்புலரசு
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயா மரம், ஆயிலி
27	<i>Lannea coromandelica</i>	Odhiam	ஒதியம்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மருது
29	<i>Lepisanthus tetraphylla</i>	Neikottaimaram	நெய் கொட்டடை மரம்
30	<i>Limonia acidissima</i>	Vila maram	விலா மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	அரம்பா, பிசின்பட்டை
32	<i>Madhuca longifolia</i>	Illuppai	இலுப்பை
33	<i>Manilkara hexandra</i>	UlakkaiPaalai	உலக்கை பாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழமரம்
35	<i>Mitragyna parvifolia</i>	Kadambu	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுணா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வெள்ளை நுணா
38	<i>Phoenix sylvestre</i>	Eachai	ஈச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	புங்கம்

  
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40	<i>Premna mollissima</i>	Murruai	முன்னை
41	<i>Premna serratifolia</i>	Narumurruai	நறு முன்னை
42	<i>Premna tomentosa</i>	Malaipoovarasu	மலை புவரசு
43	<i>Prosopis cinerea</i>	Varui maram	வன்னி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வேண்ணாங்கு
46	<i>Pterospermum xylocarpum</i>	Polavu	புலவு
47	<i>Puthranjiva roxburghii</i>	Karipala	கறிபாலா
48	<i>Salvadora persica</i>	Ugaa Maram	ஊகா மரம்
49	<i>Sapindus emarginatus</i>	Manipungan, Soapukai	மணிப்புங்கன் சோப்புக்காய்
50	<i>Saraca asoca</i>	Asoca	அசோகா
51	<i>Streblus asper</i>	Piray maram	பிராய் மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	எட்டி
53	<i>Strychnos potatorum</i>	Therthang Kottai	தேத்தான் கொட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia belleric</i>	Thandri	தான்றி
56	<i>Terminalia arjuna</i>	Ven marudhu	வெண் மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Thespesia populnea</i>	Puvarasu	புவரசு
59	<i>Walsuratrifoliata</i>	valsura	வாலசுரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பாளை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கொடுக்காப்புளி

#### Discussion by SEIAA and the Remarks:-

The proposal was placed in the 557<sup>th</sup> Authority meeting held on 08.10.2022. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the period 3 years confining to the ultimate depth of mining upto 40m BGL and the quantity of 2,29,340 cu.m of Rough Stone, & 15,042 cu.m of Gravel alone as per approved mining plan issued by the Department of Geology & Mining 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 conditions in addition to the following conditions and conditions stated therein vide Annexure 'B'.


1. The project proponent shall prepare mine closure plan considering mineable quantity of 60168 cu.m of Weathered rock.

#### **Annexure 'B'**

2. Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
3. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
4. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.

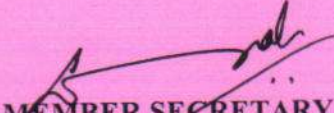
  
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5. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
6. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
7. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
8. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
9. The committee shall furnish the Emergency Management plan within the cluster.
10. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
11. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
  - a) Soil health & bio-diversity.
  - b) Climate change leading to Droughts, Floods etc.
  - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
  - d) Possibilities of water contamination and impact on aquatic ecosystem health.
  - e) Agriculture, Forestry & Traditional practices.
  - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
  - g) Bio-geochemical processes and its foot prints including environmental stress.
  - h) Sediment geochemistry in the surface streams.
12. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
13. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.
14. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

  
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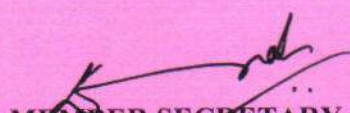


15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
16. Impact on surrounding agricultural fields around the proposed mining Area.
17. Erosion Control measures.
18. Impact on soil flora & vegetation around the project site.
19. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
20. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.
21. 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.
22. 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.
23. 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.
24. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
25. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
26. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
27. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
28. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
29. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

  
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30. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.
31. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
32. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.
33. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.
34. The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.
35. 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.
36. 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.
37. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
38. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
39. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.
40. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

  
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41. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.
42. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.

#### **A. STANDARD TERMS OF REFERENCE**

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

  
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Report.


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

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

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

  
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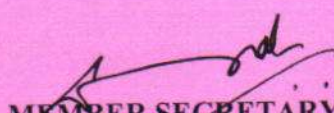
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification /

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

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

  
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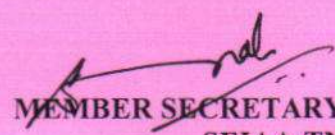
(other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

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


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

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

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

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

  
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In this connection, the project proponent has to furnish the action plan.

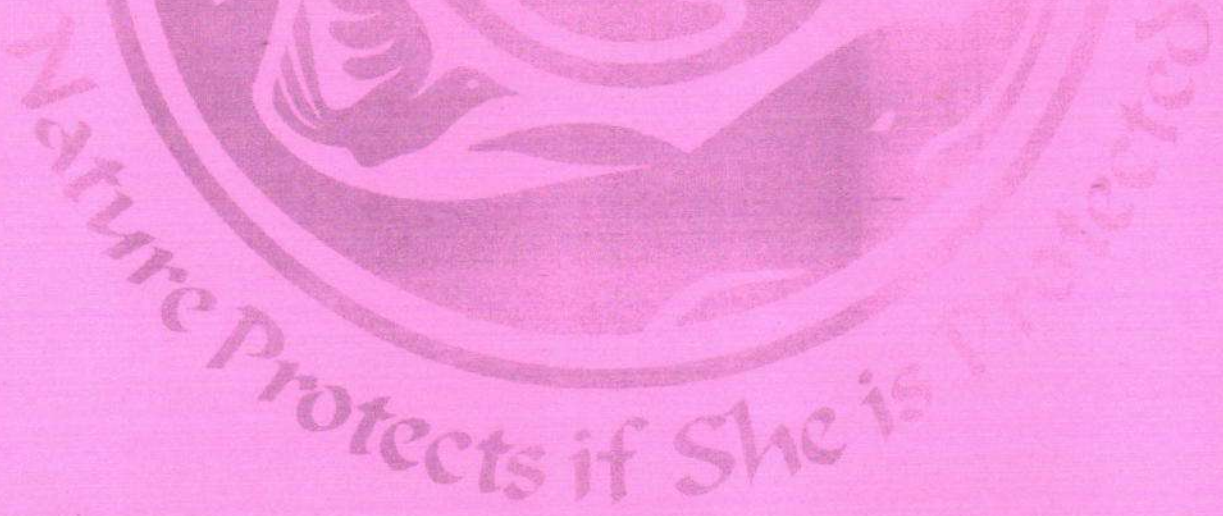
**Besides the above, the below mentioned general points should also be followed:-**

- 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 2<sup>nd</sup> December, 2009, 18<sup>th</sup> March 2010, 28<sup>th</sup> May 2010, 28<sup>th</sup> June 2010, 31<sup>st</sup> December 2010 & 30<sup>th</sup> September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.
  - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
  - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
  - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29<sup>th</sup> August, 2017.

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**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, 1<sup>st</sup>& 2<sup>nd</sup> 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, Dindigul District.
7. The EO/BDO, Kolumankondan Village, Palani Taluk, Dindigul District
8. Stock File.



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**TOR COMPLIANCE**

S.No	ToR Points	Reply	Pg. No
<b>A. ToR in Addition to Standard ToR</b>			
1	The PP shall furnish DFO letter in regard to shortest distance of Reserve Forest & protected areas/Wildlife sanctuaries & wild life corridors etc. within 25 Km radius.	There are no forests or environmentally sensitive areas such as sanctuaries within the 10km radius of the project.	--
2	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.	This is a proposed project. No mining has been carried out in this lease area so far by the proponent.	2-11
3	The Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	Pit slope stability plan is provided under section 7.7, Chapter-VII	7-6
4	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/1 Class mines manager appointed by the proponent.	Affidavit enclosed Annexure - 13	--
5	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast	Controlled blasting will be carried out in this project. Various control measures will be planned to reduce ground vibratory conditions to sustainable statutory limits as provided under section 4.4.2.1, Chapter-IV.	4-14



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

	site.		
6	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	Agreed	--
7	<p>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</p> <p>a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?</p> <p>b) Quantity of minerals mined out.</p> <p>c) Highest production achieved in any one year</p> <p>d) Detail of approved depth of mining.</p> <p>e) Actual depth of the mining achieved earlier.</p> <p>f) Name of the person already mined in that leases area.</p> <p>g) If EC and CTO already obtained, the copy of the same shall be submitted.</p> <p>Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</p>	This is a proposed quarry. No mining operations have been carried out in this lease so far.	2-11
8	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	<ul style="list-style-type: none"> <li>Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II.</li> <li>The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III.</li> </ul>	2-6 3-2



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

	should clearly show the land use and other ecological features of the study area (core and buffer zone).		
9	The PP shall carry out Drone video survey covering the cluster, Green belt , fencing etc.,	Will be submitted	--
10	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.	<ul style="list-style-type: none"> <li>Photographs of the site are provided in Chapter-II.</li> <li>Green netting will be carried out around the lease periphery.</li> </ul>	2-8
11	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.	<ul style="list-style-type: none"> <li>The details of the geological and mineable reserves are provided in Table No.2.2, Chapter-II.</li> <li>The mining method will be Opencast semi mechanized mining using jackhammer drilling, blasting, excavation through excavator &amp; mineral transport through tippers.</li> <li>The production schedule during plan period is given in Table No.2.5, Chapter-II.</li> <li>Anticipated Impacts of the mining operations and mitigation measures are discussed elaborately in Chapter-IV.</li> </ul>	2-10 2-12 4-1
12	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
13	The Project Proponent shall conduct a detailed hydro-geological study considering the contour map of the water	Details of hydrogeological scenario of this project is provided under section 3.6, Chapter-III.	3-38



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

	table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, odai, canals, ponds etc. within 1 km (radius) for both monsoon and non-monsoon seasons by a reputed institution / University to assess the impacts on the wells due to quarrying activity vice versa on the quarrying operations.		
14	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 2022 to February 2023) and detailed in Section 3.3 to 3.5 of Chapter-III. The details of traffic is provided under Section 4.9, Chapter-IV.	3-9 & 3-32  4-23
15	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The baseline monitoring carried out for this project reflects the cumulative impact of these existing quarries. Considering that the lease period of the existing quarry will be coming to an end shortly, this proposed quarry will serve more as a replacement for the existing quarry to ensure meeting the present Roughstone demands.	7-6
16	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	The non-monsoon water requirement for this project will be 10.0 KLD and the monsoon quantity will be 5.0 KLD. The required water will be procured from outside agencies initially. Later, water collected in the mine pit will be used to meet the needs.	2-15
17	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	<ul style="list-style-type: none"> <li>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.</li> <li>The land use pattern at present and</li> </ul>	3-27



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	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.	at the end of the quarrying period has been provided under section 4.5.1, Chapter-IV. <ul style="list-style-type: none"> <li>The post mining land use has been provided in Table No. 4.14. .The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.</li> </ul>	<b>4-16</b>
<b>18</b>	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease. such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Besides, there is no proposal for overburden dump outside the lease area.	<b>2-12</b>
<b>19</b>	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not applicable	--
<b>20</b>	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.	<ul style="list-style-type: none"> <li>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.</li> <li>Towards surface runoff management, a garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.4, Chapter-IV.</li> </ul>	<b>4-9</b>

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		<ul style="list-style-type: none"> <li>The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.</li> </ul>	
21	<b>Impact on local transport infrastructure due to the Project should be indicated.</b>	From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Details of the traffic study is provided under section 4.9, Chapter-IV.	<b>4-23</b>
22	<b>A tree survey study shall be carried out (nos., name of the species. age, diameter etc.,) both within the mining lease applied area &amp; 300m buffer zone and its management during mining activity.</b>	The details of flora in the core zone and the buffer zone are provided from Table No.3.24–3.25, Chapter-III. No adverse impact on bio diversity and flora/fauna status due to project operations is envisaged. Positive impacts will arise due to well-planned reclamation measures.	<b>3-34</b>
23	<b>A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.</b>	Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	<b>7-4</b>
24	<b>Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF&amp; CC accordingly.</b>	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.	<b>7-1</b>
25	<b>The Public hearing advertisement shall be published in one major National daily and</b>	Agreed	--





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	one most circulated vernacular daily.		
26	The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.	Agreed	--
27	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	The details of flora in the core zone and the buffer zone are provided from Table No.3.24–3.25, Chapter-III.	3-34
28	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 50m safety zone for odai is left. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 1160 trees will be planted in and around the lease area. Details are given in Table No.4.16, Chapter-IV.	4-20
29	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	--



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30	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-1
31	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Details about Risk Assessment has been provided under section 7.3, Chapter-VII.	7-1
32	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, Chapter-IV.	4-22
33	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.	<ul style="list-style-type: none"> <li>• Details of the socio economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III.</li> <li>• 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.</li> </ul>	3-8
34	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Nearby villages were visited for conducting study to know about socio-economic conditions, including aspirations and requirements of the people for a better living and collected relevant data. The details are provided under section 3.2.4, Chapter-III.	3-8



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35	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	There is no litigation pending against the project.	--
36	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.	<ul style="list-style-type: none"> <li>• The proposed Roughstone 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, health, infrastructural etc.</li> <li>• Direct employment to about 32 people and indirect employment to scores of people.</li> <li>• 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 for all the three projects together. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.</li> </ul>	8-1
37	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.	Not Applicable	--
38	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Will be submitted.	--
39	Concealing any factual information or submission of false/fabricated data and	Agreed	--



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	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"		
<b>B.Additional ToR</b>			
1	The project proponent shall prepare mine closure plan considering mineable quantity of 60168cu.m of Weathered rock.	Yes. Will be done in consultation with AD mines.	
2	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	The Environmental Management Cell will also act as a Cluster Management Committee. The activities to be undertaken by this committee is provided under section 10.2.2, Chapter-X.	10-2
3	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Agreed	--
4	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed	--
5	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Environmental Monitoring Schedule is provided under Table 6.1, Chapter-X	6-2
6	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and	Risk assessment and disaster management plan is provided under section 7.3, Chapter-VII.	7-1



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	evacuation plan.		
7	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Agreed	--
8	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	The 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.	7-4
9	The committee shall furnish the Emergency Management plan within the cluster.	Replied in point no.6	--
10	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	The details of occupational health and safety is provided under section 4.8, Chapter-IV.	4-22
11	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & bio-diversity. b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local	Provided under Table 4.15, Chapter-IV.	4-17



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	<p>people.</p> <p>d) Possibilities of water contamination and impact on aquatic ecosystem health.</p> <p>e) Agriculture, Forestry &amp; Traditional practices.</p> <p>f) Hydrothermal/Geothermal effect due to destruction in the Environment.</p> <p>g) Bio-geochemical processes and its foot prints including environmental stress.</p> <p>h) Sediment geochemistry in the surface streams.</p>		
12	<p>The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation &amp; safety.</p>	<p>The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain of length 700m will be constructed around the quarry and will be connected to a settling pond with silt traps.</p> <p>There is a seasonal odai passing on the southern side of the lease area for which 50m safety distance is maintained. Earthen bund formation in this side within the lease will be done. Good plantation will also be carried out in the safety zone. Besides, 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. 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.</p>	4-10

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13	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Replied under point no. 6	--
14	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Provided under section 10.2.2, Chapter-IX.	10-2
15	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	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.	3-32
16	Impact on surrounding agricultural fields around the proposed mining Area.	Due to poor soil condition and non-availability of perineal water source, no major agricultural activity is carried out in and around the lease area. Only patches of plantation are observed in few places in the monsoon season based on water availability.	4-18
17	Erosion Control measures.	Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in this quarry. As such there will not be any wash out due to stock pile or waste dumps. The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain of length 660m 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	4-9



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		structures diagram is given in Figure No 4.4, Chapter-IV.	
18	<b>Impact on soil flora &amp; vegetation around the project site.</b>	The significance of impact on biological environment due to mining and allied activities on various fronts is provided under Table 4.15, Chapter-IV.	<b>4-17</b>
19	<b>Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers. &amp; any ecological fragile areas.</b>	Replied in point 17 and 18.	--
20	<b>The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.</b>	Will be submitted	--
21	<b>As per the MoEF&amp; 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.</b>	Agreed	--
22	<b>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.</b>	Considering that the quantum of production is less, only 1 excavator, 4 tippers will be engaged. These equipments 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 1160 number of plants will be planted in and around the lease area.	<b>4-3</b>





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23	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.	3-32
24	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	The post mining land use has been provided in Table No. 4.16. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-20
25	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	There is no major perennial waterbody in close proximity of the lease area.	4-17
26	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	<ul style="list-style-type: none"> <li>• Soil samples were collected in 3 locations in the core and buffer zone to analyse the physiochemical characteristics of the soil in the area. The soil quality data is provided in Table No.3.19, Chapter-III.</li> <li>• The soil map is provided in Figure No.3.20, Chapter-III.</li> </ul>	3-27  3-41
27	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.	3-32
28	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 6.	--
29	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	There is a seasonal odai passing on the southern side of the lease area for which 50m safety distance is maintained. Earthen bund formation in this side within the lease will be done. Good plantation will also be carried out in the safety zone. Besides, there is no proposal to discharge any effluent into	4-10



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		this water body. 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.	
30	<b>The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.</b>	<ul style="list-style-type: none"> <li>• Detailed environmental management plan is provided in Chapter-X.</li> <li>• The environmental management cost is provided under Table No.10.1, Chapter-X.</li> <li>• Disaster management plan is provided under section 7.3.1, Chapter-VII.</li> </ul>	<b>10-9</b>  <b>7-3</b>
31	<b>The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil &amp; below soil carbon stock.</b>	Considering that the quantum of production is less, only 1 excavator, 4 tippers will be engaged. These equipments 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 1160 number of plants will be planted in and around the lease area.	<b>4-3</b>
32	<b>The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.</b>	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.	<b>4-17</b>
33	<b>The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.</b>	Due to poor soil condition and non-availability of perineal water source, no major agricultural activity is carried out in and around the lease area. Only patches of plantation are observed in few places in the monsoon season based on water availability.	<b>4-18</b>



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34	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	The post mining land use has been provided in Table No. 4.16. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-20
35	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.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The land use pattern details are provided under section 4.5.1, Chapter-IV.</li> <li>• Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area.</li> </ul>	3-32  4-16
36	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.	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
37	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
38	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and	Details of hydrogeological scenario of this project is provided under section 3.6, Chapter-III.	3-38



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	documentation in this regard may be provided, covering the entire mine lease period.		
39	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
40	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Details about Risk Assessment has been provided under section 7.3, Chapter-VII.	7-1
41	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	7-4
42	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed environmental management plan is provided under Chapter-X.	10-1

<b>A. Standard ToR</b>			
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	This is a proposed project. No mining has been carried out in this lease area so far by the proponent.	2-11



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2	<b>A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given</b>	Precise Area Communication letter received from the Assistant Director, Dep. of Geology & Mining, Dindigul vide Rc.No.50/2022 (Kanimam) dated 04.05.2022.	<b>A-1</b>
3	<b>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.</b>	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 the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	<ul style="list-style-type: none"> <li>• Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II.</li> <li>• The geology and geomorphology map is provided in Figure No.3.18, 3.19, Chapter-III. The Lithology map and Soil map are provided under Figure No. 3.20, Chapter-III.</li> <li>• The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III.</li> </ul>	<b>2-6</b>  <b>3-39</b> <b>3-40</b> <b>3-41</b> <b>3-2</b>
5	<b>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.</b>	Replied in Standard ToR point no.4	--
6	<b>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.</b>	Not Applicable	--
7	<b>It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its</b>	<ul style="list-style-type: none"> <li>• The proponent will frame a well-planned environmental policy. Its details are provided under Section</li> </ul>	<b>10-2</b>



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	Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	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.	<b>10-3</b>
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII. This being an opencast mine, subsidence is not applicable. The impact due to ground vibrations due to blasting is given in para 4.3.2, Chapter-IV.	<b>7-1</b>  <b>4-8</b>
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.	<b>3-2</b>
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.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The land use pattern at present and at the end of the quarrying period has been provided under section 4.5, Chapter-IV.</li> <li>• At the end of the life of the mine, an area of 1.50Ha of mined out area will be left as a water body. 0.02Ha will be</li> </ul>	<b>3-27</b>  <b>4-16</b>



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		mine roads, 0.01Ha will be infrastructure, 0.25Ha will be covered with vegetation and 0.551Ha will be unutilized area.	
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	--



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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 and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.	4-17
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	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.	3-32





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	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.	Not Applicable	--
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable	--
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be	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.	7-4



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	shifted or not. The issues relating to shilling of village(s) including their R&R and socio-economic aspects should be discussed in the Report.		
22	<p>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 predominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.</p>	<ul style="list-style-type: none"> <li>The baseline data on micro-meteorology, ambient air quality, Water quality, noise level, soil and flora &amp; fauna are collected during Winter Season (Dec 2022 to Feb 2022 and detailed in para 3.3 to 3.5 of Chapter-III.</li> <li>Monitoring stations were selected taking into account, wind direction and location of sensitive receptors.</li> <li>Free silica composition in PM10 sample has been done and the values are found to be Below Detectable Limit (DL 0.05mg/m<sup>3</sup>) which is well within the prescribed limit of 5mg/m<sup>3</sup>.</li> </ul>	<p>3-9 3-32</p>
23	<p>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.</p>	<ul style="list-style-type: none"> <li>Air quality modeling details are furnished in para 4.2.2 and its continuous sub paras in Chapter-IV of EIA report.</li> <li>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.</li> <li>The model simulations are done for the air pollutant arising from the mining operations, namely, PM10,</li> </ul>	<p>4-3</p>



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		<p>PM2.5. Ground Level Concentration (GLC) have been computed using hourly meteorological data.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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 56.2 µg/m<sup>3</sup> to 79.2 µg/m<sup>3</sup> and with respect to PM2.5 are in the range of 28.3 µg/m<sup>3</sup> to 36.2 µg/m<sup>3</sup> which are within the statutory limits in each case.</li> </ul>	<b>4-5 &amp; 4-6</b>
24	<p><b>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.</b></p>	<p>The total water requirement for this project will be 10.0 KLD comprising 1.0 KLD for drinking water and domestic use, 8.0 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.</p>	<b>4-8</b>
25	<p><b>Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.</b></p>	Not Applicable.	--
26	<p><b>Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the</b></p>	<ul style="list-style-type: none"> <li>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,</li> </ul>	<b>4-9</b>

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	Project, if any, should be provided.	<p>before outlet. etc.</p> <ul style="list-style-type: none"> <li>• Towards surface runoff management, a garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.4, Chapter-IV.</li> <li>• The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.</li> </ul>	
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.	<ul style="list-style-type: none"> <li>• There is a seasonal odai passing on the southern side of the lease area for which 50m safety distance is maintained. Earthen bund formation in this side within the lease will be done. Good plantation will also be carried out in the safety zone. Besides, 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. 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.</li> <li>• The ultimate pit depth of mining is 45m. 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.</li> </ul>	4-10
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	<ul style="list-style-type: none"> <li>• The ultimate pit depth of mining is 45m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and</li> </ul>	3-38

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	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.	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.	
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 for the same.	The area applied for quarry lease exhibits almost plain topography. The ultimate pit depth of mining is 45m. 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.	2-2  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	In the lease area, safety barrier 7.5m around the periphery and 50m safety zone for odai is left. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 1160 trees will be planted in and around the lease area. Details of the same is provided under Table No.4.16, Chapter-IV.	4-20



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	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.	From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Details of the traffic 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.	2-15
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	At the end of the life of the mine, an area of 1.50Ha of mined out area will be left as a water body. 0.02Ha will be mine roads, 0.01Ha will be infrastructure, 0.25Ha will be covered with vegetation and 0.551Ha will be unutilized area. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-20
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	Details of occupational health and safety aspects are given under the subsections of Para 4.8, Chapter-IV.	4-22

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	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	<ul style="list-style-type: none"> <li>• Details of the socio economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III.</li> <li>• 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.</li> </ul>	3-8
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.	<ul style="list-style-type: none"> <li>• 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 &amp; priority it will be implemented. Its details are provided in Para 4.7, Chapter-IV</li> </ul>	4-22
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.	<ul style="list-style-type: none"> <li>• Detailed Environmental Management plan and its implementation, etc., are furnished in Chapter X.</li> </ul>	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.	<p>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.</p> <p>The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and</p>	7-1



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		the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu.	
40	<b>Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.</b>	There is no litigation pending against the project.	--
41	<b>The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.</b>	<ul style="list-style-type: none"> <li>• The cost of the project is Rs. Rs.83,68,600/-.</li> <li>• Towards EMP measures, Rs.20.86 Lakhs is allocated under capital cost. Besides, Rs.18.78 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.</li> </ul>	<b>4-21 10-9</b>
42	<b>A Disaster management Plan shall be prepared and included in the EIA/EMP Report.</b>	The disaster management plan has been provided under section 7.3.1, Chapter-VII.	<b>7-3</b>
43	<b>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.</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Direct employment to 32 people and indirect employment to scores of people.</li> <li>• 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</li> </ul>	<b>8-1</b>



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		near the lease area will be benefited.	
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# **CHAPTER - I**

## **INTRODUCTION**

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 PURPOSE OF THE REPORT:**

Thiru T.Kumaresh proposes to operate a **Rough Stone and Gravel Quarry** Survey No. at 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu and has initiated action towards obtaining environmental clearance.

It is proposed to mine 2,29,340 m<sup>3</sup> of Roughstone, 15,042 m<sup>3</sup> of Gravel, 60,168m<sup>3</sup> of Weathered for a period of 5 years upto a depth of 40m as per approved ToR as against the mining plan approved quantity of 2,33,610 m<sup>3</sup> of Roughstone, 15,042 m<sup>3</sup> of Gravel, 60,168m<sup>3</sup> of Weathered for a period of 5 years upto a depth of 45m.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius cluster along with this subject project works out to >5 Ha. Hence, this proposal is considered under Category – B1 and as per MoEF & CC notification necessitates preparation of EIA/EMP report and public hearing. The details of the quarries located within the 500m radius of the project is given vide **Annexure-3**. A cumulative impact study has been carried out and furnished in **Para 7.3, Chapter-VII**.

This EIA/EMP report is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide letter no. SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022 dated 08.10.2022 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:**

**Table 1.1 Identification of project**

1	<b>Project Name</b>	Rough Stone and Gravel Quarry of Thiru T. Kumaresh
2	<b>Extent</b>	2.331 Ha
3	<b>Production</b>	Roughstone - 2,29,340 m <sup>3</sup> Gravel - 15,042 m <sup>3</sup> Weathered Rock - 60,168 m <sup>3</sup>
4	<b>Ultimate Depth</b>	40m
5	<b>Land Classification</b>	Consent registered Patta Land

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

6	Location	Survey Number: 388/1A2(P)
		Village: Kolumankondan
		Taluk: Palani
		District: Dindigul
		State: Tamil Nadu

**Table 1.2: Identification of Project Proponent**

1	Proponent Name	Thiru T. Kumaresh
2	Address	S/o Thangamuthu Madukkarai (Via), Coimbatore District – 641105
3	Contact Number	9842208272.
4	Email-ID	tkumaresh373@gmail.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	Statutory Approval	Authority	Letter Number and Date	Reference
1.	Precise Area Communication Letter	Assistant Director, Dep. of Geology & Mining, Dindigul	Rc.No.50/2022 (Kanimam) dated 04.05.2022	Annexure-1
2.	Mining Plan Approval	Assistant Director, Dep. of Geology & Mining, Dindigul	Rc.No.50/2022 (Kanimam) dated 09.05.2022	Annexure-2
3.	Details of other quarries within 500m radius	Assistant Director, Dep. of Geology & Mining, Dindigul	Rc.No.50/2022 (Kanimam) dated 09.05.2022	Annexure-3

Based on the conditions of Precise Area Communication letter, a safety distance of 10m for nearby Government Lands, 50m safety distance for the odai on the southern side, 10m safety distance for cart track on western side is left while selecting the mine boundary.

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

**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, Gravel and Weathered Rock



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5.	<b>Major/Minor Mineral</b>	Minor
6.	<b>Mining method</b>	Opencast Semi mechanized Mining
7.	<b>End use</b>	The top Gravel will be loaded into tipper and marketed to needy customers. The excavated weathered rock and rough stone will be loaded into tipper and transported to the needy buyers for producing crusher aggregates, M Sand.

**Table 1.5: Location of the project**

S.No	Particulars	Details
1.	<b>Location</b>	Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu
2.	<b>Corner Coordinates</b>	<b>Latitude:</b> 10°33'33.00"N to 10°33'41.74"N <b>Longitude:</b> 77°26'32.44"E to 77°26'37.19"E
3.	<b>Toposheet Number</b>	58 F / 6, 7, 10 & 11

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

### 1.3.1 IMPORTANCE TO THE COUNTRY AND REGION:

Rough stone and Gravel from this quarry will meet the domestic demand. There is good demand for the Gravel & stone aggregate, which is the main requisite for the construction/ infrastructure sector. Gravel quarried from this lease will be directly transported to the nearby end users. The boulders will be marketed to the nearby crushers for producing crusher aggregates.

This project in the area will provide both direct and indirect employment opportunities through allied opportunities in logistics, trading, repairing works etc., improved per capita income for local people, improved social welfare facilities like infrastructural build-up, improvement in facilities due to the proposed CER activities of the proponent etc.

### 1.4 SCOPE OF THE STUDY:

Particulars	Details
<b>Proposal no</b>	SIA/TN/MIN/81184/2022
<b>File no</b>	9430/2022
<b>SEAC meeting for issue of TOR</b>	312 <sup>th</sup> Meeting held on 16.09.2022
<b>SEIAA meeting for</b>	557 <sup>th</sup> Meeting held on 08.10.2022



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

<b>issue of TOR</b>	
<b>Terms of Reference</b>	Received from SEIAA, Tamil Nadu vide their Lr No.SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022. Dated:08.10.2022.
<b>Baseline Data Collection</b>	Carried out by Creative Engineers & Consultants , Chennai for Winter Season (Dec 2022 to Feb 2023)

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

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

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

\* \* \* \* \*



# **CHAPTER - II**

## **PROJECT DESCRIPTION**

## **CHAPTER 2**

### **PROJECT DESCRIPTION**

#### **2.1 TYPE OF PROJECT:**

This proposal involves quarrying of 2,29,340 m<sup>3</sup> of Roughstone, 15,042 m<sup>3</sup> of Gravel, 60,168m<sup>3</sup> of Weathered for a period of 5 years upto a depth of 40m as per approved ToR as against the mining plan approved quantity of 2,33,610 m<sup>3</sup> of Roughstone, 15,042 m<sup>3</sup> of Gravel, 60,168m<sup>3</sup> of Weathered for a period of 5 years upto a depth of 45m.

#### **2.2 NEED & JUSTIFICATION FOR THE PROJECT:**

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

- Availability of good quality proved reserves
- Techno economic viability of the scheme
- Better approachability to the project 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: Mine site description**

<b>Location</b>	Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu
<b>Survey No.</b>	388/1A2(P)
<b>Coordinates</b>	<b>Latitude:</b> 10°33'33.00"N to 10°33'41.74"N <b>Longitude:</b> 77°26'32.44"E to 77°26'37.19"E
<b>Nearest Village</b>	Kolumankondan – 0.9km (NW) side.
<b>Nearest Town</b>	Palani – 14km - SE
<b>Nearest Highway</b>	SH-192 (Melkaraipatty – Palani) – 1.0 Km (W)
<b>Nearest Railway Station</b>	Pushpathur – 4.5 Km (SW)

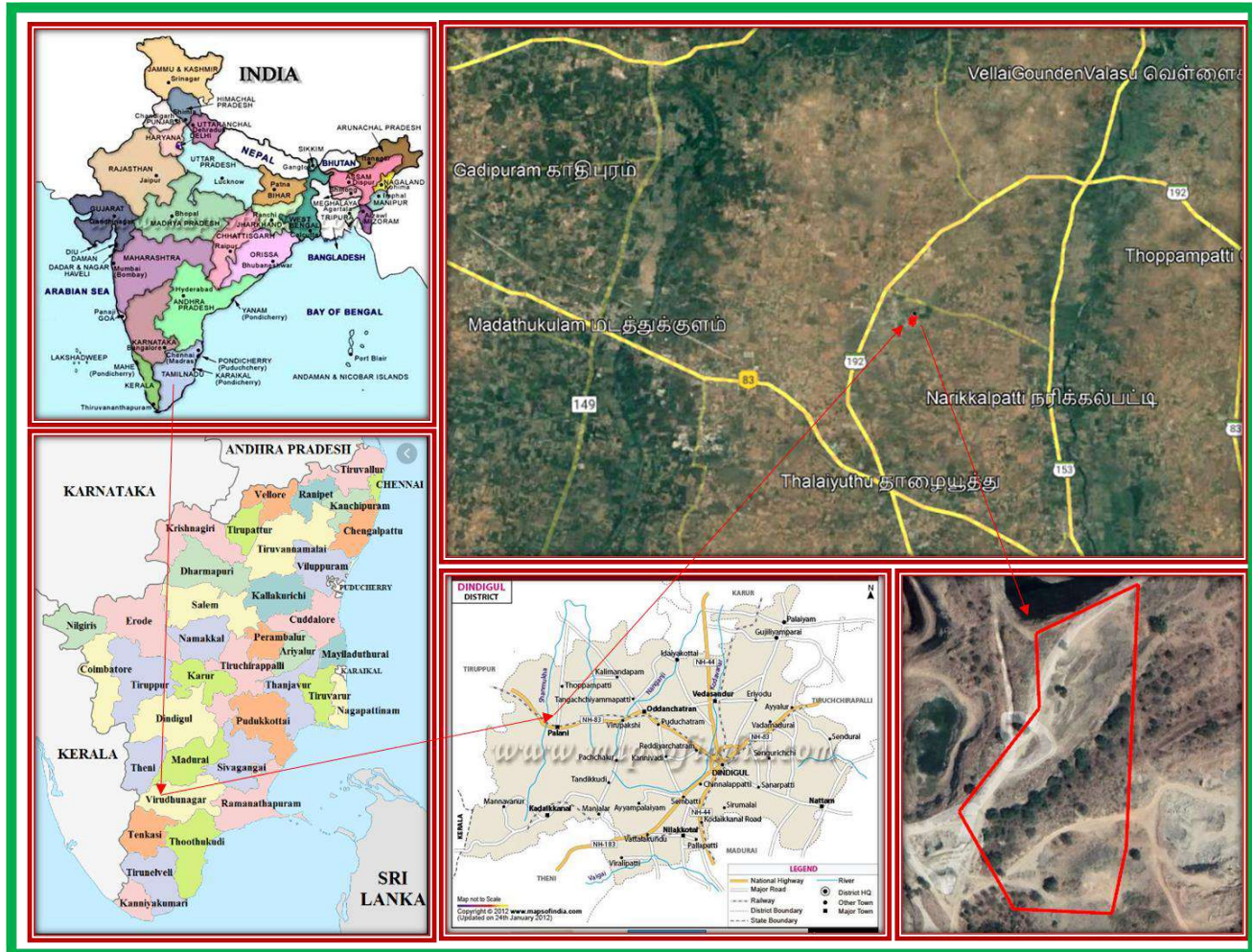


**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

<b>Nearest Airport</b>	Coimbatore – 68.0Km (NW)
<b>Accessibility</b>	There is an existing road from the area leads to Kolumankondan – Korikadavu road on Northern side of the area.
<b>Topography</b>	Plain terrain, dry lands with scarce vegetation.
<b>Nearest Drainage</b>	There is a seasonal odai passing on southern side of the area for which 50m safety distance maintained. Another seasonal odai passing on Northern side and is 240m away from the area.

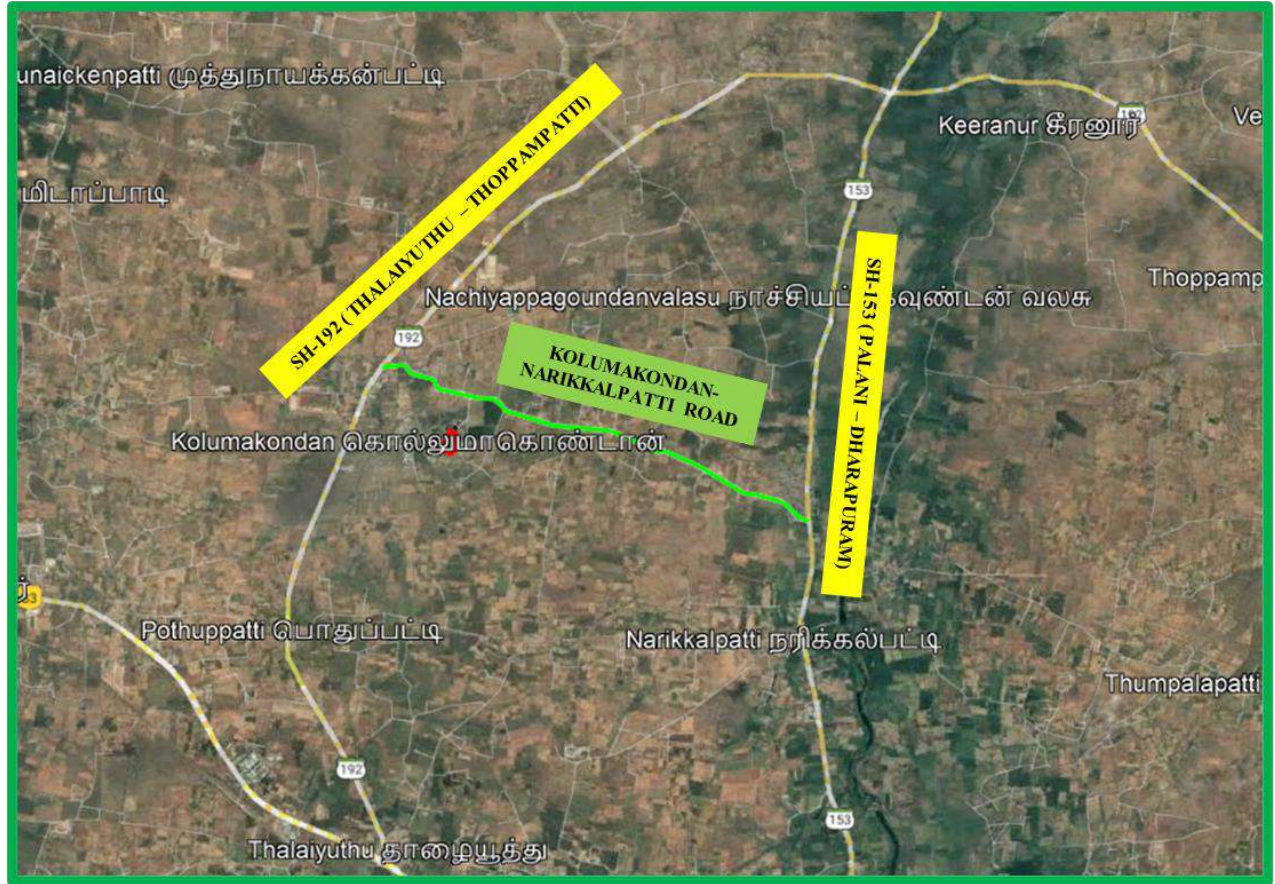
Location map is provided in **Figure No.2.1**. The approachability map is provided in **Figure No.2.2**. Corner co-ordinates of the lease area and satellite imagery are shown in **Figure No. 2.3 & 2.4** respectively. Village map for 500m radius from the lease is shown in **Figure No. 2.5**.

**Figure 2.1: Location Map**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 2.2: Approachability Map**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 2.3: Lease Plan**



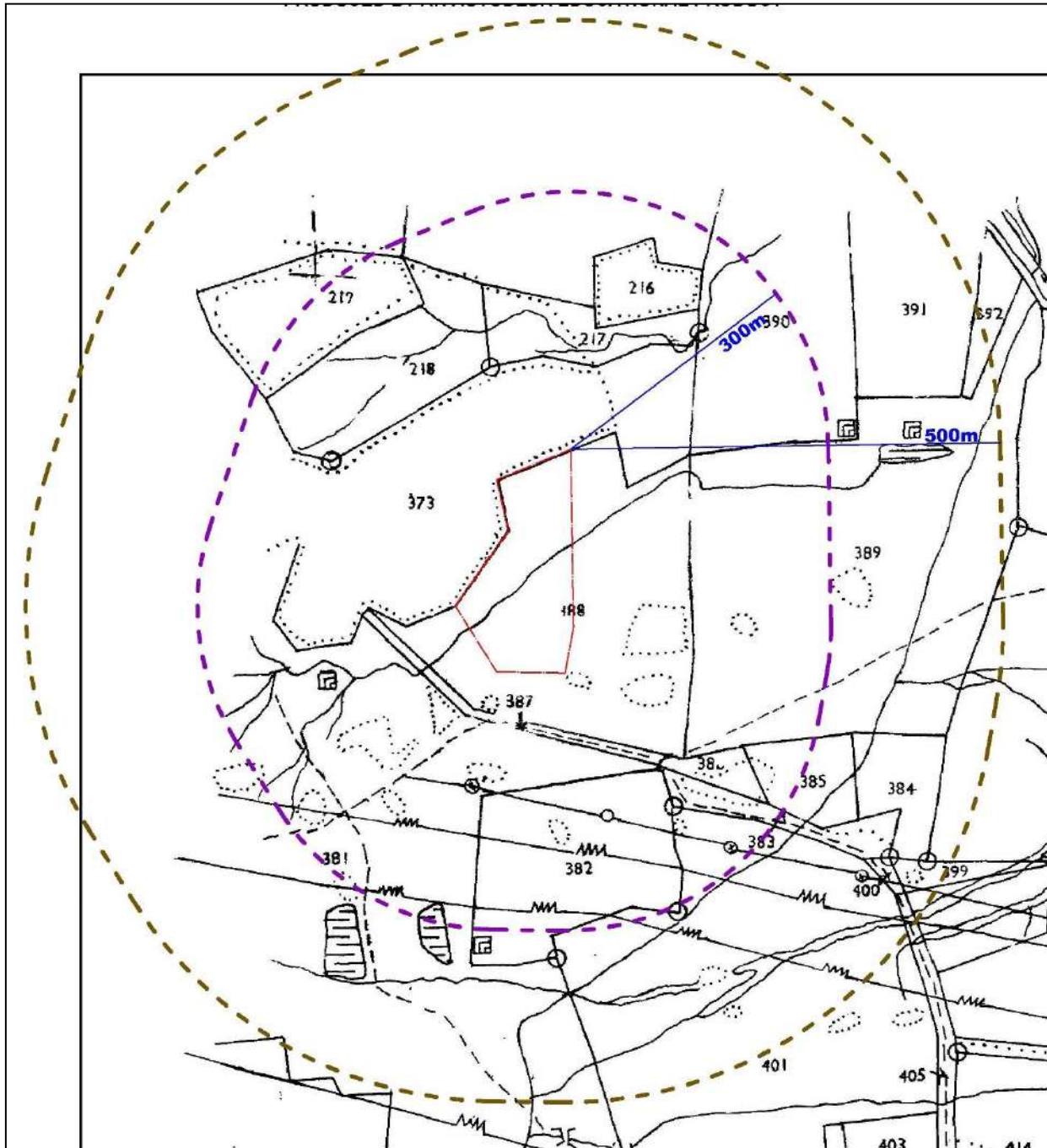
**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 2.5: Village Map**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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**SITE PHOTOGRAPHS**



**2.4 LAND CLASSIFICATION:**

The lease area of 2.331 Ha is a patta land in the name of M/s.Aadith Blue metals vide Patta No-1369. The applicant has obtained consent from Pattadhar. (Annexure No: IV & VII of mine plan report) and got it registered

**2.5 GEOLOGY:**

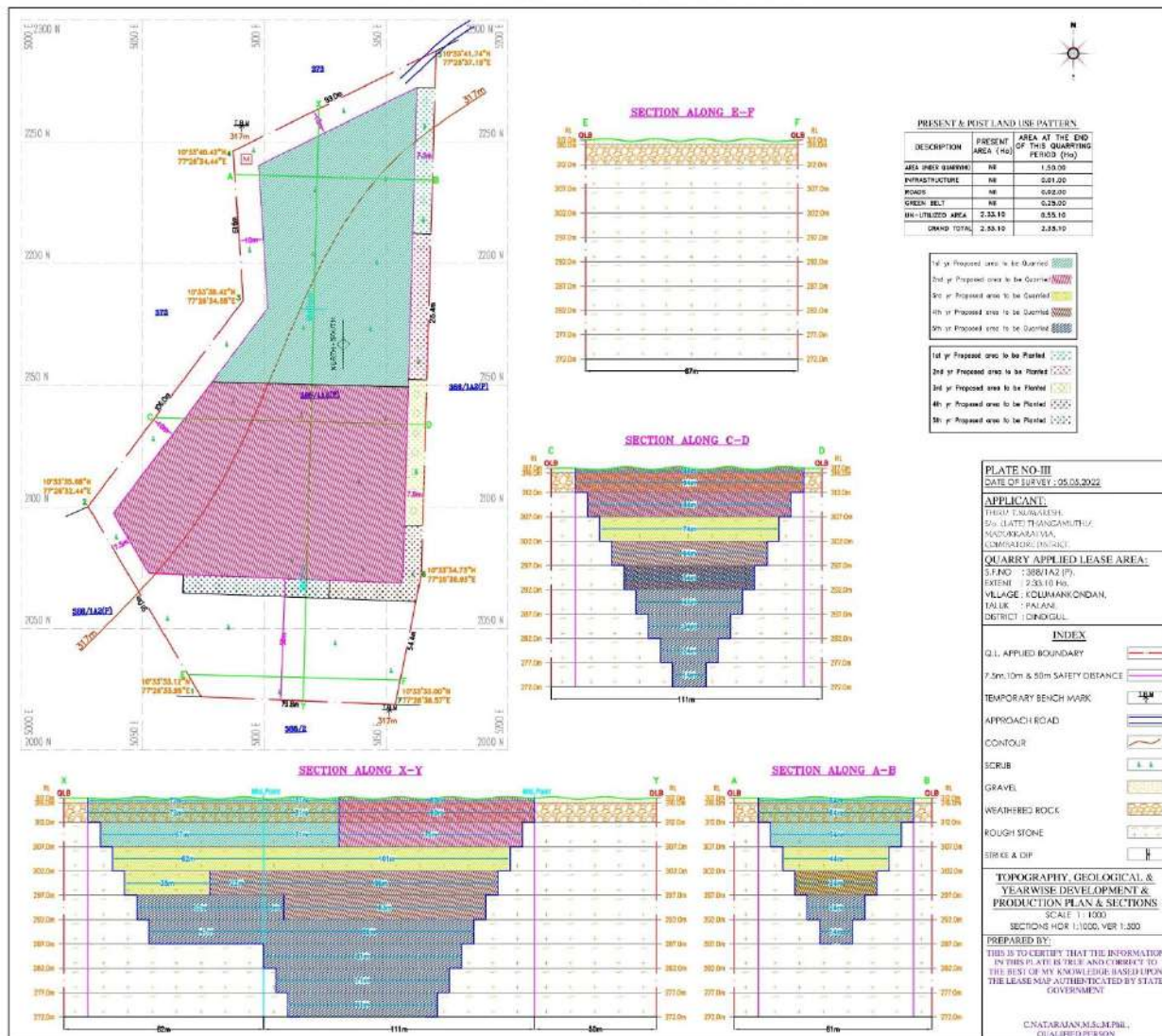
The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite.

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high grade metamorphic rock. The strike of the Charnockite formation is North South with almost vertical dipping. The general geological succession of the area is given as under.

	Age	Rock Formation
1	Recent to Sub recent	Alluvium, Gravel
2	Archaean	Charnockite
3	Archaean	Peninsular Gneiss, and Calc Gneiss

**Figure 2.6: Geological Plan & Cross Section**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**2.6 SIZE AND MAGNITUDE OF THE OPERATION:**

- The mining will be done by open cast semi mechanized mining method.
- Life of mine will be 5 years.
- ToR approved production of 2,29,340m<sup>3</sup> of Rough Stone, 60,168m<sup>3</sup> of Weathered Rock and 15,042m<sup>3</sup> of gravel formation up to 40m depth for the period of Five years.
- There is no waste generation anticipated in this quarry operation since the entire excavated material will be transported to buyers.

**2.6.1 RESERVES:**

**Table 2.2: Geological and Mineable Reserves**

S.No	Type of reserves	Rough stone in m <sup>3</sup>	Weathered rock in m <sup>3</sup>	Gravel in m <sup>3</sup>
1	Geological Resources	9,32,520	93,252	23,313
2	Mineable reserves up to 45m	2,33,610	60,168	15,042
3	Mineable reserves up to 40m	2,29,340	60,168	15,042

The mineable reserves is arrived after considering the safety distance of 7.5m peripheral safety distance, 10m safety distance for government lands and cart track and 50m safety distance for odai.

**2.6.2 MINING METHOD:**

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

**Table 2.3: Details of Equipments**

SI. NO	NAME OF THE EQUIPMENT	CAPACITY	REQUIRED
1	Excavator	TATA Hitachi EX200	1
2	Tipper	5/10 tonnes	4
3	Tractor compressor for drilling	175 CFM	1

**2.7 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION:**

The proponent propose to implement the production immediately after obtaining all the statutory approvals such as CTE, CTO, etc. The proponent will comply with the environmental clearance conditions during mining operations. The schedule of project implementation envisaged for this





**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

project is provided below. This is a tentative schedule subject to various factor, hence unforeseen variations may occur.

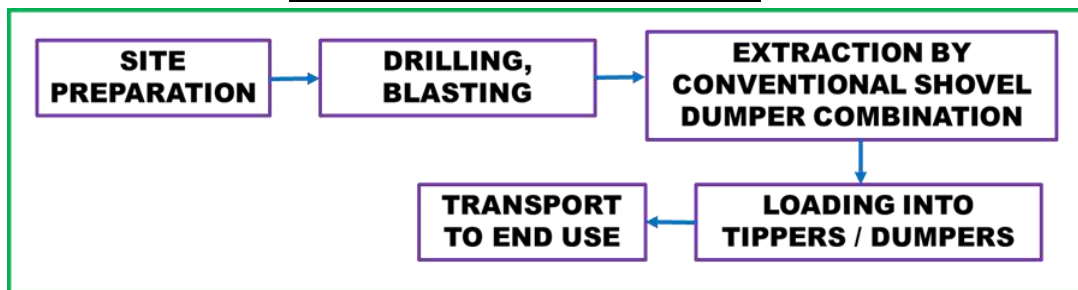
**Table 2.4: Proposed Schedule of Implementation**

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						

**2.8 TECHNOLOGY AND PROCESS DESCRIPTION:**

The quarry operations involve shallow jack hammer drilling, blasting, excavation, loading and transportation of Roughstone to buyers. The production of Roughstone & weathered rock in this quarry involves jackhammer drilling and blasting. The primary boulders are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining. The process flow diagram of this project is provided below.

**Figure 2.7: Process Flow Diagram**



**2.9 PROJECT DESCRIPTION:**

**2.9.1 PAST PRODUCTION:**

This is a proposed project. No mining has been carried out in this lease area so far by the proponent.

**2.9.2 PLAN PERIOD-PRODUCTION & WASTE DISPOSAL:**

During the plan period it is proposed to mine 2,29,340m<sup>3</sup> of Roughstone, 15042m<sup>3</sup> of Gravel and 60168m<sup>3</sup> of Weathered Rock upto a depth of 40m bgl for a period of 5 years. The proposed production during the plan period is given below:



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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**Table 2.5: Production Schedule During Plan Period**

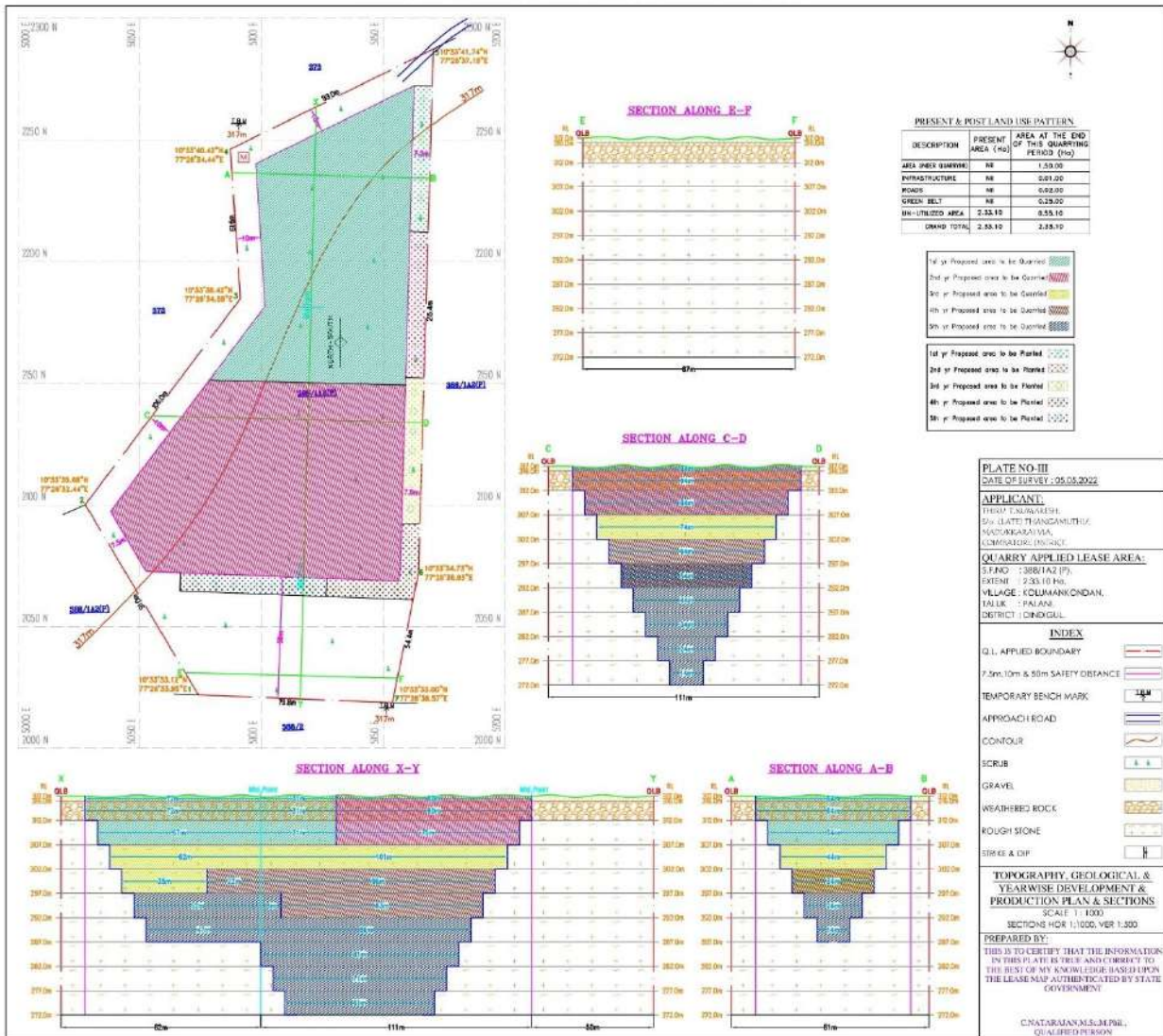
YEAR	ROUGHSTONE (m3)	WEATHERED ROCK (m3)	GRAVEL (m3)
I	31110	30088	7522
II	31500	30080	7520
III	56960	-	-
IV	56870	-	-
V	52900	-	-
<b>Total</b>	<b>229340</b>	<b>60168</b>	<b>15042</b>

**Waste Disposal during Plan Period:**

There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Earth will be used for bund formation, levelling and plantation purposes. The top overburden in the form of Gravel will be loaded into tipper and marketed to needy customers on payment of necessary Fees to Government. The excavated rough stone will be excavated and loaded into tipper to the needy buyers for producing crusher aggregates, M Sand.

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 2.8: Year wise Plan & Cross Section as per AMP**



**2.9.3 CONCEPTUAL STAGE:**

The conceptual pit dimensions is provided below:

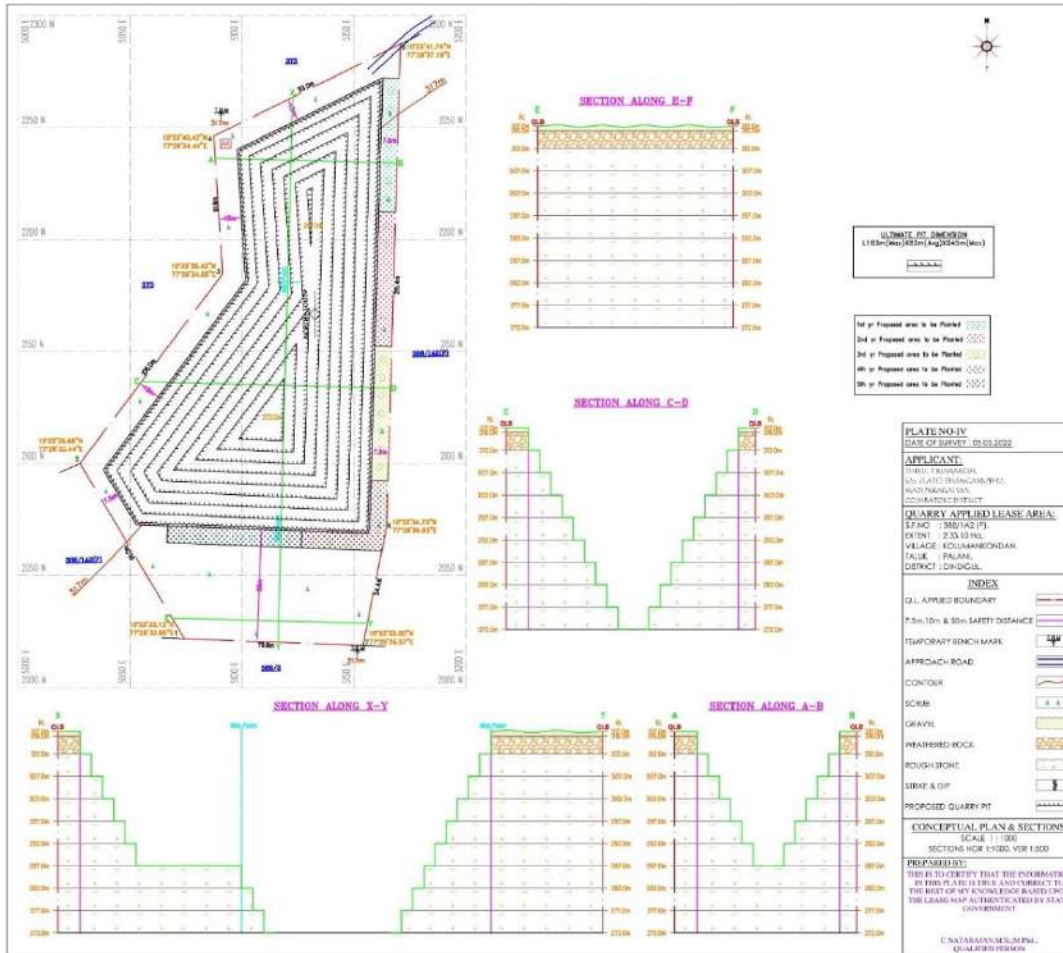
**Table 2.6: Ultimate Pit Dimensions**

LENGTH(M)	WIDTH(M)	DEPTH(M)
183	82	40

The ground water table on the surface in this area is quite deeper. Hence, ground water intersection in not envisaged. The Conceptual Plan & Cross section are shown in **Figure No. 2.11.**

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 2.9: Conceptual Plan & Cross Section as per AMP**



**LAND DEGRADATION/UTILIZATION:**

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

**Table 2.7: Land Use**

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	1.50.00
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.02.00
4.	Green Belt	Nil	0.25.00
5.	Unutilized	2.33.10	0.55.10
	<b>Total</b>	<b>2.33.10</b>	<b>2.33.10</b>

At the end of the life of the mine, an area of 1.50Ha of mined out area will be left as a water body. 0.02Ha will be mine roads, 0.01Ha will be infrastructure, 0.25Ha will be covered with vegetation and 0.551Ha will be unutilized area.

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**2.9.4 PROJECT REQUIREMENTS:**

**Table 2.8: Project Requirements**

<b>Manpower</b>	31 People directly and more than 50 people indirectly	
<b>Water Requirement and Source</b>	<b>Water Requirement: 10 KLD</b>	
	<b>Details</b>	<b>Quantity (KLD)</b>
	Drinking water and Domestic Use	1.0
	Dust Suppression	8.0
	Green belt	1.5
	<b>Total</b>	<b>10.0</b>
	<b>Source:</b> The required water will be procured initially from outside agencies. Later Rain water harvested in the mine sump can also be used.	
<b>Power Requirement</b>	No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.	
<b>Site Services</b>	This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.	
<b>Project Cost</b>	Rs.83,68,600/-	
<b>Funds allocated for socio-economic development</b>	Rs.5.0 Lakhs is allocated under CER budget.	

**2.10 DESCRIPTION OF MITIGATION MEASURES:**

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

**2.11 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY:**

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

**2.12 CONCLUSION:**

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

\* \* \* \* \*



# **CHAPTER - 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 2022 to February 2023) 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 entire lease 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, Dindigul	Dindigul District
		Temperature, Humidity, Wind Speed, Wind Direction	1 Representative Location
3	Ambient Air Quality	PM10, PM2.5, SO2, NOx, CO	1 Core Zone, 4 Buffer Zone
4	Water Quality	Physical and Chemical Parameters	1 Core Zone, 3 Buffer Zone
5	Noise Levels	Ambient Noise	1 Core Zone, 4 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

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.1: Study Area Map**





**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Table 3.2: Environmental Setting of the Study Area**

S.No	PARTICULARS	DETAILS
1	Nearest highway	(SH-192) Melkaraipatty – Palani – 1.0km (W)
2	Nearest Railway station	Pushpathur RS – 4.5km - SW
3	Nearest Airport	Coimbatore – 68Km – NW
4	Nearest major water bodies	<ul style="list-style-type: none"> <li>• Odai – (S) Lease Area</li> <li>• Odai - 240m- N,</li> <li>• Shanmukha Nadi- 4.5km-E,</li> <li>• Amaravathi River- 7.1km-W,</li> </ul>
5	Nearest town/City	Palani – 14km - SE
6	Nearest villages	Pushpathur – 3.8km (SW) Kolumakondan – 0.9km (NW) Kovilampatti – 2.2km (E) Korikadavu – 3.5km (SE)
7	Notified Archaeologically important places, Monuments	Nil within 10m radius
8	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10m radius
9	Reserved / Protected Forests	Nil within 10m radius
10	Defence Installations	Nil within 10 km radius
11	Seismic Zone	Zone – II (Least Active)
12	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, village meetings and discussion.
- Collection of the demographic pattern of villages falling in the area through NIC 2011 census data.

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

- 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 Roughstone, and gravel quarry is located in Kolumankondan Village, Palani Taluk, Dindigul District. The demographic profile of the study area is given below:

**Table 3.3: Buffer Zone Details**

District	Taluk	No. of Villages	No. of Urban Areas
Dindigul District	Palani	21	2
Tiruppur District	Madathukulam	5	4
	Dharapuram		1
2 Districts	3 Taluks	26 Villages	7 Urban Areas

**Table 3.4: Social, Economic and Demographic Profile of the Study Area**

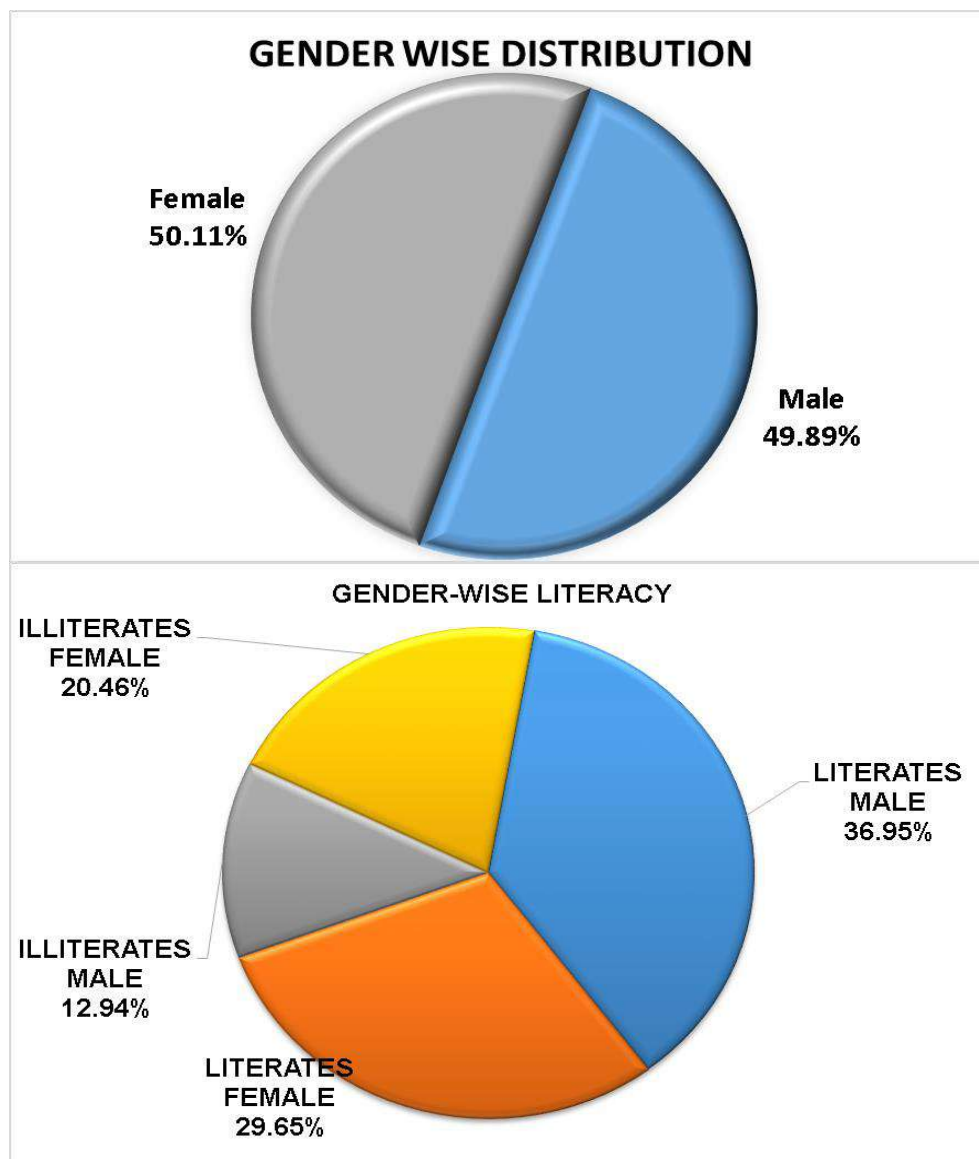
Details	Population	Percentage
<b>A. Gender-wise distribution</b>		
Male Population	77279	49.89
Female Population	77615	50.11
<b>Total</b>	<b>154894</b>	<b>100</b>
<b>B. Caste-wise population distribution</b>		
Scheduled Caste	37901	24.47
Scheduled Tribes	1157	0.75
Other	115836	74.78
<b>Total</b>	<b>154894</b>	<b>100</b>
<b>C. Literacy Levels</b>		
Total Literate Population	103162	66.60
Others	51732	33.40
<b>Total</b>	<b>154894</b>	<b>100</b>
<b>D. Occupational structure</b>		
Main workers	74782	48.30
Marginal workers	7915	5.10
<b>Total Workers</b>	<b>82697</b>	<b>53.40</b>
<b>Total Non-workers</b>	<b>72197</b>	<b>46.60</b>
<b>Total</b>	<b>154894</b>	<b>100</b>

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

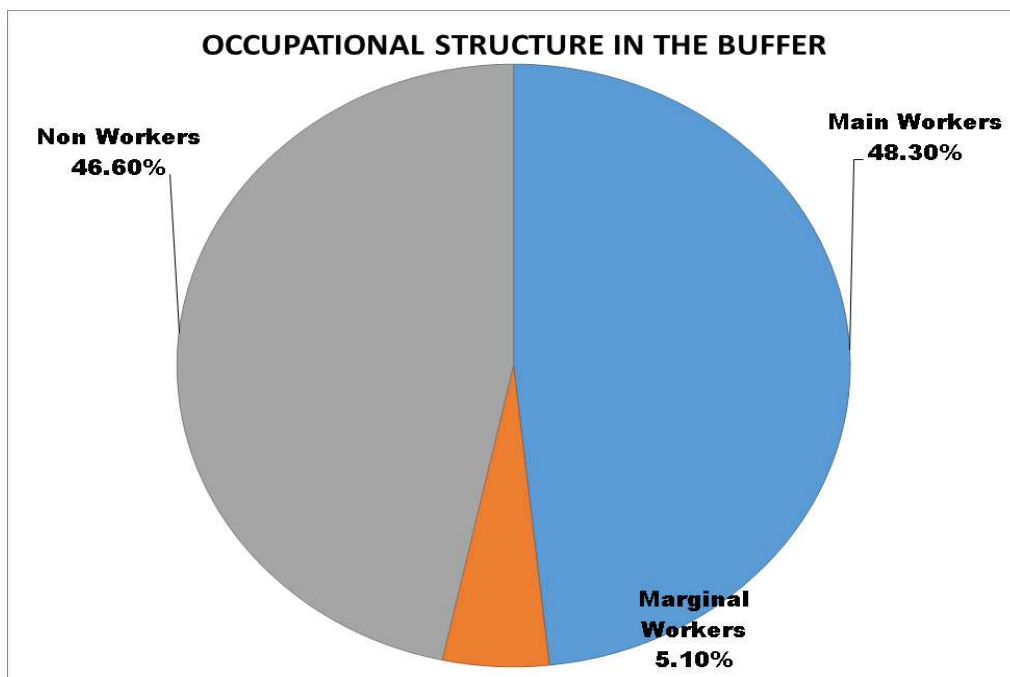
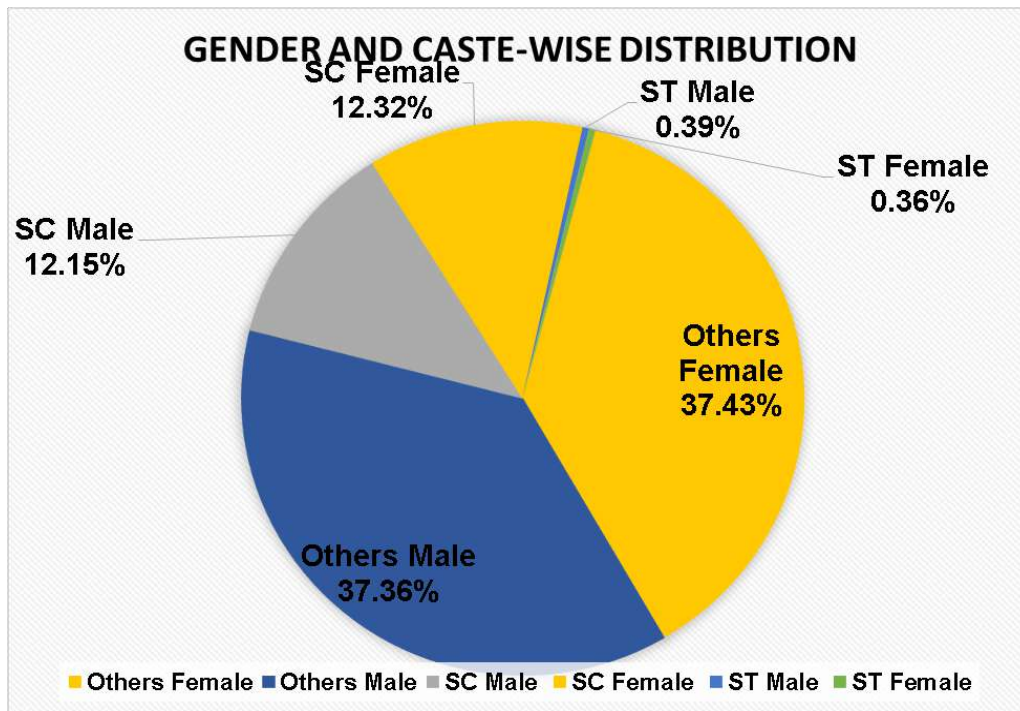
The total population of these 26 rural villages and 7 urban areas is 154894 in which the male population is 77279 (49.89%) and the female population is 77615 (50.11%). This shows that the male and female population ratio is almost equal. Among the total population 0.75% belong to Scheduled Tribes, 24.47 % are Scheduled Caste and the balance 74.78 % people belong to other castes. Among the total population, 66.60% of the people are literate.

The village wise population, literacy levels and occupational structure details are 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**



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**3.2.3 DETAILS OF AMENITIES:**

Based on 2011 census data, regarding the educational facilities, there are totally 61 Primary Schools functioning in these 26 rural villages. 1 village have 8 primary schools, 8 villages have 2 primary schools, 4 villages have 3 primary schools, 3 villages has 4 primary schools ,1 villages have 5 primary schools.

**Table 3.5: Primary Schools in the Buffer Zone Rural Villages**

S.No	No of Rural Villages	Number of primary schools	Totals
1	0	0	0
2	8	1	8
3	8	2	16
4	4	3	12
5	3	4	12
6	1	5	5
7	0	6	0
8	0	7	0
9	1	8	8
<b>Total</b>	<b>25</b>		<b>61</b>

**Table 3.6: Education Facility Availability**

PARTICULARS	Available in village
Govt Primary School	25
Govt Middle School	13
Govt Secondary School	6
Govt Senior Secondary School	1
Govt Arts and Science Degree College	0
Govt Engineering College	0
Govt Medicine College	0
Govt Management Institute	0
Govt Polytechnic	0
Govt Vocational Training School/ITI	0

Better and higher education facilities are available in nearby Palani, Dindigul

**Table 3.7: Healthcare Amenities Availability**

PARTICULARS	Available in village
Community Health Centre	0
Primary Health Centre	0
Primary Health Sub Centre	15
Maternity And Child Welfare Centre	3
TB Clinic	0
Hospital Allopathic	0
Hospital Alternative Medicine	0
Dispensary	0
Veterinary Hospital	6
Mobile Health Clinic	0
Family Welfare Centre	0

Better Healthcare facilities are available in nearby town like Palani, Dindigul

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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**Table 3.8: Infrastructure Facilities**

Particulars	Available in village
Tap Water-Treated	25
Covered Well	16
Hand Pump	9
Tube Wells/Borehole	20
Post office	1
bus services	22
Commercial Bank	4
Cooperative bank	9

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:**

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

- Predominantly the study area is seasonal dry, barren land.
- Reasonably better amenities like approach road bus facility, electricity, mobile phone connectivity, Public Distribution System , banks etc are available.
- Due to poor irrigational availability patches of plantation and agriculture are only observed near the source during the monsoon season.
- Vaying employment pattern is observed.
- Bore well to some extent is the dependable source for drinking water. There are OHT's, Ground level tanks, taps are available .

### **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.

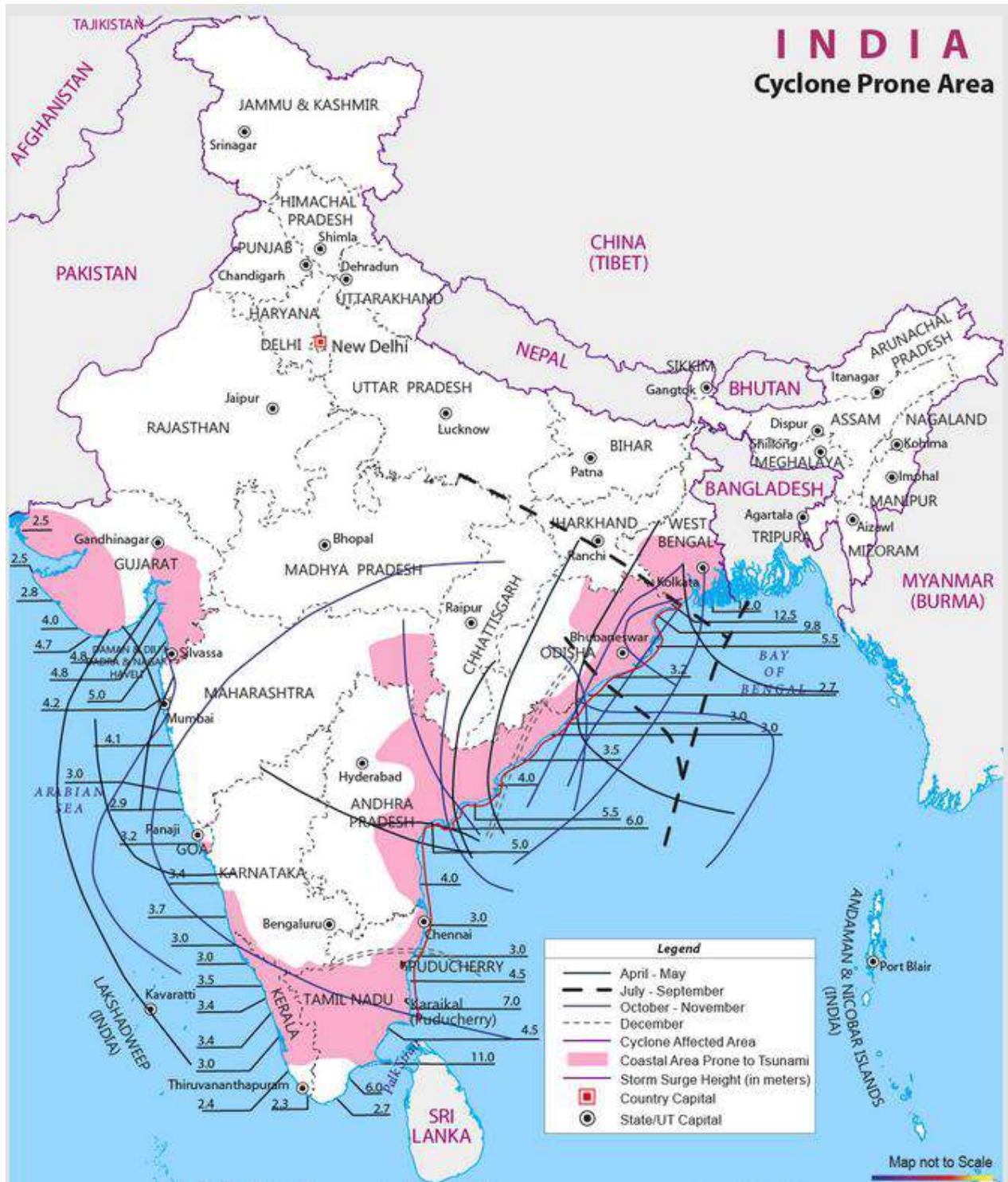
##### **3.3.1.2 Historical Meteorological Data:**

###### **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 15° and 18° 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](http://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.

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.3: History of Cyclonic Storms**



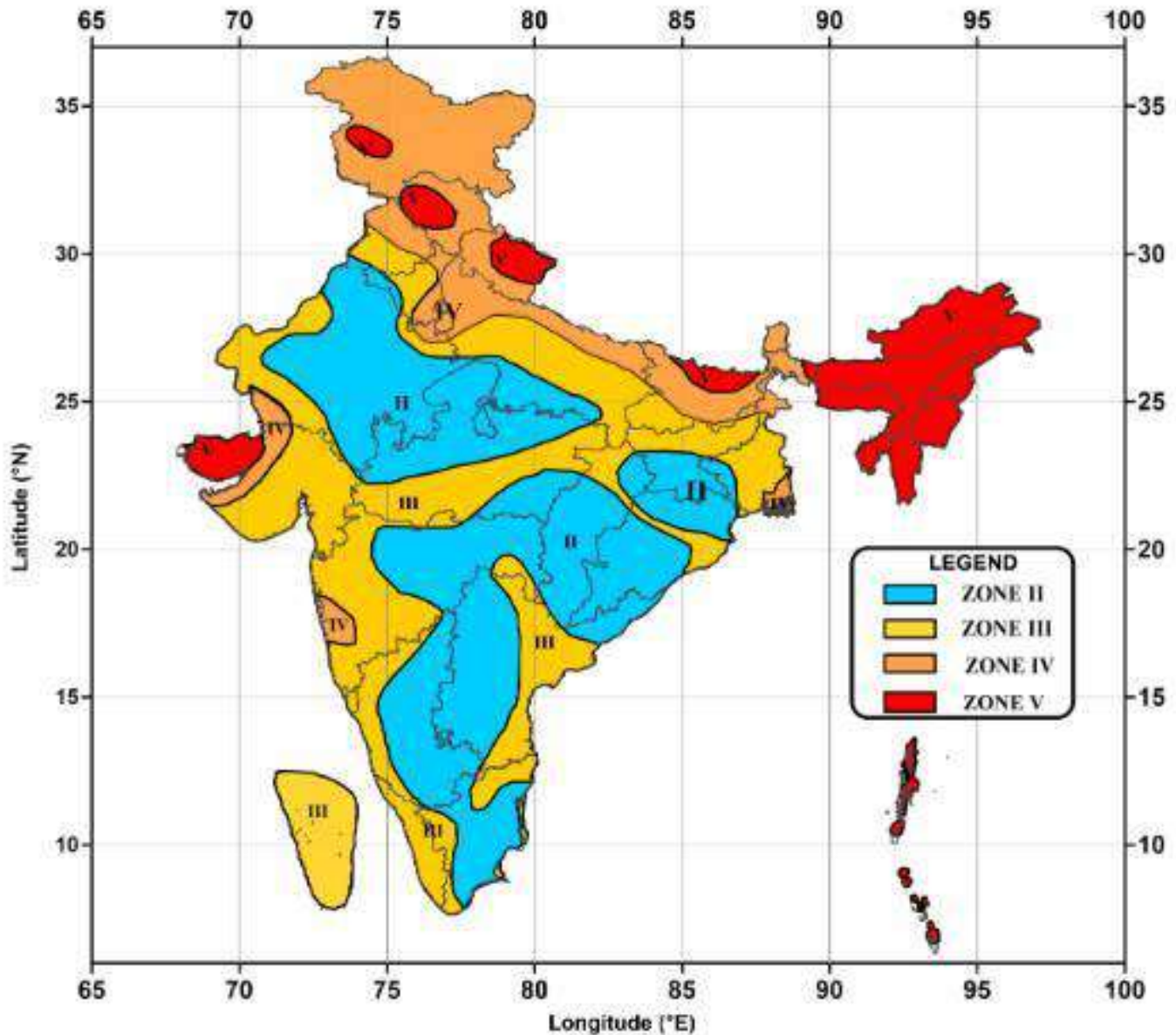


**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**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**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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**C. Climate and Rainfall Data:**

**Rainfall:**

Main rainy season is from October to the middle of January. November is generally the rainiest month.

**Temparture:**

The district enjoys a tropical climate. The period from April to June is generally hot and dry. The weather is pleasant during the period from November to January. The temperature ranging from 22.5°C to 34.3°C in plains and in hilly terrain of the district experiencing a maximum of 22°C in summer and a minimum of 8 °C during winter.

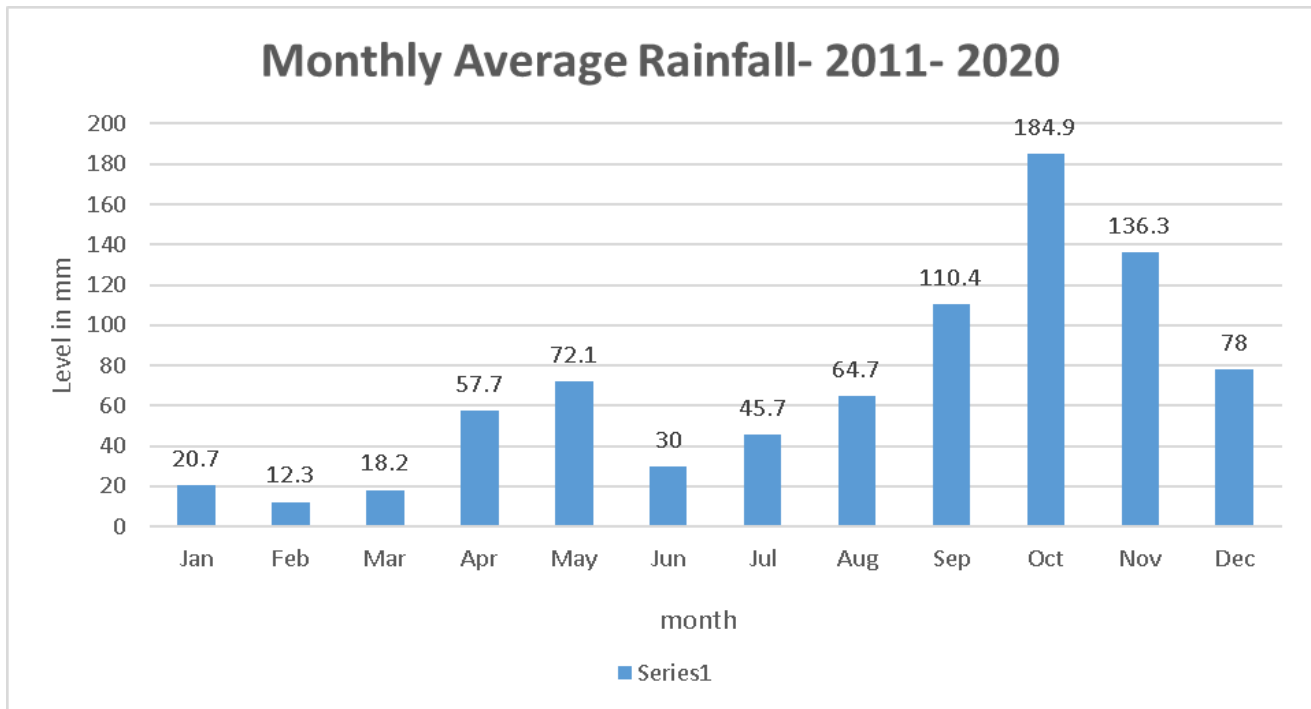
**Table 3.9: Average Annual Rainfall Data (2011-2020)**

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Cumulative
2011	20.28	91.32	33.06	93.41	45.59	500.4	290.16	367.98	236.04	170.96	213.25	59.3	2121.75
2012	3.87	4.51	19.12	159.96	53.25	313.97	268.69	358.01	161.13	185.66	66.96	3.05	1598.18
2013	0.4	31.62	38.31	23.75	33.92	19.13	5.45	71.66	85.18	123.63	43.74	43.63	520.42
2014	2.68	2.93	9.3	13.46	192.57	27.04	11.85	110.59	96.72	285.67	44.57	48.8	846.18
2015	23.41	0.06	24.55	128.84	153.09	61.1	18.63	37.89	114.46	104.25	260.48	84.72	1011.48
2016	0.61	0.3	2.28	5.47	102.77	33.31	73.4	28.8	27.68	122.53	22.91	46.72	466.78
2017	26.99	0.23	35.25	8.5	38.35	29.23	7.28	98.57	94.64	118.44	54.18	11.57	523.23
2018	3.03	3.86	13.45	7.05	114.42	20.82	30.04	20.95	104.2	122.58	116.79	8.82	566.01
2019	0.66	3.62	2.52	24.99	23.02	34.13	26.1	35.55	184.27	194.7	101.21	82.83	713.6
2020	1.59	0	5.58	25.95	53.09	85.27	52.38	111.97	168.35	82.01	183.99	118.69	888.87
Normal	20.7	12.3	18.2	57.7	72.1	30	45.7	64.7	110.4	184.9	136.3	78	831.6

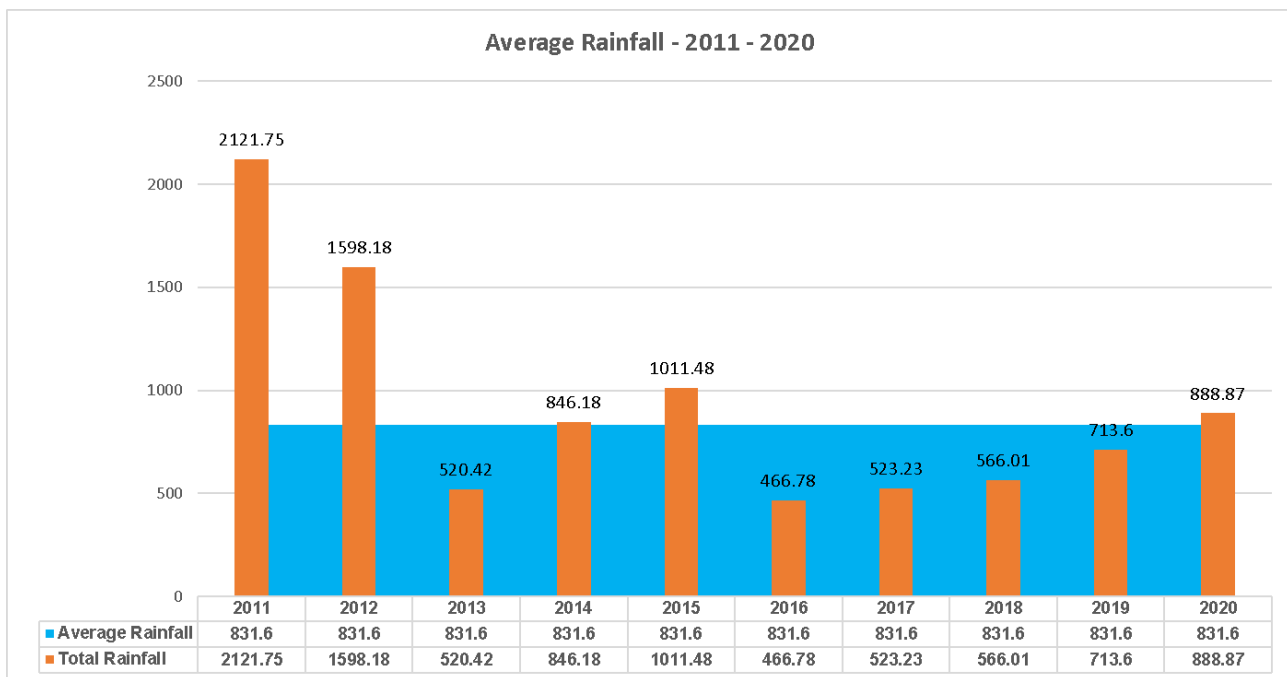
Source – IMD GRID – Dindigul District

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.5: Monthly Average Rainfall**



**Figure 3.6: Average Annual Rainfall**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

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**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:**

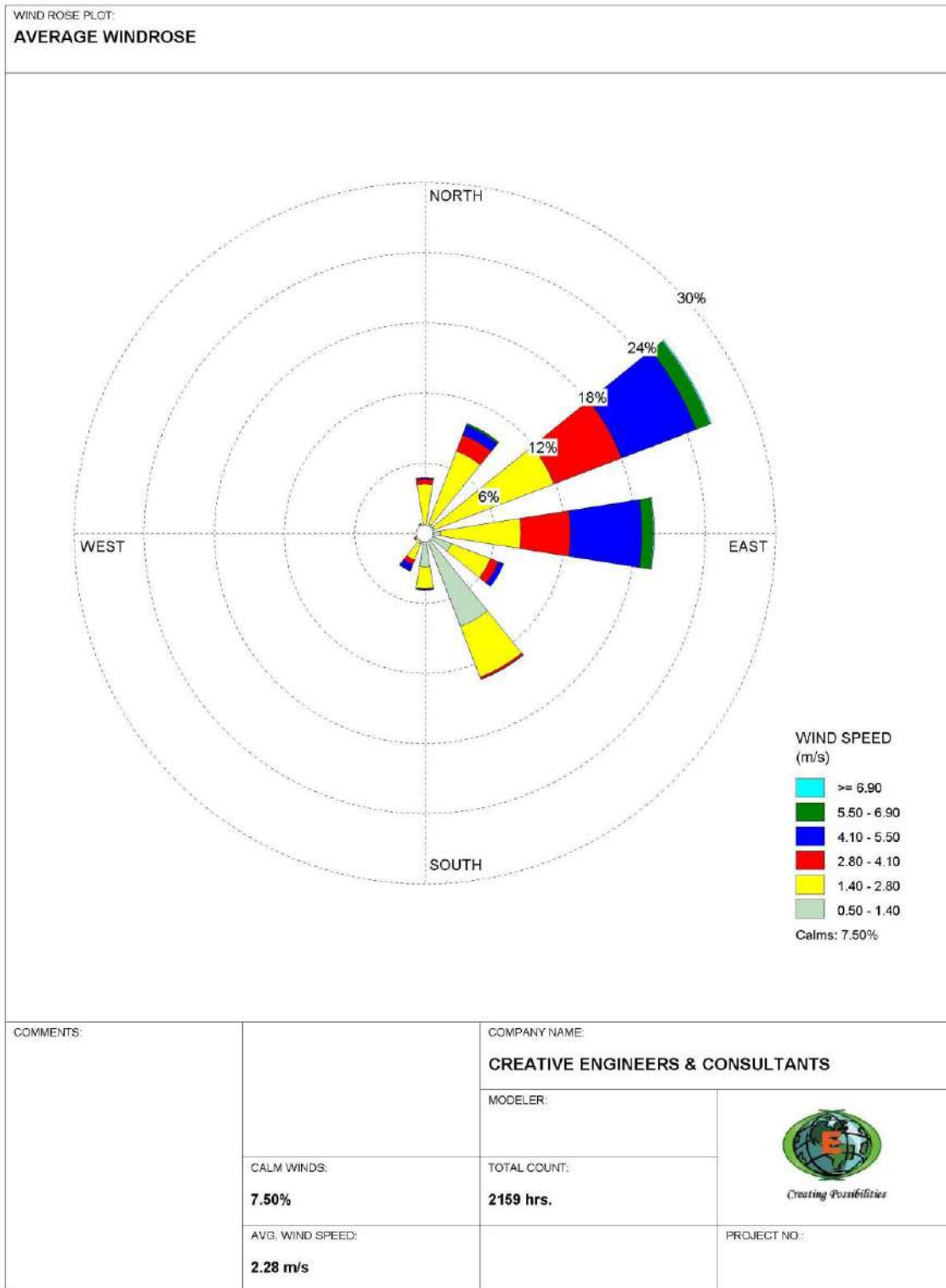
The temperature in the area during the study period ranged from 14.8°C to 34.0°C while the relative humidity varied between 15.0 - 99%. The wind speed during the study period ranged from <1.8 to 25.9 km/h. The predominant wind direction is from NE. The meteorological data are presented in **Table no – 3.10**. The average wind rose is depicted in **Figure No - 3.7**.

**Table 3.10: Meteorological Data**

<b>Season: Winter Season (December 2022 to February 2023)</b>			
<b>S.NO</b>	<b>PARAMETERS</b>	<b>MIN</b>	<b>MAX</b>
1	Temperature In °c	14.8	34.0
2	Humidity in %	15.0	99.0
3	Wind speed in km/hr	<1.8	25.9
4	Predominant wind direction from	NE	

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.7: Average Wind Rose**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**3.3.2 AMBIENT AIR QUALITY (AAQ):**

Ambient Air quality has been assessed through a network of 5 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, 5 numbers of air sampling stations were selected in the area as shown below in Table No.3.12.

- ❖ 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 3.11: Air Quality Monitoring**

1.	<b>Monitoring Period</b>	Winter Season ( Dec 2022 – Feb 2023)
2.	<b>Monitoring Location</b>	The location map showing Ambient Air Quality study stations are shown in <b>Figure No- 3.8.</b>
3.	<b>Methodology</b>	
	<b>Parameter</b>	<b>Protocol</b>
	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.	<b>Monitoring Frequency</b>	2 days in a week, 4 weeks in a month for 3 months in a season.

**Table 3.12: Air Quality Monitoring Locations**

S.NO	LOCATION CODE	LOCATION	DISTANCE FROM CORE ZONE (KM)	DIRECTION
1	A1	Near Mine Lease Area	-	-
2	A2	Kolumakondan Village	0.9km	NW
3	A3	Pothupatti Village	2.5km	SW
4	A4	Ettappanayagapurur Village	1.5km	NE
5	A5	Periya Mottanuthu Village	1.8km	SE

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.8: Ambient Air Quality Study Stations**



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

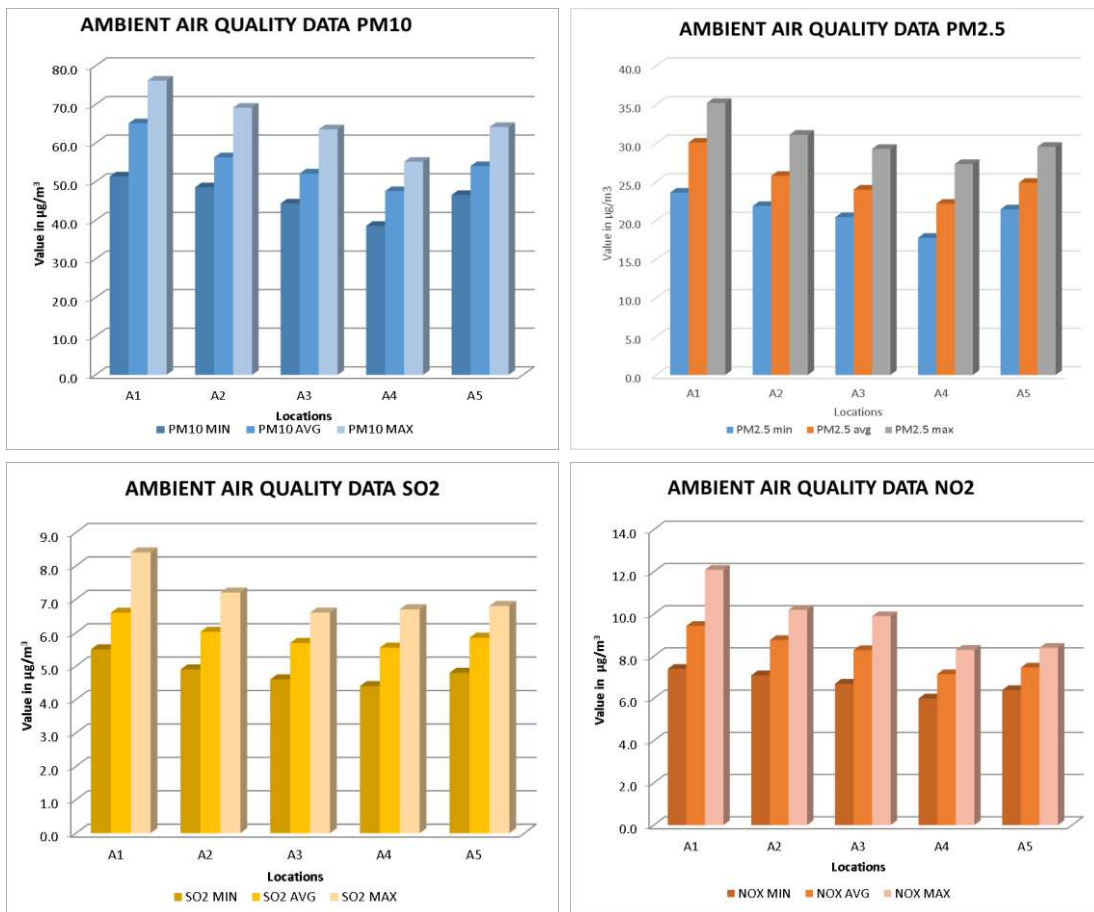
**Table 3.13: Ambient Air Quality Data**

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

PARAMETERS LOCATIONS	Cat.*	PM <sub>10</sub>			PM <sub>2.5</sub>			SO <sub>2</sub>			NO <sub>2</sub>		
		MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX
A1-Near Mine Lease Area	I	51.4	65.2	76.2	23.6	30.1	35.2	5.5	6.6	8.4	7.4	9.4	12.1
A2-Kolumakondan Village	R	48.6	56.3	69.2	21.9	25.8	31.1	4.9	6.0	7.2	7.1	8.8	10.2
A3-Pothupatti Village	R	44.4	52.2	63.6	20.4	24.0	29.3	4.6	5.7	6.6	6.7	8.3	9.9
A4-Ettappanayagapurur Village	R	38.6	47.6	55.2	17.8	22.2	27.3	4.4	5.5	6.7	6.0	7.2	8.3
A5-Periya Mottanuthu Village	R	46.6	54.1	64.2	21.4	24.9	29.5	4.8	5.8	6.8	6.4	7.5	8.4
<b>NAAQ Limits</b>		<b>PM<sub>10</sub></b>			<b>PM<sub>2.5</sub></b>			<b>SO<sub>2</sub></b>			<b>NO<sub>2</sub></b>		
	*	<b>100</b>			<b>60</b>			<b>80</b>			<b>80</b>		
	**	<b>100</b>			<b>60</b>			<b>80</b>			<b>80</b>		

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

**Figure 3.9: Ambient Air Quality Data**





**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**3.3.2.1 Results and Discussion:**

The AAQ monitored data for all locations for above parameters are shown in **Table No - 3.13** and in **Figure No - 3.10**. 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<sub>10</sub> values were in the range of 38.6-76.2 µg/m<sup>3</sup>. PM<sub>2.5</sub> values were in the range of 17.8-35.2 µg/m<sup>3</sup>. SO<sub>2</sub> levels were ranging from 4.4– 8.4 µg/m<sup>3</sup>. NO<sub>2</sub> levels were ranging from 6.0-12.1 µg/m<sup>3</sup>.

The existing Ambient Air Quality levels for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>2</sub>, are within the NAAQ standards prescribed CPCB limits of 100 µg/m<sup>3</sup>, 60 µg/m<sup>3</sup>, 80 µg/m<sup>3</sup> & 80 µg/m<sup>3</sup>. 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<sup>3</sup>)

**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 5 locations. Details of the same has been provided below:

**Table 3.14: Water Quality Monitoring**

1.	<b>Monitoring Period</b>		<b>Winter Season ( Dec 2022 – Feb 2023)</b>		
2.	<b>Monitoring Location</b>		<b>The location map showing water sampling locations are given in Figure No.3.10.</b>		
	<b>Code</b>	<b>Location</b>	<b>Sample Type</b>	<b>Distance</b>	<b>Direction</b>
	W1	Near Mine Lease Area	Bore Well	-	-
	W2	Kolumakondan Village	Borewell	0.9km	NW
	W3	Pothupatti Village	Borewell	2.5km	SW
	W4	Ettappanayagapur Village	Borewell	1.5km	NE
	W5	Periya Mottanuthu Village	Borewell	1.8km	SE
3.	Methodology		Sampling - IS 3025 Part - I		
			Analysis – IS 3025 relevant parts / APHA 23rd Edition		

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.10: Location of Water Sampling Stations**



<b>LEGEND</b> CORE ZONE AREA  HUTMENTS  ROAD  RAILWAY TRACK  FOREST  RIVER 	<b>LOCATION OF WATER SAMPLING STATIONS</b> <b>W1-Near Mine Lease Area</b> <b>W2-Kolumakondan Village</b> <b>W3-Pothupatti Village</b> <b>W4-Ettappanayagapur Village</b> <b>W5-Periya Mottanuthu Village</b>		TOPO SHEET NO - 58-F/6,7, 10&11 <b>ROUGH STONE AND JELLY QUARRY OF THIRU.T.KUMARESH</b>
	LEASE AREA- 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, STATE- TAMILNADU		
	<b>STUDY AREA WITH IN 10KM RADIUS</b>		
	 <b>CREATIVE ENGINEERS &amp; CONSULTANTS</b> 8B/1, BHARATHI MAJAR STREET, EAST TAMBARAM, CHENNAI - 69. PH- 88-44-132519		

**Table 3.15: Summary of Water Quality Data**

Season	Dec 2022 – Feb 2023	
Monitoring Locations	5 locations	
Parameters	Range of values	Limits*
pH at 25 °C	6.98 -7.84	<b>6.5-8.5</b>
Total Dissolved Solids, mg/L	392 - 946	<b>2000</b>
Chloride as Cl-, mg/L	93.4 - 255	<b>1000</b>
Total Hardness (as CaCO <sub>3</sub> ), mg/L	182 - 523	<b>600</b>
Total Alkalinity (as CaCO <sub>3</sub> ), mg/L	155 - 242	<b>600</b>
Sulphates as SO <sub>4</sub> <sup>2-</sup> , mg/L	53.2 - 158	<b>400</b>
Iron as Fe, mg/L	0.03 - 0.06	<b>0.3</b>
Nitrate as NO <sub>3</sub> , mg/L	2.52 - 3.42	<b>45</b>
Fluoride as F, mg/L	0.39 - 0.54	<b>1.5</b>

### 3.3.3.1 Results and Discussion:

The results of the water sample analysis are shown in **Table No - 3.15**. The pH values were ranging in between 6.98 -7.84, TDS values were in the range of 392 - 946mg/L. Chloride values were ranging from 93.4 - 255mg/L. Iron content was found to be in the range 0.03 - 0.06mg/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 during the monitoring period. Details of the same are provided below:

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**Table 3.16: Noise Level Monitoring**

1.	<b>Monitoring Period</b>	Winter Season ( Dec 2022 – Feb 2023)		
2.	<b>Monitoring Location</b>	The location map showing noise monitoring locations are given in <b>Figure No.3.11.</b>		
	<b>Code</b>	<b>Location</b>	<b>Distance</b>	<b>Direction</b>
	N1	Near Mine Lease Area	-	-
	N2	Kolumakondan Village	0.9km	NW
	N3	Pothupatti Village	2.5km	SW
	N4	Ettappanayagapurur Village	1.5km	NE
	N5	Periya Mottanuthu Village	1.8km	SE
3.	<b>Methodology</b>	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.	<b>Monitoring Frequency</b>	Once during monitoring period		

**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Figure 3.11: Location of Noise Sampling Stations**



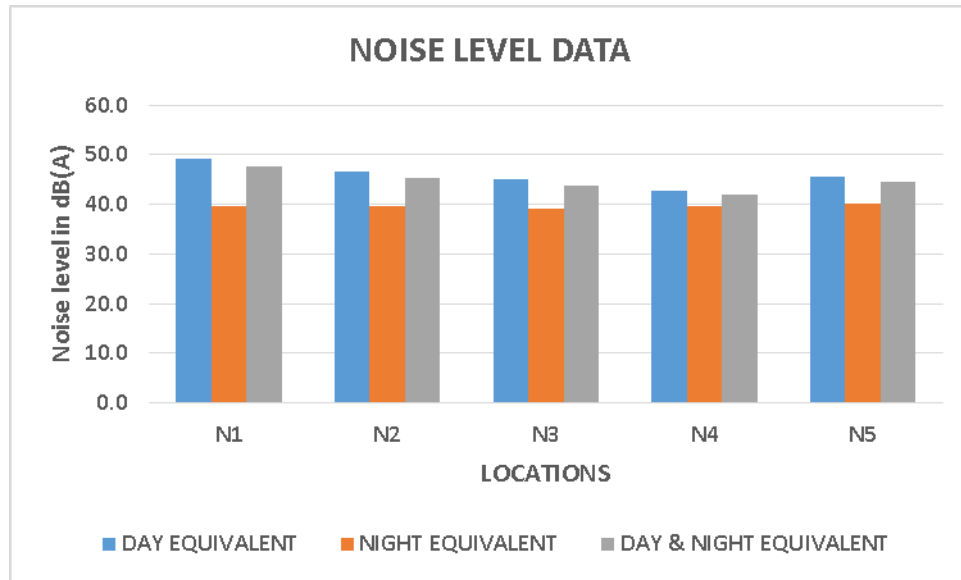
<b>LEGEND</b> CORE ZONE AREA  HUTMENTS  ROAD  RAILWAY TRACK  FOREST  RIVER 	<b>LOCATION OF NOISE SAMPLING STATIONS</b> N1-Near Mine Lease Area N2-Kolumakondan Village N3-Pothupatti Village N4-Ettappanayagapudur Village N5-Periya Mottanuthu Village	TOPO SHEET NO - 58-F/6,7, 10&11
		<b>ROUGH STONE AND JELLY QUARRY OF THIRU.T.KUMARESH</b> LEASE AREA- 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, STATE - TAMILNADU <b>STUDY AREA WITH IN 10KM RADIUS</b>  <b>CREATIVE ENGINEERS &amp; CONSULTANTS</b> 5B/4, BHARATHIWAJAN STREET, EAST TAMBARAM, CHENNAI - 65. PH- 90-6541236 65

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**Table 3.17: Ambient Noise Level in dB (A)**

Date and time of monitoring	N1	N2	N3	N4	N5
Day Equivalent	49.3	46.5	44.9	42.8	45.7
Night Equivalent	39.6	39.7	39.0	39.7	40.2
Day & Night Equivalent	47.7	45.2	43.7	42.0	44.5
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-3.17**. 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 42.8 dB(A) to 49.3 dB(A) and night Equivalent Noise (Leq-d) levels ranged between 39.0 dB(A) to 40.2 dB(A). While comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.

**3.3.5 SOIL CHARACTERISTICS:**

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

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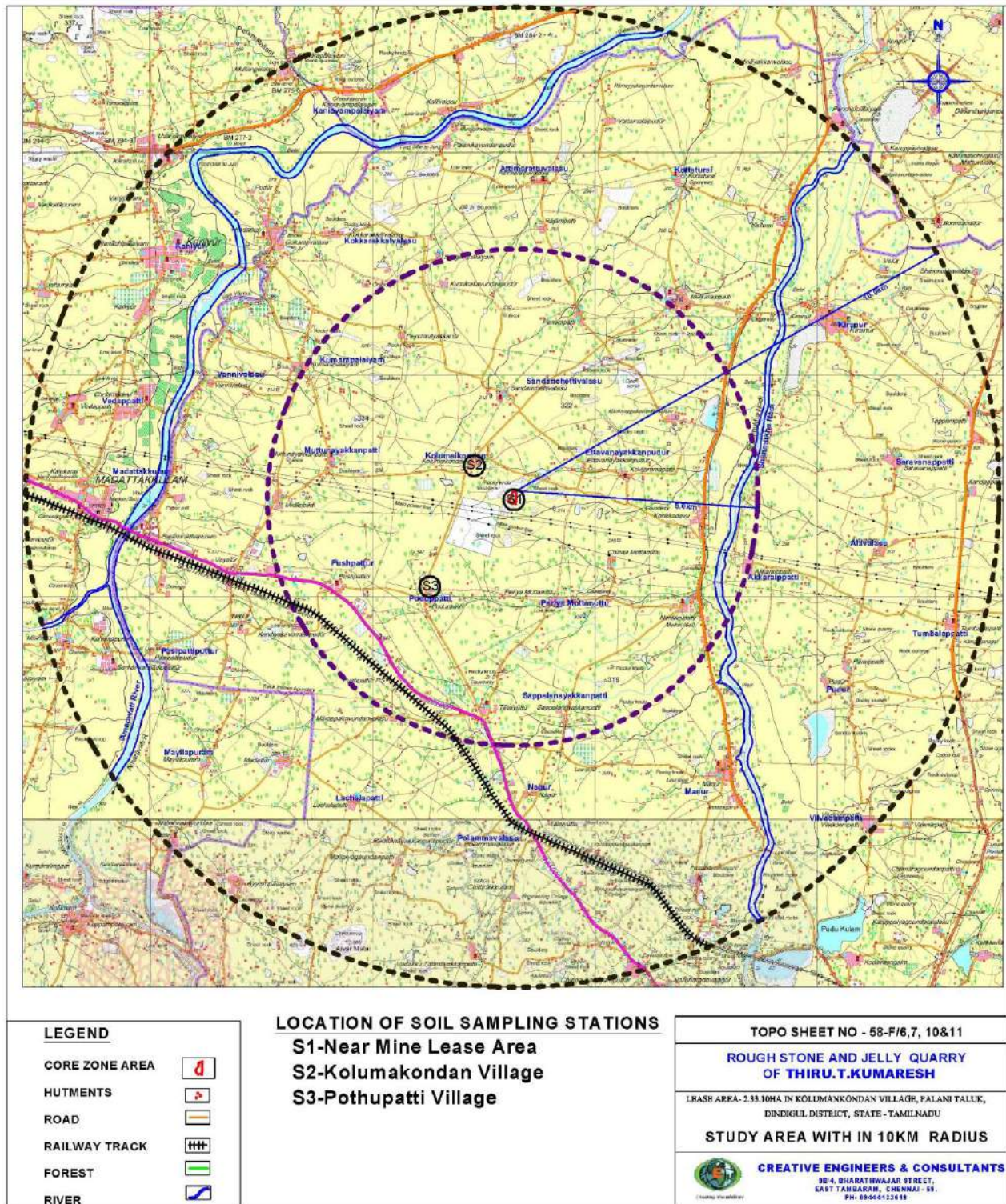
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**Table 3.18: Soil Quality Monitoring**

1.	<b>Monitoring Period</b>	Winter Season ( Dec 2022 – Feb 2023)		
2.	<b>Monitoring Location</b>	The location map showing soil sampling locations are given in <b>Figure No.3.13.</b>		
	<b>Code</b>	<b>Location</b>	<b>Distance</b>	<b>Direction</b>
	S1	Near Mine Lease Area	-	-
	S2	Kolumakondan Village	0.9km	NW
	S3	Pothupatti Village	2.5km	SW
3.	<b>Methodology</b>	Composite soil samples using sampling augers and field capacity apparatus.		
4.	<b>Monitoring Frequency</b>	Once during monitoring period		

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**Figure 3.13: Location of Soil Sampling Stations**





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**Table 3.19: Soil Quality Data**

S.No	Parameters	Unit	S1	S2	S3
1	pH at 25°C	-	6.41	6.74	6.64
2	Electrical Conductivity	(µmhos/cm)	45.88	94.28	78.2
3	Dry matter content	%	93.51	94.22	96.54
4	Water Content	%	6.49	5.78	3.46
5	Organic Matter	%	0.94	1.25	1.14
6	Soil texture	-	SILT LOAM	SANDY CLAY	SILT LOAM
7	Grain Size Distribution i. Sand	%	29.15	54.63	31.24
8	ii. Silt	%			
9	iii. Clay	%	51.91	26.56	50.62
10	Phosphorous	µg/g	18.94	18.81	18.14
11	Sodium	mg/kg	2.2	1.98	2.32
12	Potassium	mg/kg	490	395	620
13	Total Nitrogen	mg/kg	355	246	348
14	Total Sulphur	%	110	104	156

**3.3.5.1 Results and Discussion:**

Results of the soil samples show that the pH values were ranging between 6.41 to 6.74 and Electrical Conductivity values were ranging between 45.88 – 94.28 µmhos/cm. Soils are generally Silt loam type. Organic matter values were ranging between 0.94 – 1.25 %.

Total Nitrogen values were ranging between 104 - 156 mg/kg. Phosphorus values were ranging between 1.98 – 2.32 µg/g. Potassium values were ranging between 246 -355 mg/kg. Sodium values were ranging between 395- 620 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 – 3.19.**

**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 April 2022 (Figure No.3.13) has been used to generate the require landuse map showing their



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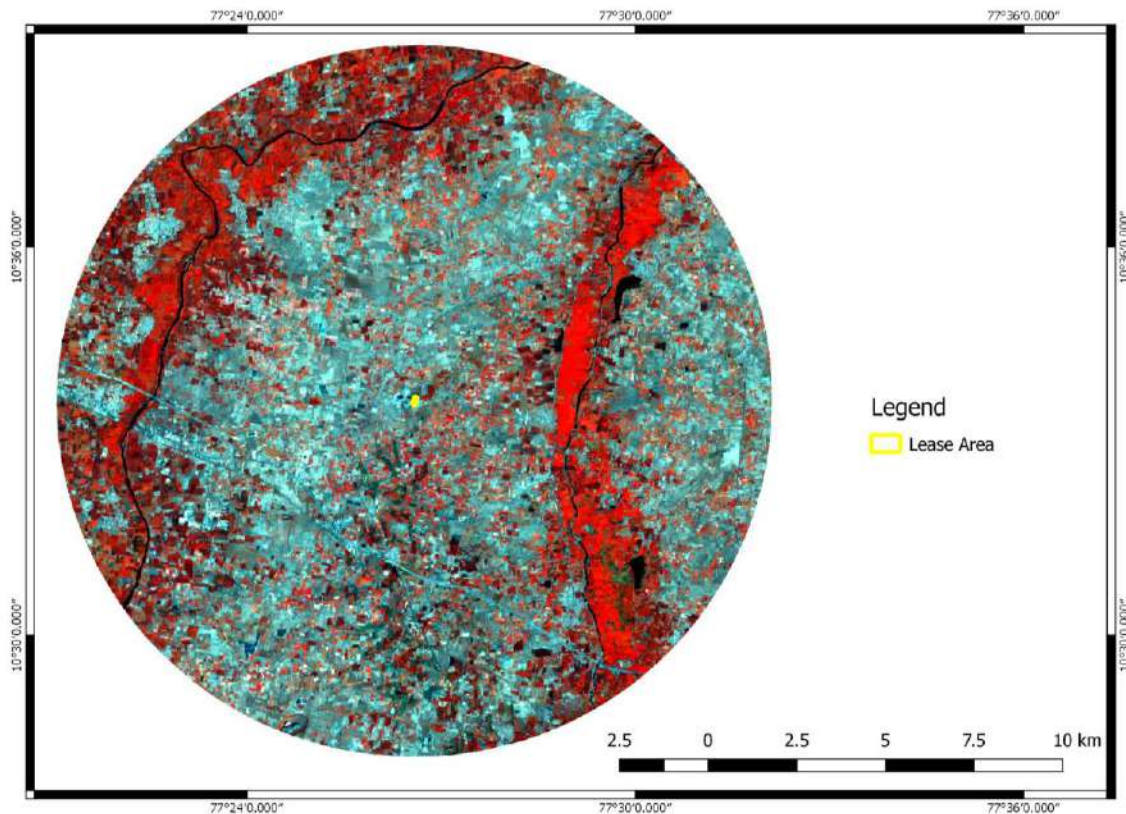
spatial pattern within the buffer area. The table showing data used for generation of information on landuse and subsequent GIS analysis is given below

**Table 3.20: RS satellite image used for the present study**

S.No	Type of Data	Date	Generated Map
1.	Sentinel-2	DEC 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**



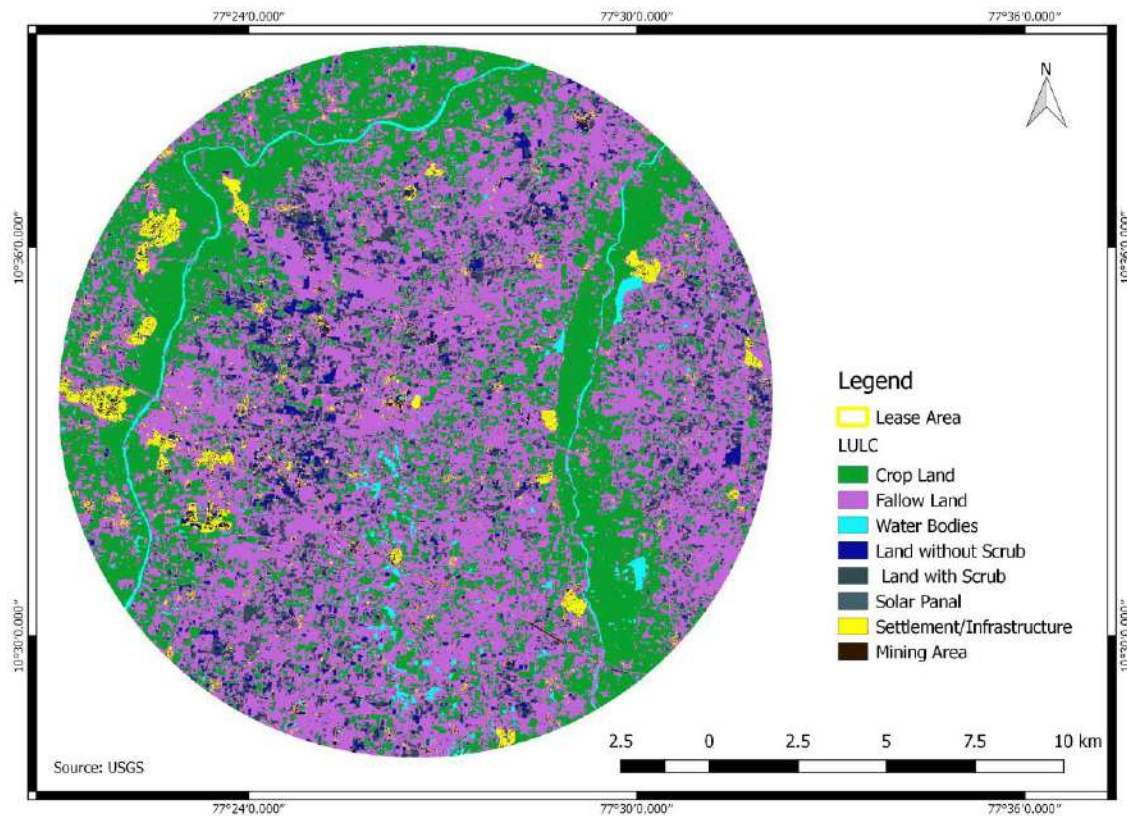
**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU.T.KUMARESH AT SURVEY NO.388/1A2(P) OVER AN AREA OF 2.33.10HA IN KOLUMANKONDAN VILLAGE, PALANI TALUK, DINDIGUL DISTRICT, TAMIL NADU STATE.**

**Table 3.21: 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**



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**Table 3.22: Area Estimation of Landuse Categories in Buffer Zone**

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	107.22	33.36
2	Fallow Land	155.02	48.23
3	Water bodies	6.03	1.88
4	Land Without Scrub	9.55	2.97
5	Land With Scrub	30.01	9.34
6	Solar panel	0.73	0.23
7	Settlement	10.89	3.39
8	Mining Area/ Industries	1.95	0.61
	<b>Total</b>	<b>321.40</b>	<b>100</b>

From the above table it is seen that 33.36 % of the study area is agriculture land and 48.23 % are fallow land. Land with scrub constitutes 9.34 %, lands without scrub constitute 2.97 % and remaining constitute others.

**3.4.2 LAND USED BASED ON REVENUE RECORDS:**

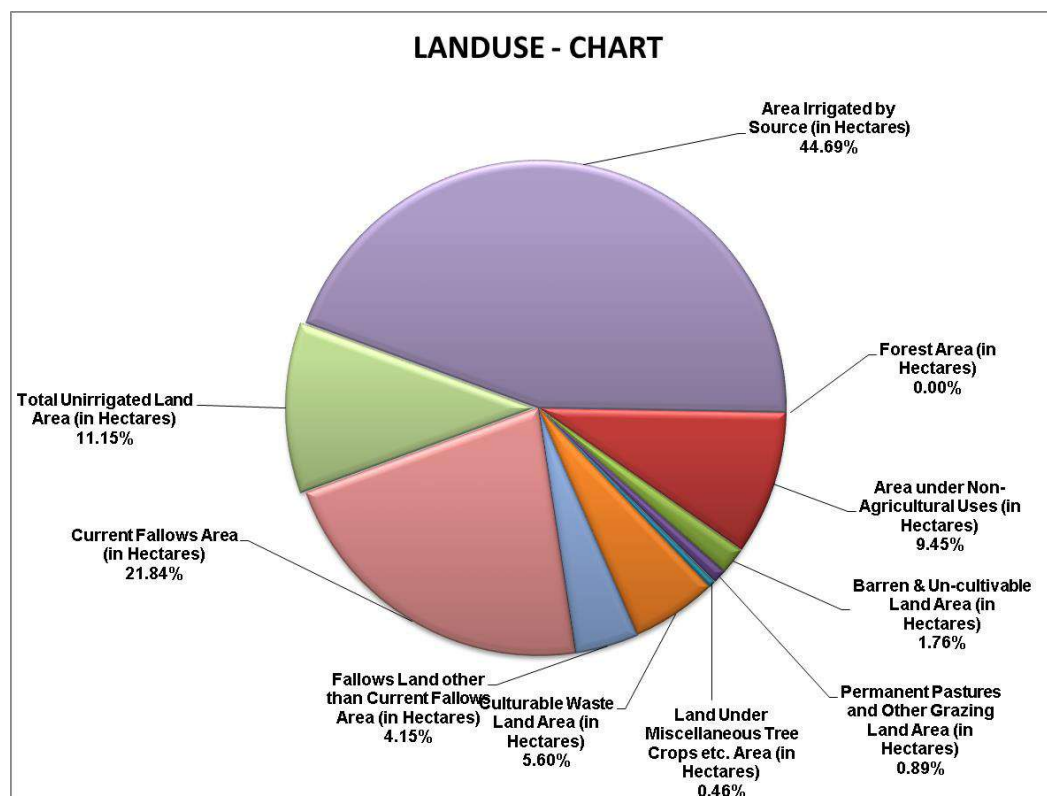
The lease area falls in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu state and the study area for the land use pattern (10 km radius) has been divided into four zones viz. Zone-I (0-2 km), Zone-II (2-5 km), Zone-III (5-10 km) and Zone-IV (0-10 km) respectively. The land use pattern of the study area falling within 10 km radius around the proposed project area is presented in Table no - 3.23. Village wise land use pattern is provided in **Annexure-11**.

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**Table 3.23: Land Use Pattern of the Study Area Falling Within 10 Km Area in (Ha)**

Study Area	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	1628.77	0	140.64	25.46	0	0	80.31	521.74	44.29	216.33	600
2 - 5 KM	9537.83	0	654.78	46.81	68	22	1282.2	254.93	2918.23	727.05	3563.83
5-10 KM	17680.44	0	1929.66	436.8	189.88	110.97	253.36	420.59	3338.1	2272.05	8729.03
0-10 KM	28847.04	0	2725.08	509.07	257.88	132.97	1615.87	1197.26	6300.62	3215.43	12892.86

**Figure 3.16: Landuse within the Buffer Zone Area**



### **3.5 BIOLOGICAL ENVIRONMENT:**

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

#### **3.5.1 FLORA:**

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

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

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

##### **3.5.1.1 Sampling Methodology:**

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

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

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

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

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

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

Whereas,

$H'$  is Shannon index of general diversity,

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

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

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

**A.CORE ZONE:**

The lease area is a non-forest, private land with grsses shrubs, few trees like *Prosopis juliflora*, neem etc. The detailed list of plants found in the core zone are given in Table no – 3.24.

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**Table 3.24: List of Floristic Species in the Core Zone**

Sl.No	Species Name	Family	Common Name
<b>Trees</b>			
1	<i>Azadirachta indica</i>	Meliaceae	Vembu
2	<i>Prosopis juliflora</i>	Fabaceae	Cimaikkaruvel
3	<i>Acacia nilotica</i>	Fabaceae	Karuvelan
4	<i>Albizia lebebeck</i>	Fabaceae	Siris
<b>Shrubs</b>			
1	<i>Jatropha glandulifera</i>	Euphorbiaceae	Vellaikattukottai
2	<i>Calotropis gigantea</i>	Apocynaceae	Earukku
3	<i>Lantana camara</i>	Verbenaceae	Uni
<b>Herbs</b>			
1	<i>Achyranthes aspera</i>	Amaranthaceae	Nayuruvi
2	<i>Sida acuta</i>	Malvaceae	Palambasi
3	<i>Tridax procumbens</i>	Asteraceae	Vettukai poondu
<b>Climbers</b>			
1	<i>Abrus precatorius</i>	Fabaceae	Kundumani
2	<i>Asparagus racemosus</i>	Liliaceae	Thanneervittan
3	<i>Cissus quadrangularis</i>	Vitaceae	Perandai

**B.BUFFER ZONE:**

The Dominated species are *Albizia amara*, *Borassus flabelliformis*, *Morinda tinctoria*, *Azadirachta indica*, *Cocus nucifera* etc. The detailed list of plants found in the Buffer zone is given in Table no – 3.25.

**Table 3.25: List of Floristic Species in the Buffer Zone**

Sl.No	Species name	Common name	Family
<b>Trees</b>			
1	<i>Acacia auriculiformis</i>	Pencil tree	Fabaceae
2	<i>Delonix regia</i>	Gulmohar	Fabaceae
3	<i>Cocus nucifera</i>	Tennai	Arecaceae
4	<i>Ziziphus mauritiana</i>	Yellanthai	Rhamnaceae
5	<i>Polyalthia longifolia</i>	Nietilingam	Annonaceae
6	<i>Acacia nilotica</i>	Karu- velamaram	Fabaceae
7	<i>Atalantia monophylla</i>	Kattu Elumeachi	Rutaceae
8	<i>Pongamia pinnata</i>	Pungai	Fabaceae
9	<i>Cassia fistula</i>	Konnai	Caesalpinaceae
10	<i>Pithecellobium dulce</i>	Kodukkapuli	Fabaceae
11	<i>Morinda tinctoria</i>	Nuna	Rubiaceae
12	<i>Samanea saman</i>	Amaivagai	Fabaceae
13	<i>Aegle marmelos</i>	Vivam	Rutaceae
14	<i>Phyllanthus emblica</i>	Nelli	Euphorbiaceae



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Sl.No	Species name	Common name	Family
15	Albizia amara	Krishna Siris	Fabaceae
16	Ficus racemosa	Atthi	Moraceae
17	Lepisanthes tetraphylla	Nekota	Sapindaceae
18	Thespesia populnea	Puvarasu	Malvaceae
19	Prosopis juliflora	Mesquite / Mul	Fabaceae
20	Borassus flabelliformis	Panna-maram	Arecaceae
21	Azadirachta indica	Neem	Meliaceae
22	Carica papaya	Pappali	Caricaceae
23	Tamarindus indica	Puli	Caesalpinaceae
24	Musa paradisiaca	Valzhlai	Musaceae
25	Moringa oleifera	Murungai	Moringaceae
26	Syzygium cumini	Naval	Myrtaceae
27	Madhuca longifolia	Iluppai	Sapotaceae
28	Ficus benghalensis	Alamaram	Moraceae
29	Tectona grandis	Tekku	Verbenaceae
30	Manilkara zapota	Sappota	Sapotaceae
31	Ficus religiosa	Arasamaram	Moraceae
32	Albizia lebebeck	Siris	Fabaceae
33	Gmelina arborea	Kumalaamaram	Verbenaceae
34	Mimusops elengi	Magizhamboo	Sapotaceae
35	Saraca asoca	Asogam	Caesalpinaceae
36	Terminalia arjuna	Marudha Maram	Combretaceae
37	Mangifera indica	Mango	Anacardiaceae
38	Acacia leucophloea	Velamaram	Fabaceae
<b>Shrubs</b>			
1	Hibiscus rosa-sinensis	Malvaceae	Semparuthi
2	Solanum pubescens	Kattusundai	Solanaceae
3	Ricinus communis	Aamanakku	Euphorbiaceae
4	Tephrosia purpurea	Kolinji	Fabaceae
5	Anisomeles indica	Indian Catmint	Lamiaceae
6	Vitex negundo	Nochi	Verbenaceae
7	Anisomeles malabarica	Peyameratti	Lamiaceae
8	Cassia auriculata	Aavaram	Caesalpinaceae
9	Boerhaavia diffusa	Nyctaginaceae	Kagithapoo
10	Caesalpinia pulcherrima	Mayilkonnai	Caesalpinaceae
11	Abutilon indicum	Thutti	Malvaceae
12	Calotropis gigantea	Yerukku	Asclepiadaceae
13	Carissa spinarum	Chirukila	Apocynaceae

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Sl.No	Species name	Common name	Family
14	Euphorbia tirucalli	Thiru- kalli	Euphorbiaceae
15	Dodonaea viscosa	Velari	Sapindaceae
16	Ipomoea carnea	Bush morning glory	Convolvulaceae
17	Datura metel	Solanaceae	Umatai
18	Opuntia stricta	Sappathikalli	Cactaceae
19	Lantana camara	Unichedi	Verbenaceae
20	Tecoma stans	Thangarali	Bignoniaceae
21	Tarenna asiatica	Rubiaceae	Thaerani
22			
<b>Herbs</b>			
1	Cassia occidentalis	Pei- avarai	Caesalpinaceae
2	Boerhavia erecta	Erect Spiderling	Nyctaginaceae
3	Leucas aspera	Lamiaceae	Thumbai
4	Amaranthus tricolor	Sirukkeerai	Amaranthaceae
5	Commelina benghalensis	Kanavaazhai	Commelinaceae
6	Amaranthus viridis	Kuppaikeerai	Amaranthaceae
7	Achyranthes aspera	Nai-uruvi	Amaranthaceae
8	Boerhavia diffusa	Mookkaratti	Nyctaginaceae
9	Waltheria indica	shembudu	Sterculiaceae
10	Acalypha indica	Kuppaimeni	Euphorbiaceae
11	Cleome viscosa	Naivelai	Cleomaceae
12	Catharanthus roseus	Nithyakalyani	Apocynaceae
13	Sida cordifolia	Nila -thuthi	Malvaceae
14	Tridax procumbents	Vettukkaayathalai	Asteraceae
15	Sida rhombifolia	Chitramutti	Malvaceae
16	Phyllanthus niruri	Phyllanthaceae	Keelzhaneeli
17	Sida acuta	Common Wire weed	Malvaceae
<b>Climbers</b>			
1	Coccinia grandis	Kovai	Cucurbitaceae
2	Cissus quadrangularis	Perandai	Vitaceae
3	Abrus precatorius	Kundumani	Fabaceae
<b>Grasses</b>			
1	Cynodon dactylon	Arugam pullu	Poaceae
2	Chloris inflata	Kodai pullu	Poaceae
3	Chloris barbata	Chevvarakupul	Poaceae
4	Cyperus rotundus	Korai	Cyperaceae

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**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.

Other than domestic animal, no wild animals are reported in and around the lease area. There is no Schedule-1 species in and around core zone. The list of fauna within the study area is given in Table No – 3.26.

**Table 3.26: List of Fauna in the Buffer Zone plains**

<u>S.No</u>	<u>Common Name</u>	<u>Scientific name</u>	<u>IWPA, Schedule</u>
<b>Mammals</b>			
1	Indian Grey Mongoose	Herpestes edwardsii	II
2	Indian Palm squirrel	Funambus palmarum	IV
3	Common Indian Hare	Lepus ruficaudatus	IV
<b>Birds</b>			
1	Common Quail	Coturnix coturnix	IV
2	Cattle Egret	Bubulcus ibis	IV
3	Spotted Dove	Streptopelia chinensis	IV
4	Common Crow	Corvus splendens	V
5	Common Kingfisher	Alcedo atthis	IV
6	Common Myna	Acridotheres tristis	IV
7	Black Drongo	Dicrurus macrocercus	IV
8	House Sparrow	Passer domesticus	IV
9	Indian Cuckoo	Cuculus micropterus	IV
10	Rose-ringed Parakeet	Psittacula krameri	IV
11	Red-vented Bulbul	Pycnonotus cafer	IV
12	Purple-rumped Sunbird	Nectarinia zeylonica	IV
<b>Reptiles</b>			
1	Common Indian krait	Bungarus caeruleus	II
2	Rat Snake	Ptyas mucosa	II
<b>Amphibians</b>			
1	Common Indian toad	Bufo melanostictus	IV
<b>Butterfly</b>			
1	Common crow	Euploea core	IV
2	Small grass yellow	Eurema brigitta	IV

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**3.6 HYDROGEOLOGICAL STUDY:**

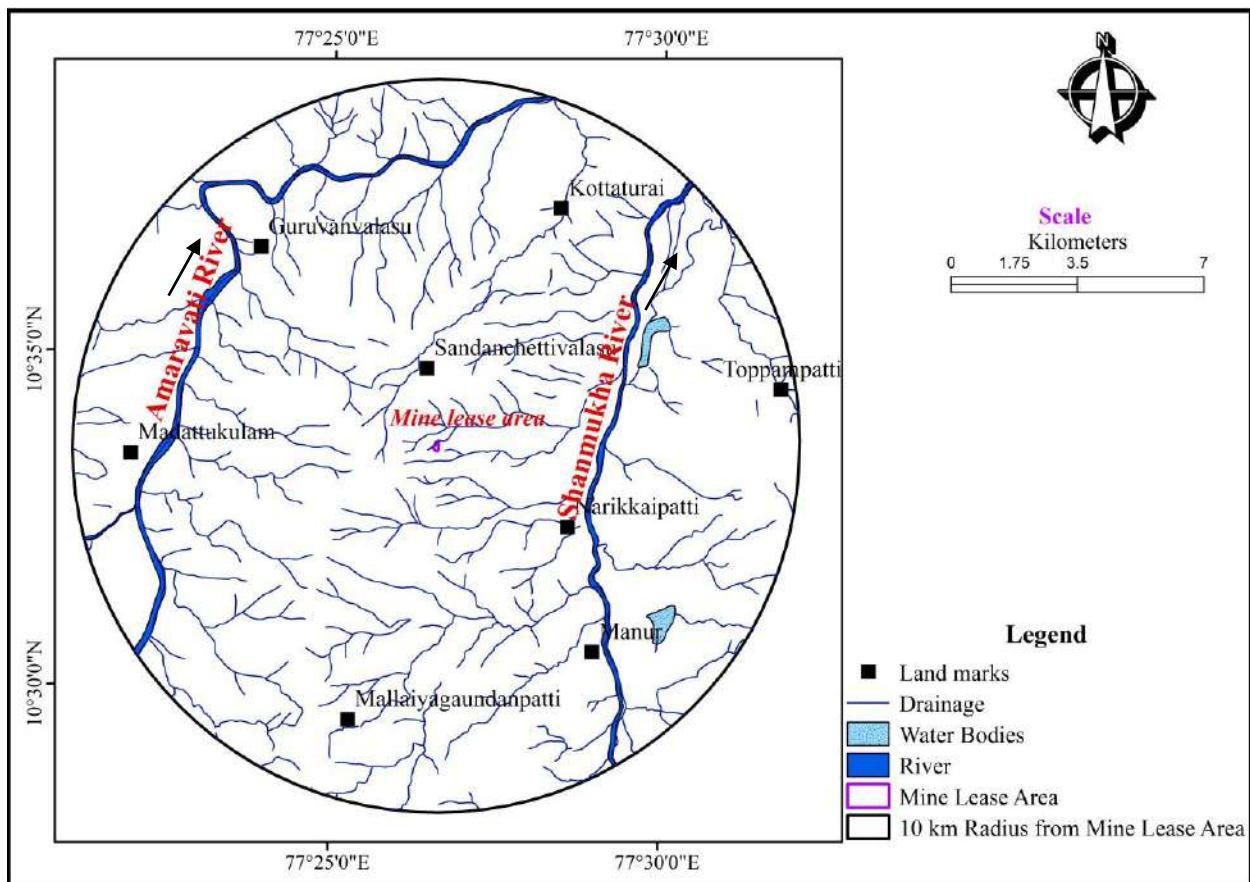
This section delves into the study of the hydrogeological scenario of the study area to evaluate the impact of mining activities on the nearby areas. The study area is located in Kolumankondan Village in Palani Taluk is considered to understand the nature of the general hydrogeological conditions of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

**3.6.1 PHYSIOGRAPHY AND DRAINAGE:**

**Physiography:** The area applied for mining lease is a gentle plain terrain.

**Drainage:** There is no major water body in the core zone. Drainage of the study area is controlled by Amaravati river in the west and shanmukha nadi in the east. The drainage map prepared from the survey of India topographic maps shows the presence of few streams running in a dendritic pattern connected to the Amaravati river in the west and .

**Figure 3.17: Drainage Map**

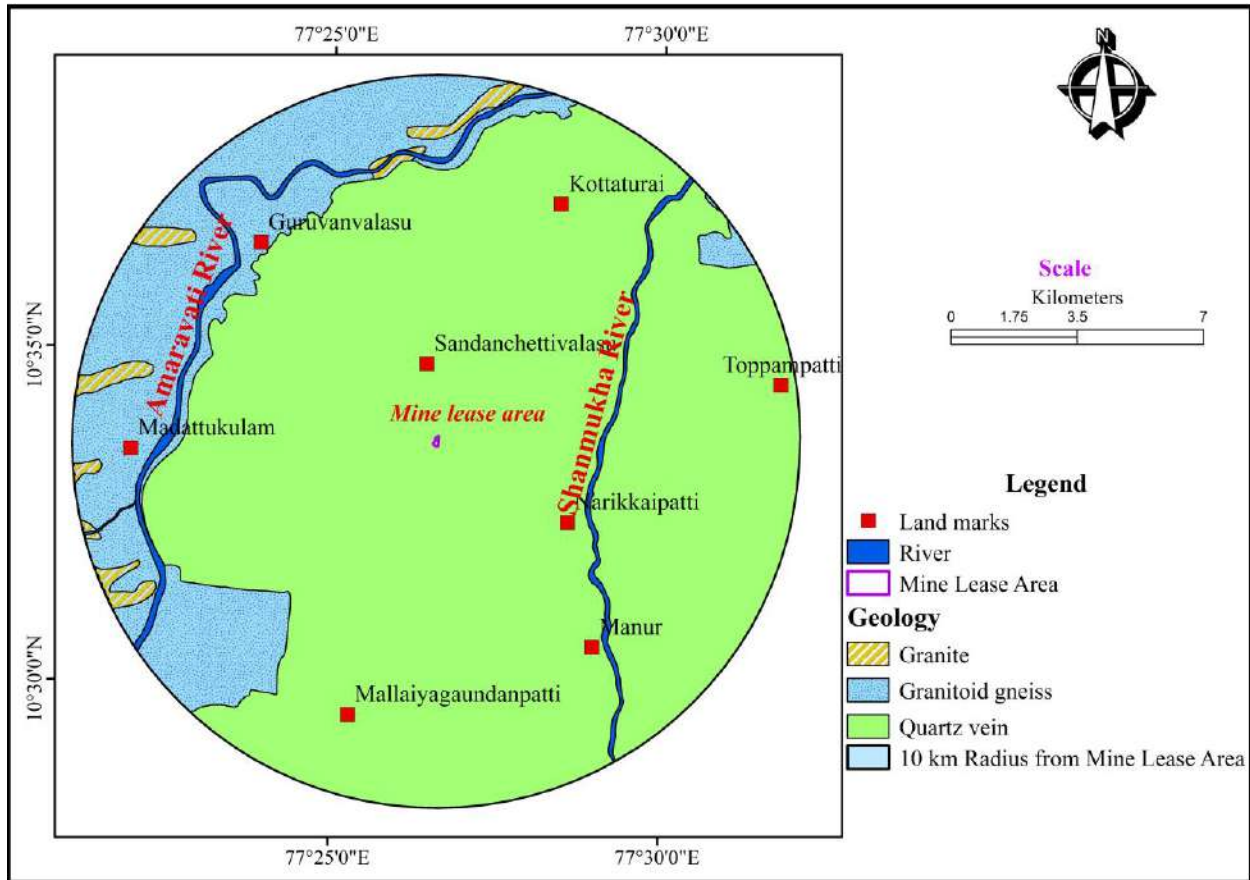


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**3.6.2 GEOLOGY AND GEOMORPHOLOGY**

**Geology:** The type of rock formation in the core and buffered zone is composed majorly of Quartz vein. The lease area falls under Quartz vein category.

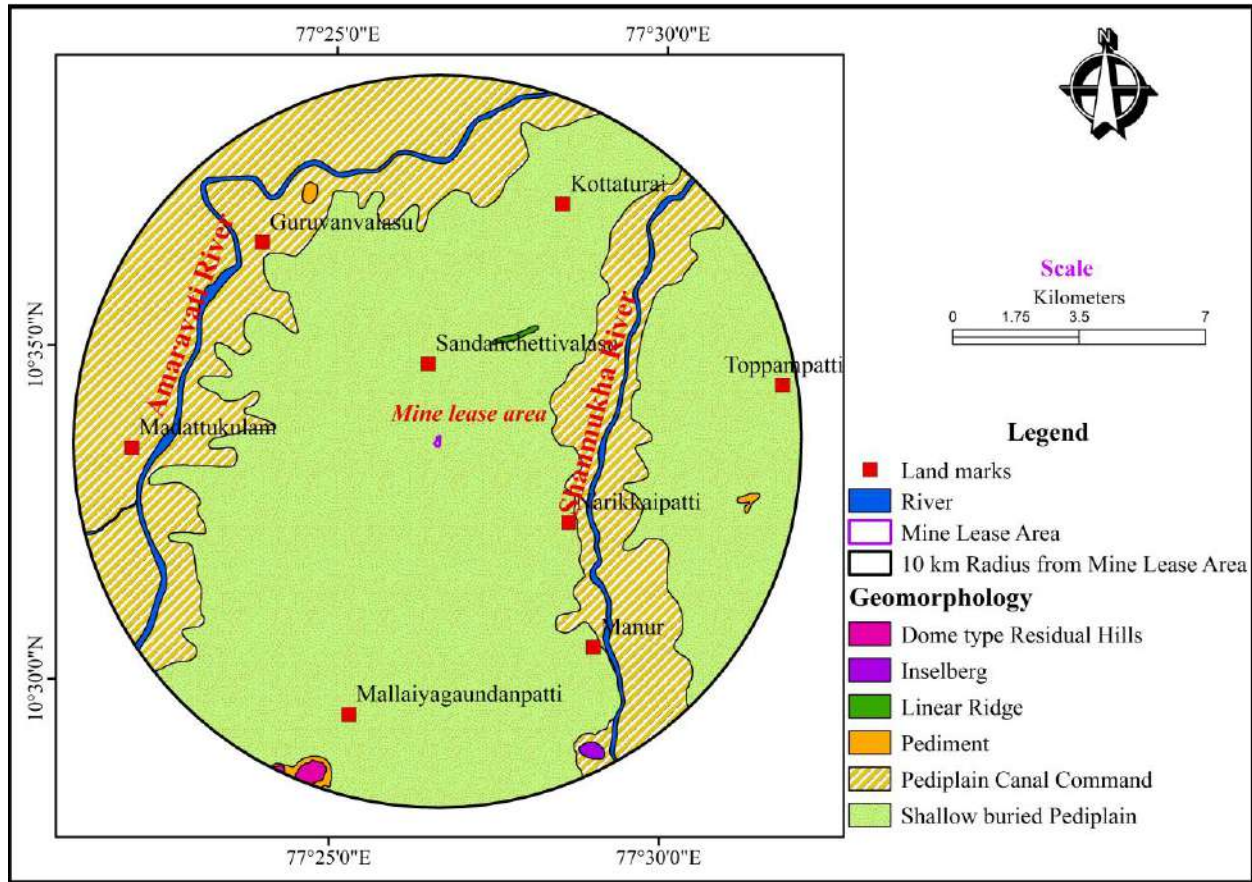
**Figure 3.18: Geology Map**



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**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 Shallow buried Pediplain complex, and it is the same category that the lease area also falls under.

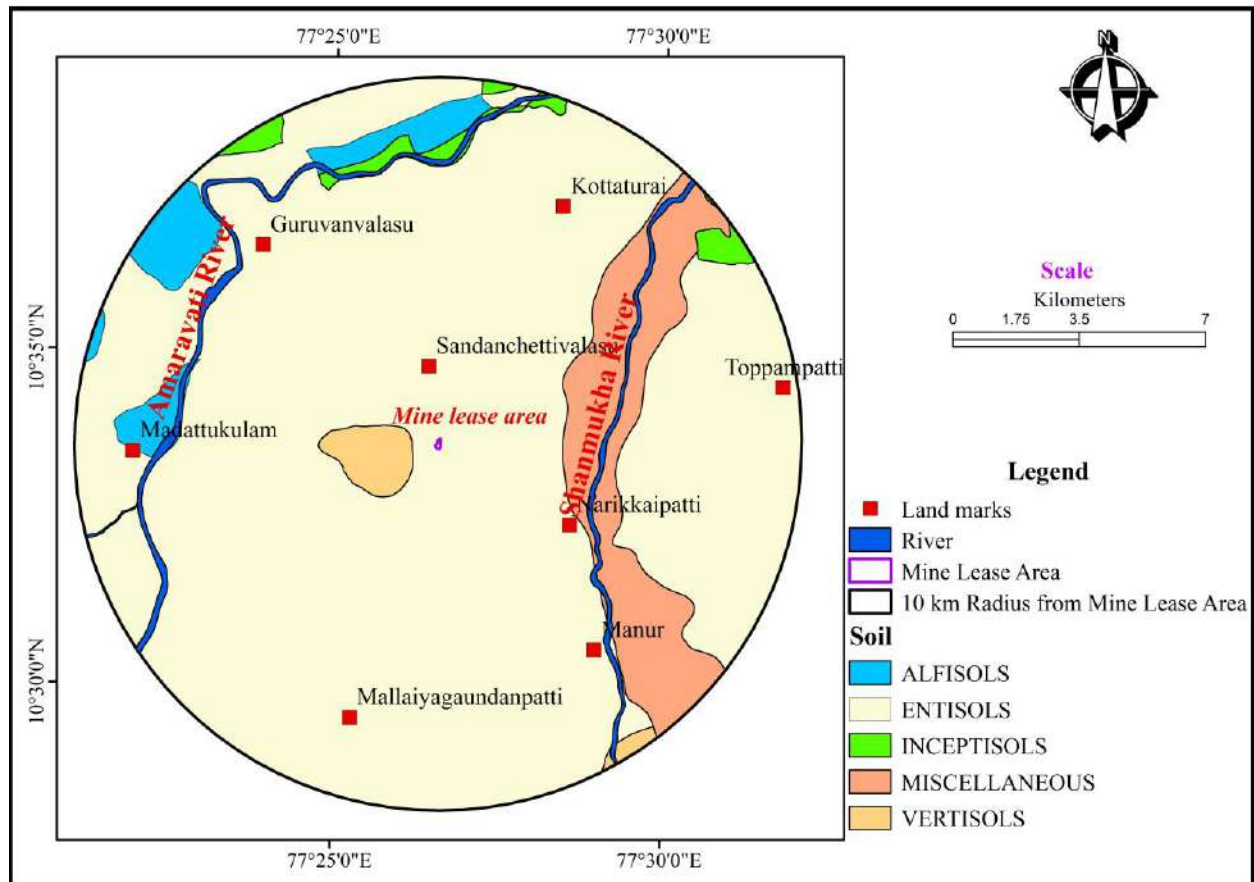
**Figure 3.19: Geomorphology Map**



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**Soil:** The study area is characterized by Entisols . The project area is dominated with Entisols & Alfisols type of soil.

**Figure 3.20: 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 Palani Block, Dindigul District, Tamil Nadu the following is observed.

**Table 3.27: General Trend of Depth to Water Level for Palani Block**

Year	Depth to Water Level (m bgl)		Wells Monitored	
	Pre-Monsoon	Post-Monsoon	Pre-Monsoon	Post-Monsoon
2015	2.74	-	2	-
2016	3.165	3.4	2	2
2017	5.64	2.375	2	2
2018	3.15	2.635	2	2

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2019	4.295	4.725	2	2
2020	-	6.795	-	2

**Field investigation:**

Study of the area shows that the sub-surface formations reveal less of soil with low recharge potentials. Subsequently hard and massive formations of rock are found.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The study has revealed that potential fractures are encountered at deeper levels. The water in the wells are available mainly after post monsoon and it reduces during summer necessitating only dry crops cultivation. Bore wells are deep and it reflects that the yield is only better at deeper water levels.

Based on the available information and the geophysical investigations it is concluded that the project area is considered to poor groundwater potential up to 50m. 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.

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

\* \* \* \* \*





# **CHAPTER - 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, Gravel and Earth. 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. The proposed mining and allied operations may cause deterioration of air quality due to pollution arising from the project operation if prompt care is not taken. The principal sources of air pollution in general due to mining and allied activities will be:

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

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

Particulate matter smaller than 10 microns, referred to as PM<sub>10</sub>, can settle in the bronchi and lungs and cause health problems like Bronchitis, Emphysema, Bronchial Asthma, Irritation of mucus membranes of eyes, etc. Particles smaller than 2.5 micrometers (PM<sub>2.5</sub>), 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<sub>2</sub>, NO<sub>x</sub>, CO etc., from diesel driven mining equipment, generator sets, etc. Larger suspended particles are generally filtered in the nose and throat and do not cause problems. Higher concentration of SO<sub>2</sub>, NO<sub>x</sub>, CO may cause some health effect on the human



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

**Table 4.1: Impact and Mitigation Measures – Air Environment**

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

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



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Considering that the quantum of production is less, only 1 excavator, 4 tippers will be engaged. These equipments 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 1160 number of plants will be planted in and around the lease area.

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<sub>10</sub>, PM<sub>2.5</sub>. **Ground Level Concentration (GLC)** have been computed using hourly meteorological data.

**Table 4.2: Emission Sources**

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

##### **4.2.2.1 Emission Factors**

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

**Table 4.3: Emission Factors**

S.No	Activity	PM10	PM2.5	Unit
1	Ore Loading	$1.5 \times 10^{-3}$	$2.1 \times 10^{-4}$	Kg/T
2	OB Loading	$1.4 \times 10^{-4}$	$1.5 \times 10^{-5}$	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:

**Table 4.4: Emission Rate**

<b>ACTIVITIES/POLLUTANTS</b>	<b>PM<sub>10</sub> (g/sec)</b>	<b>PM<sub>2.5</sub>(g/sec)</b>
Ore Loading	0.03	0.00
Drilling	0.12	0.05
Hauling inside lease area	0.12	0.02
<b>Total</b>	<b>0.27</b>	<b>0.07</b>

**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 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:

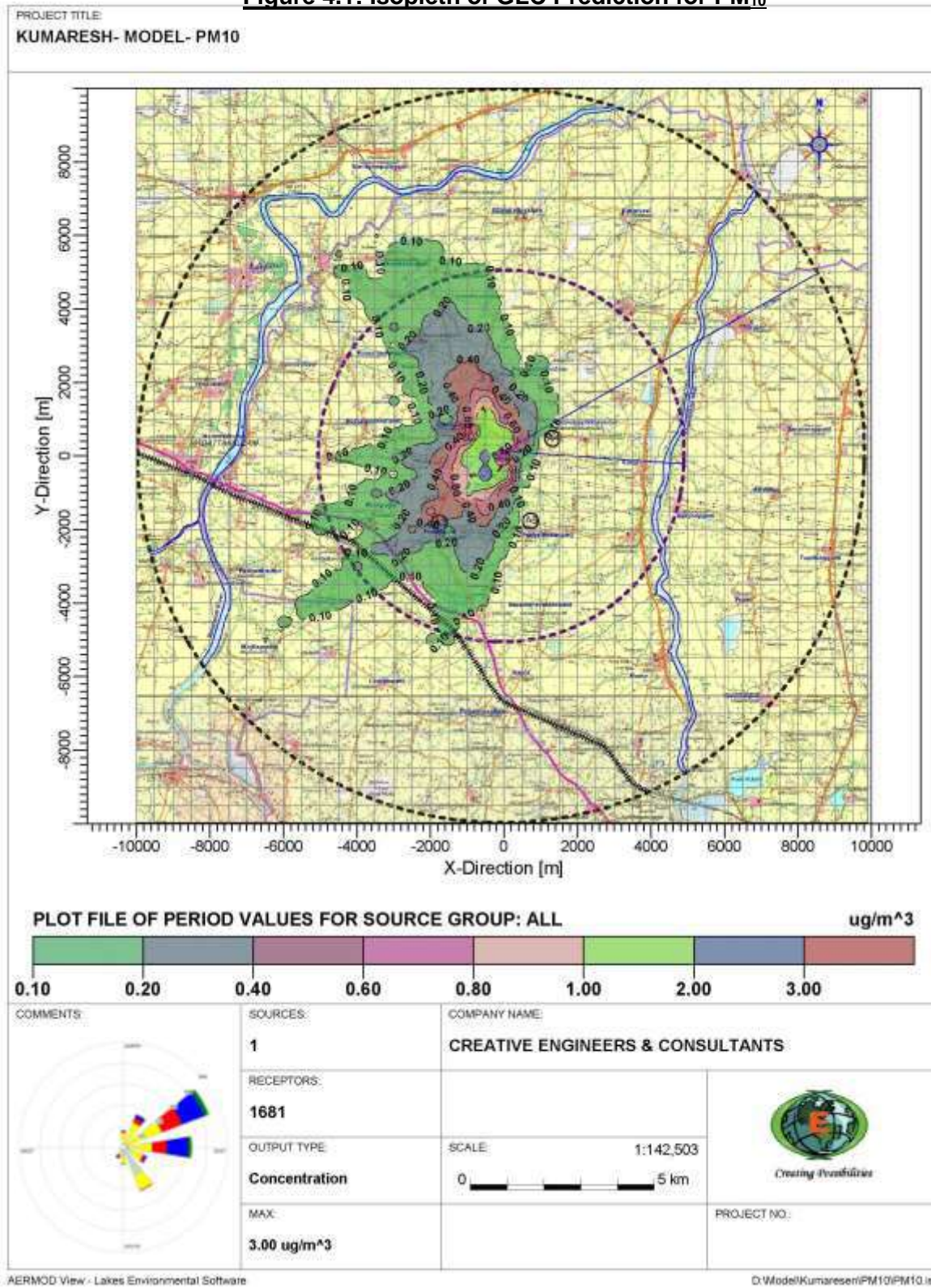
**Table 4.5: Peak Incremental Concentration**

<b>S.No</b>	<b>Parameters</b>	<b>Peak incremental concentration <math>\mu\text{g}/\text{m}^3</math></b>
1	PM <sub>10</sub>	3.00
2	PM <sub>2.5</sub>	0.98

It is observed that the peak incremental concentration for PM<sub>10</sub>, PM<sub>2.5</sub> occurring very near the source. At away from the source the values are getting reduced due to dispersion effects. The Isopleths of PM<sub>10</sub>, PM<sub>2.5</sub> 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.

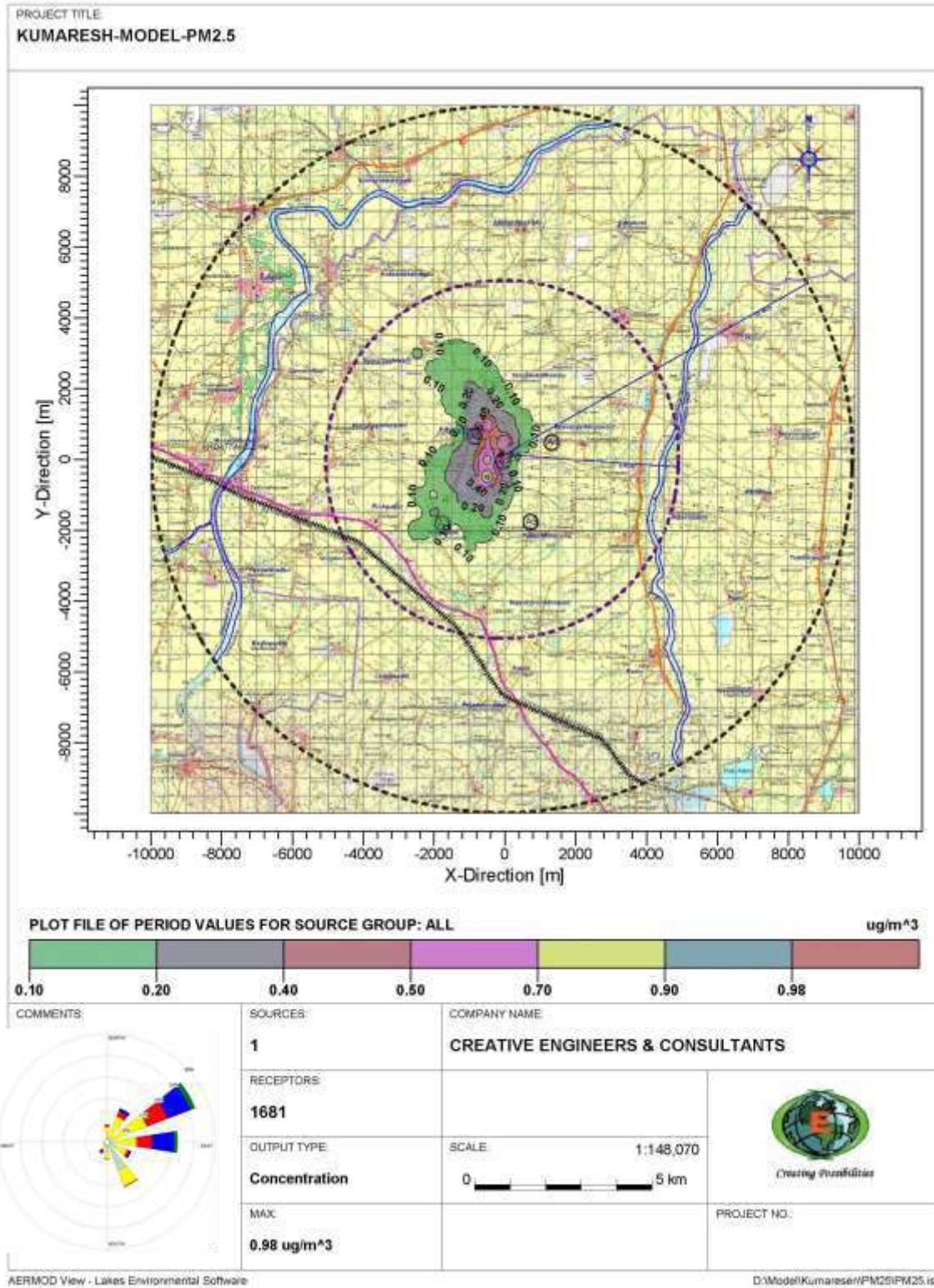
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**Figure 4.1: Isoleth of GLC Prediction for PM<sub>10</sub>**



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**Figure 4.2: Isopleth of GLC Prediction for PM<sub>2.5</sub>**



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**4.2.2.4 Predicted Ambient Air Quality:**

The post project Concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.6 to 4.7.

**Table 4.6: Concentrations Of PM<sub>10</sub> after Project Implementation**

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

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	A1-Near Mine Lease Area	76.2	3.0	79.2	-
2	A2-Kolumakondan Village	69.2	1.0	70.2	100
3	A3-Pothupatti Village	63.6	<1.0	64.6	
4	A4-Ettappanayagapurur Village	55.2	<1.0	56.2	
5	A5-Periya Mottanuthu Village	64.2	<1.0	65.2	

**Table 4.7: Concentrations Of PM<sub>2.5</sub> after Project Implementation**

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

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	A1-Near Mine Lease Area	35.2	<1.0	36.2	-
2	A2-Kolumakondan Village	31.1	<1.0	32.1	60
3	A3-Pothupatti Village	29.3	<1.0	30.3	
4	A4-Ettappanayagapurur Village	27.3	<1.0	28.3	
5	A5-Periya Mottanuthu Village	29.5	<1.0	30.5	

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<sub>10</sub> are in the range of 56.2  $\mu\text{g}/\text{m}^3$  to 79.2  $\mu\text{g}/\text{m}^3$  and with respect to PM<sub>2.5</sub> are in the range of 28.3  $\mu\text{g}/\text{m}^3$  to 36.2  $\mu\text{g}/\text{m}^3$  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.



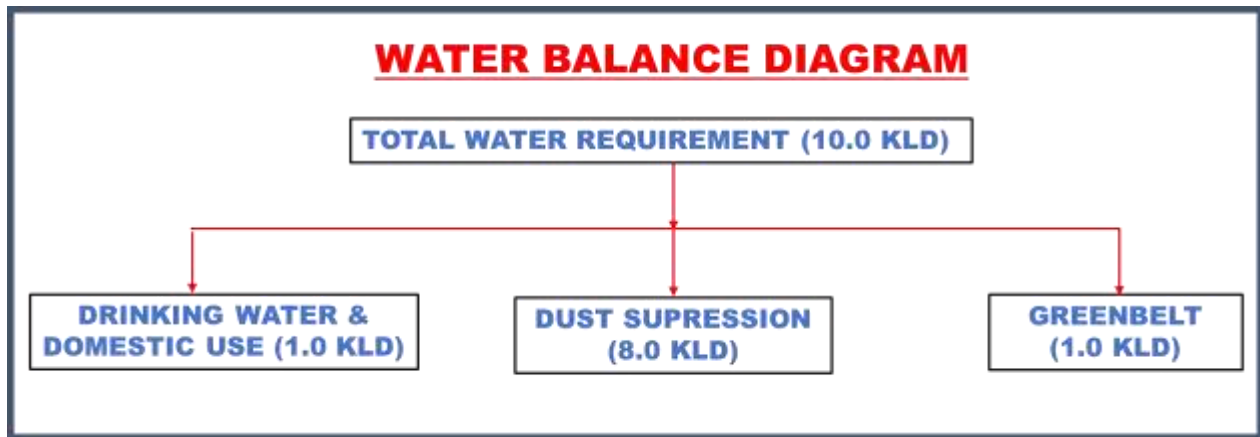


#### 4.3 WATER ENVIRONMENT:

##### 4.3.1 WATER REQUIREMENT:

The total water requirement for this project will be 10.0 KLD comprising 1.0 KLD for drinking water and domestic use, 8.0 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.

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**4.3.3 TREATMENT SCHEME:**

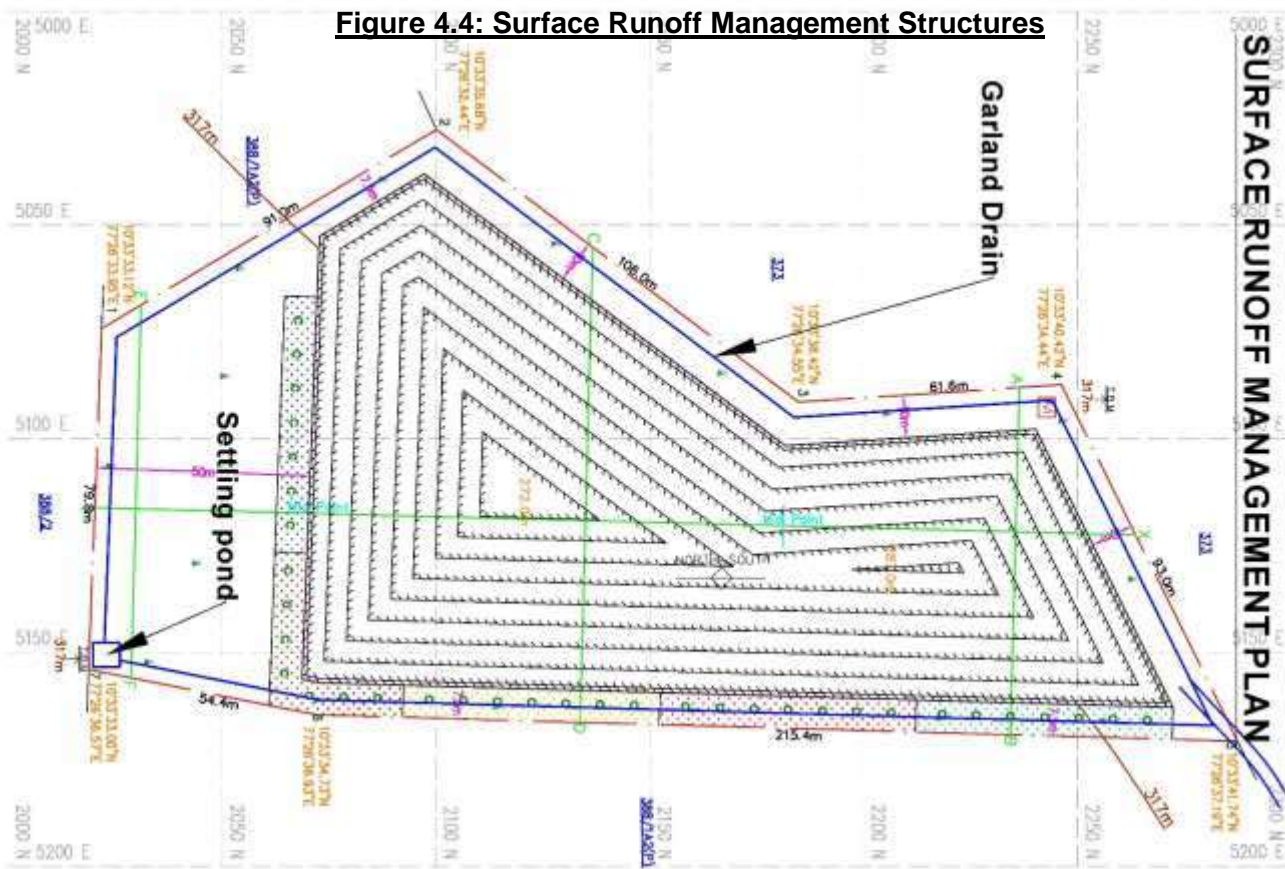
**A. Generation of domestic effluent:**

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. There are no waste dumps in this quarry. 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, a garland drain of length 700m 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.**



**C. Disturbance to drainage courses**

There is a seasonal odai passing on the southern side of the lease area for which 50m safety distance is maintained. This is a rainwater carrying channel and remains dry for most of the period. Earthen bund formation in this side within the lease will be done. Good plantation will also be carried out in the safety zone. Besides, 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. 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.

**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 deeper 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 40m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation. 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 Dindigul district was obtained from the data provided in the technical report of the National Water Mission, Ministry of Jal Shakti, Department of Water Resources, RD&GR – Notes on Dindigul District.

**Table 4.8: Ground Water Resources Estimation– Palani Taluk (Ha-m)**

Net Groundwater Availability	Existing Gross Draft for Irrigation	Existing Gross Draft for Domestic and industrial water supply	Existing Gross Draft for all uses	Stage of Ground water Development (%)	Category of Block
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2719.58	985.60	106.28	1091.88	50	Safe
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From the table it is seen that the stage of groundwater development where the study area falls is 50%. 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 on the western side of the lease.
- d) Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.
- e) Excess water, if any in consultation with local villagers and in line with government practices shall be provided to the downstream users.



**4.4 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:

**4.4.1.1 IMPACT PREDICTION DUE TO NOISE:**

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

**Table 4.9: Main Sources of Noise**

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

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

**Table 4.10: Impact of Noise Levels**

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

OSHA (Occupational Safety and Health Administration), USA and other similar organisations stipulate that noise level up to 90 dB(A) is acceptable for eight hours exposure Leq (Equivalent



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sound level) (8hrs) per day. The Directorate General of Mines Safety, in circular No. DG (Tech)/18 of 1975, has prescribed the noise level in mining occupations (TLV) for workers, in an 8 hour shift period with unprotected ear as 90 dB(A) or less.

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

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

Noise modeling is carried out using the following formula:

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

**Table 4.11: Post Project Noise Levels**

Sl.No	Location	Baseline Day Eq.in dB(A)	Post project noise Eq in dB(A)	Limit dB(A) as per MoEF&CC
1.	North West Corner	49.3	59.5	90
2.	North East Corner	49.3	56.0	90
3	South East Corner	49.3	57.1	90
4	South West Corner	49.3	58.9	90
5	Kolumakondan Village	46.5	47.1	55
6	Pothupatti Village	44.9	45.2	55
7	Ettappanayagapurur Village	42.8	43.1	55
8	Periya Mottanuthu Village	45.7	45.8	55

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



away the effect of noise due to mining operations will not be felt at all in the surrounding villages.

#### **4.4.1.2 CONTROL MEASURES FOR NOISE ENVIRONMENT:**

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

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

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

#### **4.4.2 GROUND VIBRATIONAL DUE TO BLASTING EFFECTS:**

##### **4.4.2.1 Blasting Study:**

Vibrations due to blasting may cause damage to nearby structures, if appropriate control measures are not adopted. Flyrock is another possible damage causing outcome of blasting. There are many factors, which influence these, like long explosive column with little stemming column, improper burden, loose material or pebbles near holes and long water columns in the holes.

The following control measures will be planned to reduce ground vibratory conditions to sustainable statutory limits:



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- 1) Carrying out controlled blasting using Nonel delay detonator.
- 2) Optimum design for burden and spacing.
- 3) Reducing explosive charge per delay to minimum.
- 4) The peak particle velocity (PPV) of ground vibration will be kept very low through optimally controlled blasting techniques, after necessary field trials.
- 5) To contain fly rocks, stemming column to be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- 6) Blasting will not be carried out when strong winds are. Blasting will be done during midday time.
- 7) Controlled blasting to avoid tension cracks which may endanger the stability of bench slopes in the mine.
- 8) Proper care and supervision during blasting by a competent and experienced person to be carried out.

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

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

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

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





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**4.5 LAND ENVIRONMENT:**

The lease area of 2.331 Ha is a patta land in the name of the applicant M/s.Aadith Blue metals vide Patta No-1369. The applicant has obtained consent from Pattadhar. (Annexure No: IV & VII of mine plan report) and got it registered. The core zone is a barren land with few thorny bushes. The present land use pattern, and the post mining land use pattern is shown below:

**Table 4.13: Land Use Table**

Sl. No.	Land Use	Present Area (Ha)	Area in use during the quarrying period (Ha)
1.	Quarrying Pit	Nil	1.50.00
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.02.00
4.	Green Belt	Nil	0.25.00
5.	Unutilized	2.33.10	0.55.10
	<b>Total</b>	<b>2.33.10</b>	<b>2.33.10</b>

**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. Ultimately the entire mined out area of 1.500Ha will be left as water body. 0.020 Ha will be the mine roads & infrastructure, 0.250 Ha will be covered with vegetation, 0.010Ha will be infrastructure and 0.550 Ha will be unutilized area.

**Table 4.14: Land Use During Post Operational Period**

S.No	Description	Land use (Ha.)			
		Plantation	Water body	Others	Total
1	Quarrying Pit	-	1.500	-	1.500
2	Infrastructure	0.010	-	-	0.010
3	Green Belt	0.250	-	-	0.250
4	Roads	-	-	0.020	0.020
4	Unutilized	0.551	-	-	0.551
	<b>TOTAL</b>	<b>0.811</b>	<b>1.500</b>	<b>0.020</b>	<b>2.331</b>

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.



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**4.6 BIOLOGICAL ENVIRONMENT:**

**4.6.1 EXISTING FLORA AND FAUNA:**

The core zone area is a hard rock formation area, with barren patches. Details of flora/fauna pattern in core and buffer zones have been described in chapter - III.

**4.6.2 IMPACT OF MINING ON BIOLOGICAL ENVIRONMENT:**

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

**Table 4.15: Impact on Biological Environment**

S.No	ISSUES	OBSERVATIONS
1	Clearance of vegetation due to mining and allied activities	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	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	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, barbed 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.



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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 perineal water source, no major agricultural activity is carried out in and around the lease area. Only patches of plantation are observed in few places in the monsoon season based on water availability.
14	Impact on soil health and biodiversity	The lease area is covered with grasses and bushes only (Photograph of the site attached in Chapter-II). Besides, there is no waste generation, disposal or stacking involved in this project. As such no loss of soil health and Bio-diversity is expected.
15	Climate change leading to droughts, floods,etc.	<ul style="list-style-type: none"> <li>•As such the production from this lease is very low to cause any appreciable impact.</li> </ul>
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.	<ul style="list-style-type: none"> <li>•No adverse impact on the surrounding environment is envisaged since the number of equipments to be used to achieve this small production is very less and the magnitude of operation is of very small level.</li> <li>•Besides, as is it a mining project, no adverse generation of heat is envisaged.</li> <li>•Certified vehicles with low carbon emissions will only be used. These equipments will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 1160 number of plants will be planted in and around the lease area.</li> <li>•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.</li> <li>•There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact.</li> <li>•It will be ensured that mining will be carried out adhering to all the statutory rules and regulations and maintaining the environmental quality within the prescribed standards by effective implementation of varioius mitigative measures.</li> <li>•These mitigative measures will be continued for the entire lease period ensuring no impact on the environment.</li> <li>•As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people ,loss of Agriculture, Forestry and Traditional Practices</li> </ul>



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		is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc.
17	Possibilities of water contamination and impact on aquatic ecosystem health and impact on Sediment geochemistry in the surface streams	<ul style="list-style-type: none"> <li>• This being a mining project no process effluent will be generated.</li> <li>• Water generation is expected to be due to             <ul style="list-style-type: none"> <li>✓ Direct rainfall falling within the pit</li> <li>✓ Rain water draining near the lease area.</li> </ul> </li> <li>• Direct rain fall will be collected in the mine floor sump. Water from sump will be pumped to settling pond for downstream users.</li> <li>• Rainwater from the mine periphery will be collected through peripheral garland drain. Garland drain will be connected to a settling pond. Supernatant clear water from settling pond confirming to applicable limits will be let out to downstream users for agricultural or other purposes.</li> <li>• Due to above mentioned reasons and absence of perinnial water bodies nearby where in any marine ecosystem is observed, no effect on this front is expected.</li> </ul>

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 and 50m safety zone for odai is left. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 1160 trees will be planted in and around the lease area.



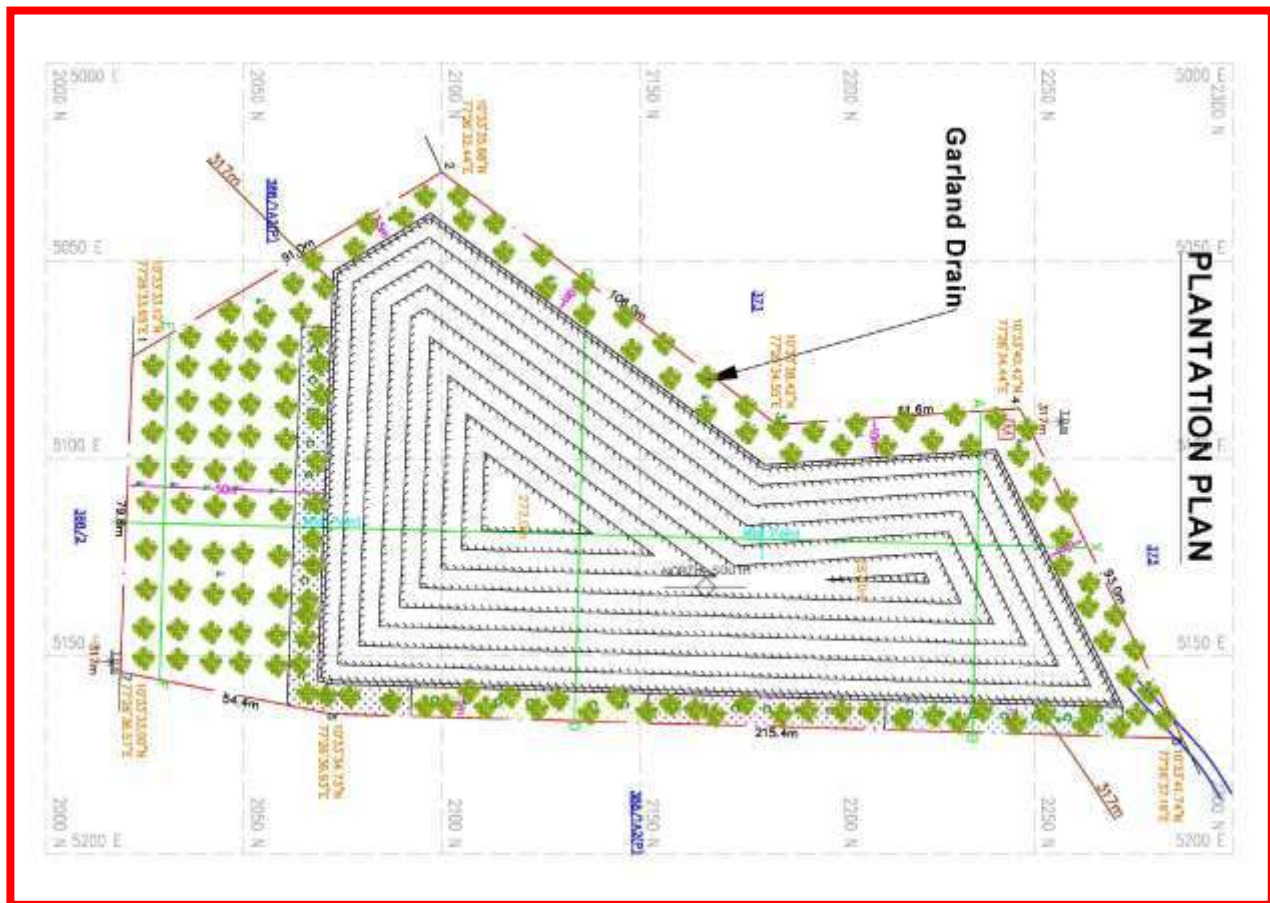
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**Table 4.16: Proposed Plantation**

Year	No. of trees proposed to be planted	Name of the species
I	232	Pungai, Vagai, Vembu, Manjal konrai, Naval, Puvarasu, etc.,
II	232	
III	232	
IV	232	
V	232	
<b>Total</b>	<b>1160</b>	

At the end of the life of the mine, an area of 1.50Ha of mined out area will be left as a water body. 0.02Ha will be mine roads, 0.01Ha will be infrastructure, 0.25Ha will be covered with vegetation and 0.551Ha will be unutilized area. The post mining land use plan showing afforestation and water body is shown in **Figure No- 4.5**.

**Figure 4.5: Mine Closure Plan**



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**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 and seasonal odai 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 31 persons directly and about 50 persons on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations as shown under.

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

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

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

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

**Table 4.17: CER Cost**

<b>Project Cost (Rs.)</b>	Rs.83,68,600/-
<b>CER Cost Requirement (2% of the Project Cost) (Rs.)</b>	Rs. 1,67,372
<b>Revised CER cost allocated (Rs.)</b>	Rs. 5,00,000/-



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However, 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 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. Hazardous jobs like blasting, loading, etc. 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:**

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

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

##### **4.8.3 MITIGATIVE MEASURES FOR OCCUPATIONAL HEALTH:**

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

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



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

#### **4.8.4 MITIGATIVE MEASURES FOR SAFETY ASPECTS:**

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

<b>SI No</b>	<b>Safety Equipments</b>
1.	Helmets
2.	Shoes
3.	Goggles
4.	Dust Mask
5.	Hand Gloves
6.	Reflective Jackets
7.	Ear Muffs
8.	Signal Lights/Flags

#### **4.9 LOGISTICAL SYSTEM:**

From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. The expected peak transport will be as follows:

**Table 4.18: Details of Transportation**

<b>Sl.no</b>	<b>Particulars of activity</b>	<b>Quantity</b>
A	Maximum Material Transported (m <sup>3</sup> /year) - Say	69100
B	No of days in a year	300
C	Transport hours per day	8
D	Truck capacity in T	20
	Trips per hour	3 Trips/hr

From the above table it is seen that there will be about 3 trips per hour. The existing road can easily absorb this traffic due to this project. However, the following mitigative measures are suggested:

- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.





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- ❖ 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.
- ❖ Keeping traffic regulators at vulnerable locations.
- ❖ Distribution of transport vehicles for avoiding choking of roads
- ❖ Limiting of speed
- ❖ Installation of barriers at vulnerable locations
- ❖ 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



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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.

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# **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 will be carried out. It involves jack hammer drilling, blasting, excavation, loading and transportation of Rough stone to the crushing units. As this method is techno economically proven, consideration of an alternate technology is not warranted.

#### **5.2 ALTERNATE SITE:**

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

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# **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.

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**Table 6.1: Environmental Monitoring Schedule**

S.No	Environmental Parameters	Parameters to be monitored	Monitoring area coverage /locations	Frequency of monitoring
1	Air Quality	Sulphur dioxide (SO <sub>2</sub> ), Oxides of Nitrogen (NO <sub>2</sub> ), Respirable Particulate Matter (PM <sub>2.5</sub> and PM <sub>10</sub> ).	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	Vibration	Peak Particle Velocity	Mine periphery	Once to arrive at optimum blasting parameters
6	Socio Economic Environment	Socio Economic Survey, Review of implementation of CER activities proposed	Buffer Zone	Yearly basis
7	Occupational Health	Occupational health survey to detect early incidence of diseases, Audiometry Test for workers in noise prone area and review of safety matters.	Staff and Workers involved in the project	Once in a year
8	Greenbelt	Maintenance	Within 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:







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

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

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

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

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

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



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**Table 6.4: IS – 10500 :2012 Standards**

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

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

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



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**Table 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 <sub>2</sub> ), 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 <sub>3</sub> ), mg/l, Max	45	No relaxation	IS 3025 (Part 34)	—
xvii)	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), 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 <sub>4</sub> ) 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 <sub>2</sub> S), 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 <sub>3</sub> ), 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.



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**Table 6.5: Noise Level Standards**

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

**Note :**

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

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

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

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

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

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

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



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

In mm/sec.

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

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

**6.4 ENVIRONMENTAL MONITORING COST:**

Towards environmental monitoring it is proposed to allocate a budget of Rs. 0.5 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 and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu.

### **7.3 RISK ASSESSMENT:**

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

<b>S.No</b>	<b>Factors</b>	<b>Causes of risks</b>	<b>Control measures</b>
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	<ul style="list-style-type: none"><li>• Periodical preventative maintenance and replacement of worn out accessories in the compressor and drill equipment.</li><li>• As per manufacturers recommendation</li></ul>



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S.No	Factors	Causes of risks	Control measures
		may break due to improper maintenance of rod.	rod to be replaced and bits will be changed.
3.	Blasting	a)Fly rock, ground vibration, noise etc. b) Improper charging of explosives	<ul style="list-style-type: none"> <li>• Burden and spacing will be kept optimum on trial basis.</li> <li>• Explosive charge per delay will be minimized.</li> <li>• Controlled blasting with Nonel will be used.</li> </ul>
4.	Excavation	a)Hauling and loading equipment are in such proximity while excavation b)Swinging of bucket over the body of tipper c) Driving of unauthorized person	<ul style="list-style-type: none"> <li>• Operator shall not operate the machine when person &amp; vehicles are in such proximity.</li> <li>• Shall not swing the bucket over the cab and operator leaves the machine after ensuring the bucket is on ground.</li> <li>• Shall not allow any unauthorized person to operate the machine by effective supervision.</li> </ul>
5.	Transportation	a)Operating the vehicle "nose to tail" b) Overloading of material c) While reversal & overtaking of vehicle d) Operator of truck leaving his cabin when it is loaded	<ul style="list-style-type: none"> <li>• It will be ensured that all these causes will be nullified by giving training to the operators.</li> <li>• No over loading will be done.</li> <li>• Audio visual reverse horn will be provided.</li> <li>• Proper training will be given.</li> </ul>
6.	Fire due to electricity and Oil	a)Due to the short circuit of cables & other electrical parts b) Due to the leakage of inflammable liquid like diesel, oil etc.	<ul style="list-style-type: none"> <li>• Electrical parts shall be cleaned frequently with the help of dry air blower</li> <li>• All fastening parts and places will be tightening. Suitable fire suppression equipment shall be provided.</li> </ul>
7.	Natural calamities	Unexpected happenings	The mine management is capable to deal with the situation.

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





### **7.3.1. DISASTER MANAGEMENT PLAN:**

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

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

Mining operation in 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.

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

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

#### **7.4 REHABILITATION AND RESETTLEMENT (R & R) PLAN:**

The mining activities will be carried out within the mine lease 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.

#### **7.5 MINE CLOSURE PLAN:**

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



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**7.6 CUMULATIVE IMPACT STUDY:**

As mentioned earlier, this Rough Stone and Gravel Quarry is located in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu. The details of the other quarries located within the 500m radius of the project considered for cumulative impact study now (**Annexure-3**) has been provided below:

**Table 7.1: Details of quarries within 500m radius**

Sl.No	Name of the Quarry Owner	Village & S.F.No	Extent (Ha)	Lease Period	Remarks
<b>Existing Quarries</b>					
1	Thiru S.Karthikeyan, S/o.P.Senapathi, 79, New Dharapuram Road (Nehruji Road), Palani Taluk, Dindigul	Kolumamkondan Village 388/1A(P)	1.98.0	14.06.2018 to 13.06.2023	-
<b>Abandoned Quarries</b>					
1	K.Rathinamoorthi, S/o. R.Kumaravel, 631/C2 Vayalur, Pusphathur Post, Palani Taluka	Kolumamkondan Village 373(P) B-III	1.50.0	10.05.2011 to 09.05.2016	Expired
2	Tmt.Paraimalam, W/o.Balathandayuthapani, 12/1 Gopal Nagar, Coimbatore	Kolumamkondan Village 373(P) B-II	1.50.0	04.08.2008 to 03.08.2018	Expired
3	Tmt.R.Sagundaladevi, W/o.K.Rathinamoorthi, No.631/C/2, Vayallor, Pushpathur (Po), Palani Taluk, Dindigul District	Kolumamkondan Village, 230(P), 231(P)	2.70.0	04.03.2016 to 03.03.2021	Expired
<b>Present Proposed Quarries</b>					
1	Thiru T.Kumaresh, S/o.(L) Thangamuthu, Madukkarai (Via) Coimbatore District	Kolumamkondan S.F.No.388/1A2(P)	2.33.1	--	Applied Area
2	Thiru A.Thangaraj, S/o.Arumaga Gounder, Vayalur, Pushpathur Post, Palani Taluk, Dindigul	Kolumamkondan Village, S.F.No.218/1,219/1	4.58.8	--	Proposed Quarry
<b>Total</b>			<b>8.89.9</b>		

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. As such cluster situation applicable and this EMP is prepared.



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The baseline monitoring carried out for this project reflects the cumulative impact of these existing quarries. Considering that the lease period of the existing quarry will be coming to an end shortly, this proposed quarry will serve more as a replacement for the existing quarry to ensure meeting the present Roughstone demands.

#### **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 gravel, followed by 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° 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



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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 500 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, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures.

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



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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 9 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 facilities for the local schools and panchyats

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

By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent 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.

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# **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.9430/SEAC/ToR-1274/2022 dated 08.10.2022. Environmental cost benefit analysis is not prescribed in the terms of reference. Hence, it is not applicable for this project.

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# **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, metalliferous mining regulation, mineral conservation and development rules, etc,
- ❖ Ensuring environmental preservation by adoption of remedial measures for control of air, water quality, noise status, biological improvements, green belt creation, etc.,
- ❖ Extending CER activities to cater to the needs of local community for various benefits like improvement of physical and social infrastructures for the welfare of local community.
- ❖ Ensuring that all mining operations such as deployment of HEMM, conduct of drilling and blasting operations, etc are strictly conducted keeping with regulatory standards & maintaining safe working environment in the area.



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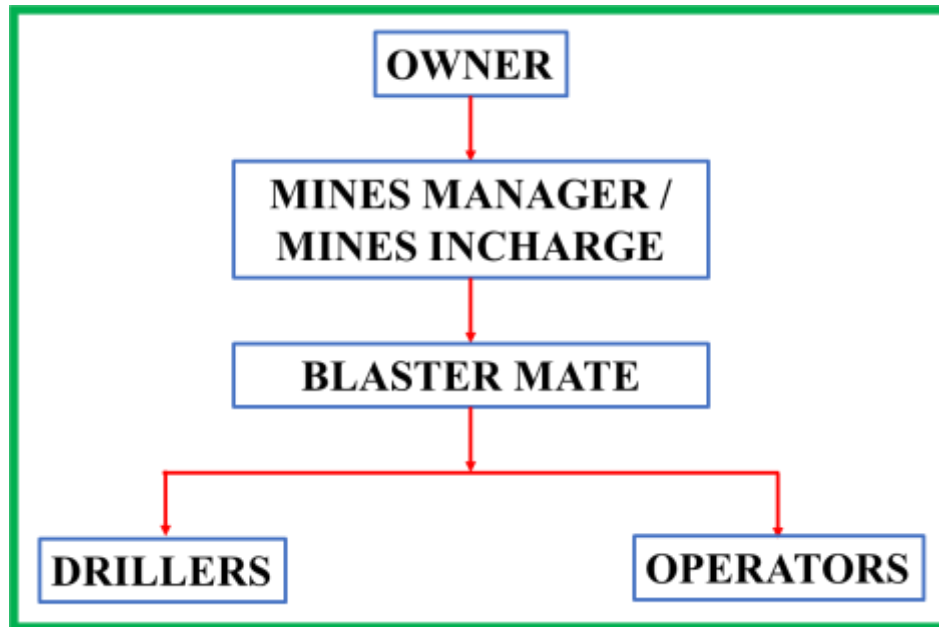
- ❖ Providing periodical training on safety, Health, & Environment to all employers.
- ❖ Any infringement / violation of any rule or unsafe mining operations should be reported mines manager, should be reported by the foremen/ blaster mate etc, who will take immediate corrective measures for avoiding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

**10.2.2 ENVIRONMENTAL MANAGEMENT CELL:**

The Mines Manager/Mine Incharge 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.

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- ❖ 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

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

- Effective implementation of the environmental management measures in a holistic manner
- Devising an operation plan for mining and transportation activities.



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- Various natural calamities like rain, flooding, evacuation plans etc. will also be deliberated by this committee to form risk management and emergency management plan pertaining to the cluster.
- The environmental policy of the company will be implemented and proper sustainable mining in accordance with statutory regulations will be enforced for the quarries in the cluster.
- Furnishing action plan regarding restoration strategy
- Deliberate on the health of the workers involved in the mining and also the health of the public
- Carrying out detailed study on the impact of mining on:
  - Soil health & biodiversity
  - Climate change leading to droughts, floods, etc.
  - Pollution leading to release of greenhouse gases (GHG) rise in temperature and livelihood of local people
  - Possibilities of water contamination and impact on aquatic ecosystem health.
  - Agriculture, Forestry & Traditional practices.
  - Hydrogeothermal/Geothermal effect due to destruction in the Environment.
  - Bio-geochemical process and its footprints including environmental stress.
  - Sediment geochemistry
- Furnishing action plan to achieve sustainable development goals with regards to water, sanitation and safety.
- Furnishing fire safety and evacuation plans in case of fire accidents.
- Implementation of steps to effectively utilize energy.





### **10.2.3 ENVIRONMENTAL MANAGEMENT PLAN:**

#### **10.2.1.1 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.
- Controlled blasting techniques with NONEL.
- Provision of dust filters / mask to workers working at highly dust prone and affected areas.
- Covering of drill holes with wet cloth, using sharp drill bits
- Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
- Proper maintenance of haul roads, HEMM and dumpers.
- Covering of loaded tippers with tarpaulins during transportation
- 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.
- Fencing with Green netting will be carried out on all sides of the lease area.



### **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 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**

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



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

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

**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 & 50m 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



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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**

S. No	Mitigation Measure	Capital cost	Recurring Cost /Annum
<b>Air Environment</b>			
1	Water sprinkling	8.00	0.50
2	Installing wheel wash system near gate of quarry	0.50	0.20
3	Muffle blasting – To control fly rocks during blasting	0.00	0.10
4	Wet Drilling with dust extraction	0.25	0.03
5	Environmental Monitoring	0.00	0.50
6	Transport Trucks -Monitoring exhaust fumes, covering with tarpaulin, monitoring manually with security guard to avoid overloading and installation of speed governors, Parking area with flaggers for traffic management	1.60	0.53
7	Road Maintenance - Haul road maintenancem Regular sweeping and maintenance of approach road	0.00	0.47
<b>Sub-Total (A)</b>		<b>10.35</b>	<b>2.32</b>
<b>Noise Environment</b>			
8	Controlled Blasting using NONEL, provision of blaster shed	0.50	7.14
<b>Sub-Total (B)</b>		<b>0.50</b>	<b>7.14</b>
<b>Water Environment</b>			
9	Surface Runoff Management Structures	0.23	0.05
<b>Sub-Total (C)</b>		<b>0.23</b>	<b>0.05</b>
<b>Implementation of EC, Mining Plan &amp; DGMS Condition</b>			
10	Waste Management - Collection and Disposal	0.30	0.22
11	Fencing and Green Net Provision	4.66	0.10
12	Health and Safety - Provision of PPEs, IME, PME, First aid facility	1.24	0.71
13	Sign Boards -safety precaution signages, EC Conditions display board	0.20	0.03
16	Installation of CCTV cameras	0.30	0.05
17	Remuneration of statutory persons	0.00	7.80
<b>Sub-Total (D)</b>		<b>6.70</b>	<b>8.91</b>
<b>Green Belt Development</b>			
34	Plantation Inside the lease area(400 Nos.)	0.80	0.12
35	Plantation Outside the lease area (760 Nos.)	2.28	0.23
<b>Sub-Total (E)</b>		<b>3.08</b>	<b>0.35</b>
<b>Grand Total</b>		<b>20.86</b>	<b>18.78</b>

Towards EMP measures, Rs.20.86 lakhs is allocated under capital cost. Besides, Rs.18.78 lakhs per annum will be spent under recurring cost. All the recurring cost of



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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.

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# **CHAPTER-XI**

## **SUMMARY AND CONCLUSION**

## **CHAPTER 11**

### **SUMMARY & CONCLUSION**

#### **11.1 INTRODUCTION:**

**Thiru T.Kumaresh** proposes to operate a **Rough Stone and Gravel Quarry** Survey No. at 388/1A2(P) over an area of 2.331 Ha in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu and has initiated action towards obtaining environmental clearance.

It is proposed to mine 2,29,340 m<sup>3</sup> of Roughstone, 15,042 m<sup>3</sup> of Gravel, 60,168m<sup>3</sup> of Weathered for a period of 5 years upto a depth of 40m as per approved ToR as against the mining plan approved quantity of 2,33,610 m<sup>3</sup> of Roughstone, 15,042 m<sup>3</sup> of Gravel, 60,168m<sup>3</sup> of Weathered for a period of 5 years upto a depth of 45m.

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. The details of the quarries located within the 500m radius of the project is given vide **Annexure-3**. A cumulative impact study has been carried out and furnished in **Para 7.3, Chapter-VII**.

This EIA/EMP report is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide letter no. SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022 dated 08.10.2022 and is in conformance of the generic structure prescribed by MOEF&CC in their notification of September 2006 and the approved mining plan.

#### **11.1.1 STATUTORY APPROVALS:**

<b>S.No</b>	<b>Statutory Approval</b>	<b>Authority</b>	<b>Letter Number and Date</b>	<b>Reference</b>
1.	<b>Precise Area Communication Letter</b>	Assistant Director, Dep. of Geology & Mining, Dindigul	Rc.No.50/2022 (Kanimam) dated 04.05.2022	<b>Annexure-1</b>
2.	<b>Mining Plan Approval</b>	Assistant Director, Dep. of Geology & Mining, Dindigul	Rc.No.50/2022 (Kanimam) dated 09.05.2022	<b>Annexure-2</b>
3.	<b>Details of other quarries within 500m radius</b>	Assistant Director, Dep. of Geology & Mining, Dindigul	Rc.No.50/2022 (Kanimam) dated 09.05.2022	<b>Annexure-3</b>

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**11.1.2 ENVIRONMENTAL CLEARANCE APPLICATION:**

Particulars	Details
Terms of Reference	Received from SEIAA, Tamil Nadu vide their Lr No.SEIAA-TN/F.No.9430/SEAC/ToR-1274/2022. Dated:08.10.2022.
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Winter Season (Dec 2022 to Feb 2023)

**11.2 SALIENT FEATURES OF THE PROJECT:**

**Table 11.1: Site Details**

Location	Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu
Survey No.	388/1A2(P)
Coordinates	<b>Latitude:</b> 10°33'33.00"N to 10°33'41.74"N <b>Longitude:</b> 77°26'32.44"E to 77°26'37.19"E
Nearest Highway	SH-192 (Melkaraipatty – Palani) – 1.0 Km (W)
Nearest Village	Kolumakondan – 0.9km (NW)
Nearest Town	Palani – 14km - SE
Nearest Railway Station	Pushpathur RS – 4.5km - SW
Nearest Airport	Coimbatore – 68Km – NW
Topography	Plain terrain, dry lands with scarce vegetation.
Accessibility	There is an existing road from the area leads to Kolumankondan – Korikadavu road on Northern side of the area.
Drainage	There is a seasonal odai passing on southern side of the area for which 50m safety distance maintained. Another seasonal odai passing on Northern side and is 240m away from the area.

**Table 11.2: Environment Setting of The Study Area**

S.No	PARTICULARS	DETAILS
1	Nearest highway	(SH-192) Melkaraipatty – Palani – 1.0km (W)
2	Nearest Railway station	Pushpathur RS – 4.5km - SW
3	Nearest Airport	Coimbatore – 68Km – NW
4	Nearest major water bodies	Odai – (S) Lease Area Odai - 240m- N, Shanmukha Nadi- 4.5km-E, Amaravathi River- 7.1km-W,
5	Nearest town/City	Palani – 14km - SE





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S.No	PARTICULARS	DETAILS
6	Nearest villages	Pushpathur – 3.8km (SW) Kolumakondan – 0.9km (NW) Kovilampatti – 2.2km (E) Korikadavu – 3.5km (SE)
7	Notified Archaeologically important places, Monuments	Nil within 10m radius
8	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10m radius
9	Reserved / Protected Forests	Nil within 10 km radius
10	Defence Installations	Nil within 10 km radius
11	Seismic Zone	Zone – II (Least Active)
12	Other Industries in the study area	Other than few rough stone quarries, Crusher, there are no other industries in the nearby region.

**Table 11.3: Technical Description**

PARTICULARS	DETAILS				
Geological reserve	Roughstone – 9,32,520cum , Gravel- 23,313cum Weathered Rock-93,252cum				
Mineable reserve	Roughstone – 2,33,610cum , Gravel- 15,042cum Weathered Rock-60,168cum				
Method of Mining	Open cast mechanized mining method with drilling, blasting, excavation, loading and transportation of Roughstone to needy buyers.				
Production	YEAR	ROUGHSTONE (m3)	WEATHERED ROCK (m3)	GRAVEL (m3)	
	I	31110	30088	7522	
	II	31500	30080	7520	
	III	56960	-	-	
	IV	56870	-	-	
	V	52900	-	-	
	<b>Total</b>	<b>229340</b>	<b>60168</b>	<b>15042</b>	



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<b>PARTICULARS</b>	<b>DETAILS</b>
Waste Generation and Management	There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. The top overburden in the form of Gravel and weathered rock will be loaded into tipper and marketed to needy customers on payment of necessary Fees to Government. The excavated rough stone will be excavated and loaded into tipper to the needy buyers for producing crusher aggregates, M Sand.
Ultimate Depth	40m
Man power	31 People directly and more than 50 people indirectly
Mode of transport	By Road
Water requirement	10 KLD
Source of water	The required water will be procured from outside agencies initially. Later, water collected in the mine pit will be used to meet the needs.
Power requirement	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.
Life of the mine	5 Years
Project cost	Rs.83,68,600/-

**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 2022 to February 2023)** 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 Roughstone, and gravel quarry is located in in Kolumankondan Village, Palani Taluk, Dindigul District. Based on 2011 census data, in the 10km radius the following are present:



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

Details	Population	Percentage
<b>A. Gender-wise distribution</b>		
Male Population	77279	49.89
Female Population	77615	50.11
<b>Total</b>	<b>154894</b>	<b>100</b>
<b>B. Caste-wise population distribution</b>		
Scheduled Caste	37901	24.47
Scheduled Tribes	1157	0.75
Other	115836	74.78
<b>Total</b>	<b>154894</b>	<b>100</b>
<b>C. Literacy Levels</b>		
Total Literate Population	103162	66.60
Others	51732	33.40
<b>Total</b>	<b>154894</b>	<b>100</b>
<b>D. Occupational structure</b>		
Main workers	74782	48.30
Marginal workers	7915	5.10
<b>Total Workers</b>	<b>82697</b>	<b>53.40</b>
<b>Total Non-workers</b>	<b>72197</b>	<b>46.60</b>
<b>Total</b>	<b>154894</b>	<b>100</b>

**11.3.2.1 SAMPLE SURVEY:**

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

**11.3.3 EXISTING ENVIRONMENTAL QUALITY:**

**Table 11.5: Baseline Data**

A) METEOROLOGICAL DATA	Monitoring Location - Near Mine Lease Area	
	MINIMUM	MAXIMUM
Temperature in °C	14.8	34.0
Humidity in %	15.0	99.0
Wind speed Km/Hr	<1.8	25.9
Predominant wind direction (From)	NE	
B) AMBIENT AIR QUALITY	Monitoring Location – 5 locations	



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PARAMETER	RESULT ( $\mu\text{g}/\text{m}^3$ )		*LIMIT ( $\mu\text{g}/\text{m}^3$ )	
	Location	Core Zone		Buffer Zone
Particulate Matter (Size <10 $\mu\text{m}$ )		51.4 – 76.2	38.6 – 69.2	100
Particulate Matter (Size <2.5 $\mu\text{m}$ )		23.6 – 35.2	17.8 – 31.1	60
Sulphur Dioxide (as $\text{SO}_2$ )		5.5 – 8.4	4.4 – 7.2	80
Nitrogen Dioxide (as $\text{NO}_2$ )		7.4 – 12.1	6.0 – 10.2	80

**Conclusion:** The existing Ambient Air Quality levels for PM10, PM2.5,  $\text{SO}_2$  and  $\text{NO}_2$ , are within the NAAQ standards prescribed CPCB limits of 100  $\mu\text{g}/\text{m}^3$ , 60  $\mu\text{g}/\text{m}^3$ , 80  $\mu\text{g}/\text{m}^3$  & 80  $\mu\text{g}/\text{m}^3$ . 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  $\text{mg}/\text{m}^3$ )

C) WATER QUALITY		Monitoring Location – 5 locations	
PARAMETER	Result	*LIMIT ( $\mu\text{g}/\text{m}^3$ )	
pH at 25 °C	6.98 - 7.84	6.5-8.5	
Total Dissolved Solids, mg/L	392 - 946	2000	
Chloride as $\text{Cl}^-$ , mg/L	93.4 - 255	1000	
Total Hardness (as $\text{CaCO}_3$ ), mg/L	182 - 523	600	
Total Alkalinity (as $\text{CaCO}_3$ ), mg/L	155 - 242	600	
Sulphates as $\text{SO}_4^{2-}$ , mg/L	53.2 - 158	400	
Iron as Fe, mg/L	0.03 - 0.06	0.3	
Nitrate as $\text{NO}_3$ , mg/L	2.52 - 3.42	45	
Fluoride as F, mg/L	0.39 - 0.54	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 – 5 locations	
PARAMETER	RESULT dB(A)		*LIMIT ( $\mu\text{g}/\text{m}^3$ )
	Day Equivalent	Night Equivalent	
Core Zone	49.3	39.6	90
Buffer Zone	42.8 – 46.5	39.0 – 40.2	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	6.41 – 6.74		



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Electrical Conductivity ( $\mu\text{mho/cm}$ )	45.88 – 94.28
Organic matter (%)	0.94 – 1.25
Total Nitrogen (mg/kg)	246 – 355
Phosphorus (mg/kg)	18.14 – 18.94
Sodium (mg/kg)	1.98 – 2.32
Potassium (mg/kg)	395 – 620
Soil is of Silt Loam type.	

**F) LAND ENVIRONMENT:**

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

**Table 11.6: Land Use in 10Km Buffer Zone**

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	107.22	33.36
2	Fallow Land	155.02	48.23
3	Water bodies	6.03	1.88
4	Land Without Scrub	9.55	2.97
5	Land With Scrub	30.01	9.34
6	Solar panel	0.73	0.23
7	Settlement	10.89	3.39
8	Mining Area/ Industries	1.95	0.61
	<b>Total</b>	<b>321.40</b>	<b>100</b>

From the above table it is seen that 33.36 % of the study area is agriculture land and 48.23 % are fallow land. Land with scrub constitutes 9.34 %, lands without scrub constitute 2.97 % and remaining constitute others.

**G) BIOLOGICAL ENVIRONMENT:**

**Flora:** The lease area is a non-forest, private land with grsses shrubs, few trees like Prosopis juliflora, neem etc The detailed list of plants found in the core zone are given in Table no – 3.23 . The Dominated species in the buffer zone are Albizia amara, Borassus flabelliformis, Morinda tinctoria, Azadirachta indica, Cocus nucifera etc.

**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. No wild mammalian



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species was directly sighted during the field survey. There is no Schedule I species in the core & buffer zone. The list of fauna within the study area is given in Table No – 3.27.

**H) HYDROLOGICAL STUDY:**

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. 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.

**11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:**

**11.4.1 GENERAL:**

This is a proposed project and Semi – Mechanized Open Cast mining 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:**

The principal sources of air pollution in the area due to mining and allied activities are dust generation in the mine due to various activities such as excavation of material, movement of HEMM, loading, unloading and transportation operations.. Besides, Gas emission also occur as a result of emission of SO<sub>2</sub>, NO<sub>x</sub>, CO etc., from diesel driven mining equipment, compressors, generator sets, etc. The following measures will be adopted to control impact on the air quality due to mining operations in the lease area:

**Table 11.7: Mitigation Measures – Air Environment**

S.No	Activity	Mitigation Measures
1	Drilling	Usage of Drill bits in good condition
		Covering of drill holes with wet cloth
		Usage of sharp drill bits for drilling of holes.
		Provision of dust filters / mask to workers working at highly dust prone and affected areas.



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2	Blasting	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
		Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
		Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
		Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Proper maintenance of HEMM
		Enclosures for operator cabin.
		Imparting sufficient training to operators on safety and environmental parameters.
		Proper maintenance of hauling equipments.
		Avoiding overloading of dumpers.
4	Transportation	Regular wetting of transport road using mobile water tanker.
		Proper maintenance of haul road and other roads
		Setting up of tyre wash facility in the transport road.
		Avoiding overloading of tippers
		Covering of loaded tippers with tarpaulins during transportation
		Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
5	Others	Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
		Green netting will be carried out around the lease periphery on all sides.

Due to adoption of all these measures, no major impact on air quality is envisaged due to 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 PM<sub>10</sub> and PM<sub>2.5</sub>.

The resultant added concentrations with baseline figures even at worst scenario, show that the values of ambient air quality with respect to PM<sub>10</sub> are in the range of 56.2 µg/m<sup>3</sup> to 79.2 µg/m<sup>3</sup> and with respect to PM<sub>2.5</sub> are in the range of 28.3 µg/m<sup>3</sup> to 36.2 µg/m<sup>3</sup> which are within the statutory limits in each case.



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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 10.0 KLD comprising 1.0 KLD for drinking water and domestic use, 8.0 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 11.8: 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 660m 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	There is a seasonal odai passing on the southern side of the lease area for which 50m safety distance is maintained. Earthen bund formation in this side within the lease will be done. Good plantation will also be carried out in the safety zone. Besides, 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. 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.

- **Stage of Groundwater Development:** The groundwater resource data of Virudhunagar district was obtained from the data provided in the technical report of the Central Ground Water Board, South Eastern Costal Region – ‘District groundwater brochure,





Virudhunagar District.' Based on the report it is seen that this area can be categorized as 'Safe' from ground water development point of view.

- **Generation of mine pit water:** The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous both in space and depth. Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of weathering. In the nearby region, the formations are compact with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. The ultimate pit depth of mining is 40m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation.

#### **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 centres to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.

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- 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 in 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:**

To reduce ground vibratory conditions, various control measures will be implemented such as keeping PPV below 10mm/s for 8-25hz frequency range, formulating drilling and charging pattern with less explosive charge, initiating sequence and using NONEL, carrying out blasting with minimum charge per delay, avoiding blasting during strong winds etc. By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad at the mining areas vide Circular No. 7 dated 29 -08-1997. Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance. Elaborate details regarding the same are provided under section 4.4.2, Chapter-IV.

#### **11.4.6 IMPACT ON LAND ENVIRONMENT:**

The lease area of 2.331 Ha is a patta land in the name of the applicant M/s.Aadith Blue metals vide Patta No-1369. The applicant has obtained consent from Pattadhar. (Annexure No: IV & VII of mine plan report) and got it registered. 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. Plantation will be carried out in this safety zone area. Mining will be carried out up to 40m depth for 5 years. Ultimately the entire mined out area of 1.500Ha will be left as water body. 0.020 Ha will be the mine roads & infrastructure, 0.250 Ha will be covered with vegetation, 0.010Ha will be infrastructure and 0.550 Ha will be unutilized area. Entire mined



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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. In the lease area, safety barrier 7.5m around the periphery and 50m safety zone for odai is left. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 1160 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 31 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.5.0 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.



#### **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. There will be about 5 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.

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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.20.86 Lakhs is allocated under capital cost. Besides, Rs.18.78 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. 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. As such cluster situation applicable and this EMP is prepared. The baseline monitoring carried out for this project reflects the cumulative impact of these existing quarries. Considering that the lease period of the existing quarry will be coming to an end shortly, this proposed quarry will



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serve more as a replacement for the existing quarry to ensure meeting the present Roughstone demands.

**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. Besides, it will meet the raw material requirement of the construction industry also.

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# **CHAPTER - XII**

## **DISCLOSURE OF CONSULTANTS ENGAGED**

**CHAPTER 12**

**DISCLOSURE OF CONSULTANTS ENGAGED**

**Creative Engineers & Consultants**, Chennai is an **NABL** accredited testing laboratory and **NABET** accredited EIA consultancy. Established over 25 years ago, this company has steadily made good strides in the environmental impact assessment fields, and is also one of the first companies to get accredited by NABET as an Accredited Consultant Organization as early as 2011. Creative Engineers & Consultants has to its credit, successful completion of numerous EIA/EMP reports, grant of environmental clearances and periodic environmental monitoring works. Presently, the company has been accredited by NABET as a 'Category-A' organization for the sectors of Mining of Minerals (opencast only), Thermal Power Plants, Mineral Beneficiation and Cement Plants with the accreditation valid upto 23.12.2023. The team of experienced professionals that are a part of this organization has been detailed below.

**Figure 12.1: Disclosure of consultants engaged**

<b>EXPERT NAME</b>	<b>QUALIFICATION</b>	<b>POSITION</b>	<b>EXPERIENCE</b>
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





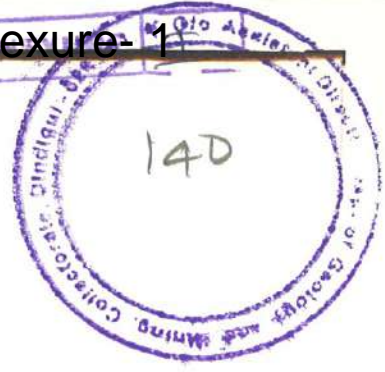
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EXPERT NAME	QUALIFICATION	POSITION	EXPERIENCE
			laboratory.
Mr. R. Babu raj	M.A (Sociology), B.Com(Y.L&Cost), ITI, Advance Diploma in Computer application	Functional Area Expert (Socio Economy)	Over 13 years of experience in dispersion modeling, computer applications. Specialized in CAD and computer software, applications. 5years experience in the field of socio economy 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 (AQ, WP)	More than 6 years of experience in Environment and allied fields.
Ms. G. Sandhya	B. Tech Chemical Engineering M.Tech Environmental Engineering	Functional Area Expert (AQ, WP)	Over 5 years experience in preparation of EIA/EMP reports

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# **ANNEXURES**



அனுப்புநர்

செ.பூர்ணவேல், எம்.எஸ்.சி.,  
உதவி இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திண்டுக்கல்

பெறுநர்

திரு.த.குமரேஷ்,  
த/பெ.லேட்.தங்கமுத்து,  
மதுக்கரை வழி,  
கோயம்புத்தூர்

ந.க.எண்.50/2022 (கனிமம்), நாள்: .04.2022

பொருள்: கனிமங்களும் சுரங்கங்களும் - சிறுவகைக் கனிமம் - திண்டுக்கல் மாவட்டம் - திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழும்புமம் கொண்டான் கிராமம், புல எண். 388/1ஏ (பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் கல் மற்றும் கிராவல் குவாரி செய்ய அனுமதி கோரி திரு.த.குமரேஷ் என்பவர் விண்ணப்பித்தது - புலத்தணிக்கை மேற்கொள்ளப்பட்டது - குத்தகை உரிமம் வழங்க உகந்த புலம் (Precise Area) என தீர்மானித்து ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் சான்றிதழ் சமர்ப்பிக்க கோருதல் - தொடர்பாக.

- பார்வை: 1. திரு.த.குமரேஷ், த/பெ.லேட்.தங்கமுத்து, மதுக்கரை வழி, கோயம்புத்தூர் என்பவரது மனு நாள்: 31.01.2022  
2. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்: 31.01.2022 (பழனி வருவாய் கோட்டாட்சியருக்கு முகவரியிடப்பட்டது)  
3. பழனி வருவாய் கோட்டாட்சியர் கடித ந.க.எண். 1195/2022/அ7 நாள்: 16.03.2022  
4. திரு.த.குமரேஷ், த/பெ.லேட்.தங்கமுத்து, மதுக்கரை வழி, கோயம்புத்தூர் என்பவரது திருத்திய கடிதம் நாள்: 01.04.2022  
5. உதவி இயக்குநர் (கனிமம்) திண்டுக்கல் புலத்தணிக்கை அறிக்கை நாள்: 28.04.2022  
6. அரசாணை எண்: 79, தொழில் (எம்.எம்.சி1)துறை, நாள்: 6.4.2015  
7. அரசாணை எம்.எஸ்.எண்.169, தொழில்(எம்.எம்.சி1) துறை நாள்: 04.08.2020

பார்வை 1-ல் திரு.த.குமரேஷ் என்பவர் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி எண்.19(1)ன்படி திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழும்புமம் கொண்டான் கிராமம், புல எண். 388/1ஏ (பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் கல் மற்றும் கிராவல் குவாரி குத்தகை அனுமதி வழங்க கோரி கீழ்க்கண்ட ஆவணங்களை இணைத்து விண்ணப்பித்துள்ளார்.

1. விண்ணப்பக் கட்டணம் ரூ.1500/- செலுத்தியதற்கான சலான்.
2. விண்ணப்பித்துள்ள புலம் தவிர வேறு குவாரி ஏதுமில்லை என்பதற்கும், வருமானவரி செலுத்தும் அளவிற்கு வருமானம் ஈட்டும் வருவாய்ப் பிரிவை சேர்ந்தவர் அல்ல என்பதற்கும் கனிமக் கட்டணமாக செலுத்த வேண்டிய நிலுவை ஏதுமில்லை என்பதற்கும் சான்றொப்ப அலுவலர் மூலமாக எழுதி தரப்பட்ட உறுதிமொழி ஆவணம்.
3. சிட்டா நகல், அ" பதிவேடு நகல், புல வரைபட நகல், தொகுப்பு வரைபட நகல் மற்றும் அடங்கல் நகல்.

மேற்படி விண்ணப்பத்தின் மீது பழனி வருவாய் கோட்டாட்சியரிடம் பார்வை 2-ல் காணும் கடிதத்தில் பரிந்துரை அறிக்கை கோரப்பட்டதை தொடர்ந்து பார்வை 3-ல் காணும் கடிதத்தில் பழனி வருவாய் கோட்டாட்சியர் விண்ணப்பதாரருக்கு குத்தகை உரிமம் வழங்குவது குறித்து தனது பரிந்துரை அறிக்கையினை பின்வருமாறு சமர்ப்பித்துள்ளார்.

திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமங்கொண்டான் கிராமம், புல எண்.388/1ஏ-ல் 6.29.0 ஹெக்டேர் புன்செய் நிலம் பட்டா எண்.643-ல் சேனாபதி மகன் கார்த்திக்கேயன்-1, கார்த்திகேயன் மனைவி அஸ்வினி பாலா-2, ஆண்டனி ரபேல், சசிசுமார், ஷாஜ்-ஆதித் ப்ரு மெட்டல்ஸ்-3 ஆகிய பெயர்களில் கூட்டாக பட்டா தாக்கலாகியுள்ளது என்றும், குத்தகை ஒப்பந்தப்பத்திரம் எழுதிக் கொடுப்பவர்களின் பெயரில் பட்டா மாறுதல் செய்யப்பட்டுள்ளது என்றும், கல்குவாரி செய்ய அனுமதி கோரும் புலத்தின் புலப்பட சுவடியில் வழியாக ஓடை குறியீடு உள்ளது என்றும், ஆனாலும் நிலவியலில் ஓடை இல்லை என்றும், மேற்படி புலத்தின் தென்பகுதியில் ஓடைக்கு வழிவகை செய்துள்ளார் என்றும், உரிமம் கோரும் நிலத்தினைச் சுற்றி 300 மீட்டர் சுற்றளவிற்குள் குடியிருப்புகள், அங்கீகரிக்கப்பட்ட வீட்டுமனைகள், வழிபாட்டுதலங்கள் மற்றும் புராதான சின்னங்கள் ஏதுமில்லை என்றும், உரிமம் கோரியுள்ள நிலத்தைச் சுற்றிலும் 50மீட்டர் சுற்றளவிற்குள் உயர் மற்றும் தாழ்வழுத்த மின்கம்பிகள், தந்திக்கம்பிகள், சாலை, வண்டிப்பாதை ஏதும் இல்லை என்றும், கல்குவாரி செய்ய அனுமதி கோரும் நிலத்தின் ஒரு பகுதியில் ஏற்கனவே வேறொரு நபருக்கு கல்குவாரி உரிமம் வழங்கப்பட்டு, குவாரி செயல்பாட்டில் இருந்து வருகிறது என்றும், உரிமம் கோரியுள்ள நிலம் பஞ்சமர் நிலமோ, ஒப்படை வழங்கப்பட்ட நிலமோ இல்லை என்றும், மனுதாரருக்கு உரிமம் வழங்குவது தொடர்பாக கிராமத்தில் அ1 அறிவிக்கை பிரகரம் செய்யப்பட்டதில் ஆட்சேபனை ஏதும் வரப்பெறவில்லை என்றும், அனுமதி கோரும் நிலத்தின் பேரில் வழக்கு ஏதும் நிலுவையில் இல்லை என்றும், எனவே, விண்ணப்பதாரர் திரு.த.குமரேஷ் என்பவருக்கு பழனி வட்டம், கொழுமம் கொண்டான் கிராமம், புல எண். 388/1ஏ (பகுதி)-ல் 2.33.10 ஹெக்டேரில் கனிம விதிகள் மற்றும் அரசினர் விதிகளுக்குட்பட்டு சாதாரணகல் மற்றும் கிராவல் குவாரிப்பணி செய்ய அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

இந்நிலையில் பார்வை 4-ல் காணும் கடிதத்தில் விண்ணப்பதாரர் திரு.த.குமரேஷ் என்பவர் தான் விண்ணப்பித்துள்ள புல எண்.388/1ஏ-ன் மொத்தபரப்பு 6.29.0 ஹெக்டேரில் 2.33.10 ஹெக்டேர் பரப்பில் குவாரிப்பணி செய்ய விண்ணப்பித்திருந்ததாகவும், அதில் புல எண்.388/1ஏ-னை 388/1ஏ1 மற்றும் 388/1ஏ2 என பிரிக்கப்பட்டுள்ளதாகவும், தற்போது புதிதாக பிரிக்கப்பட்டுள்ள புல எண்.388/1ஏ2-ன் மொத்தப்பரப்பு 4.26.70 ஹெக்டேர் பரப்பில் 2.33.10 ஹெக்டேர் பரப்பில் கல்குவாரி செய்ய அனுமதிக்குமாறு கோரியுள்ளார்.

மேற்படி புலங்களை உதவி இயக்குநர்(கனிமம்) அவர்கள் 28.04.2022 அன்று புலத்தணிக்கை செய்து பார்வை 5-ல் கண்டுள்ளபடி அறிக்கையினை பின்வருமாறு சமர்ப்பித்துள்ளார்.

அவ்வறிக்கையில் திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமம் கொண்டான் கிராமம், புல எண். 388/1ஏ2 (பகுதி)-ல் 2.33.10 ஹெக்டேர் நிலம் பட்டா எண்.1369-ன்படி தி/ள்.ஆதித் ப்ரு மெட்டல் நிறுவனத்தின் பெயரில் பட்டா தாக்கலாகியுள்ளது என்றும், மேலும் விண்ணப்ப புலமானது சமதளமாக உள்ளதாகவும் மேற்படி புலத்தில் உள்ள பாறைகள் சார்னகைட் வகையைச் சார்ந்தது என்பதை அறிய முடிவதாகவும், இவை சாதாரண கற்கள், ஜல்லி, எம்.சாண்ட் (Blue Metals) ஆகியவை தயாரிக்க உகந்த பாறைகள் என்றும், மனு செய்துள்ள புலத்தில் பாறைப்படிவங்களின் தலப்போக்கு வடக்கு-தெற்கு திசையில் அமைந்துள்ளது என்றும், மேற்படி புலத்தில் 0-1 மீ வரை மண் படிந்துள்ளது என்றும், 1-4மீ

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சிதைவடைந்த பாறைகள் (Weathered Rock) மற்றும் 4 மீ-க்கு கீழே சார்னைக்கட் வகையைச் சார்ந்த பாறைகள் மெல்லிய இணைப்புகளுடன் காணப்பட்டது என்றும், விண்ணப்ப புலங்களின் வடக்கு மற்றும் வடமேற்கு பகுதியில் திரு.குரத்தினமூர்த்தி மற்றும் திருமதி.பரிமளம் ஆகியோருக்கு சாதாரண கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் வழங்கப்பட்டு குத்தகை உரிமம் முடிவடைந்த அரசுப் புறம்போக்கு குவாரிகள் அமைந்துள்ளது என்றும், விண்ணப்ப புலத்தின் கிழக்குப் பகுதியில் புல எண்.388/1ஏ(பகுதி)-ல் 1.98.0 ஹெக்டேர் பட்டா நிலத்தில் திரு.எஸ்.கார்த்திகேயன் என்பவருக்கு திண்டுக்கல் மாவட்ட ஆட்சித் தலைவர் அவர்களின் செயல்முறை ஆணை ந.க.எண்.348/2017 (கனிமம்) நாள்: 14.06.2018-ன்படி 14.06.2018 முதல் 13.06.2023 வரை ஐந்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டு குத்தகை காலம் நடைமுறையில் உள்ளது என்றும், விண்ணப்ப புலங்களைச் சுற்றி 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், வீட்டுமனைகள், வழிபாட்டுதலங்கள், புராதான சின்னங்கள் ஏதும் இல்லை. 50மீட்டர் சுற்றளவில் உயரமுத்த/தாழ்வழுத்த மின்கம்பிகள், சாலை, வண்டிப்பாதை எதுவும் இல்லை என்றும், கல்குவாரி செய்ய அனுமதி கோரும் புலத்தின் புலப்படச் சுவடியின் வழியாக ஓடை குறியீடு உள்ளது. ஆனால் நிலவியலில் ஓடை இல்லை என்றும், விண்ணப்பதாரர் மேற்படி புலத்தின் தென்பகுதியில் ஓடைக்கு வழிவகை செய்துள்ளார் என்றும், மேற்படி புலத்தின் நான்குமால் எல்லை விபரம் பின்வருமாறு:

வடக்கு: புல எண். 373- அரசு புறம்போக்கு குத்தகை உரிமம் முடிவடைந்த குவாரி  
 தெற்கு: புல எண். 388/2 - பூமிதான நிலம்  
 கிழக்கு: புல எண். 388/1ஏ- நடைமுறையில் உள்ள குவாரி  
 மேற்கு: புல எண். 373 அரசு புறம்போக்கு குத்தகை உரிமம் முடிவடைந்த குவாரி

எனவே, திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழும்பு கொண்டான் கிராமம், பட்டா புல எண். 388/1ஏ2 (பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்.19(1) மற்றும் 20-ன்படி சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க திரு.த.குமரேஷ் என்பவருக்கு 5 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

**நிபந்தனைகள்:**

1. விண்ணப்ப புலங்களின் அருகில் உள்ள பட்டா நிலங்களுக்கு முறையே 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
2. விண்ணப்ப புலங்களின் வடக்கு மற்றும் வடமேற்குப் பகுதியில் அமைந்துள்ள அரசு புறம்போக்கு நிலத்திற்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
3. விண்ணப்ப புலங்களின் தெற்கு பக்கமாக செல்லும் ஓடைக்கு மற்றும் பூமிதான நிலத்திற்கு 50மீட்டர் பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. விண்ணப்ப புலங்களின் மேற்கு பக்கமாக செல்லும் வண்டிப்பாதைக்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
5. பொதுமக்களுக்கும் அருகிலுள்ள நிலங்களுக்கும் எவ்வித பாதிப்பும் ஏற்படுத்தக் கூடாது.
6. குவாரிப்பணி தொடங்குவதற்கு முன்பாக குவாரியினை சுற்றி முள்கம்பிவேலி (Wire Fencing) அமைத்து குவாரிப்பணி தொடங்கவேண்டும்.
7. முறைப்படியும் விஞ்ஞானப்பூர்வமாகவும் குவாரிப்பணி செய்யவேண்டும்.
8. பாறைகளை தகர்க்க கைத்துளைப்பான்களை கொண்டு பாறைகளை துளையிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
9. சான்றிதழ் பெறப்பட்ட போர்மென், வெடிப்பாளர் மற்றும் சுரங்க மேலாளர் மூலம் முறையே குவாரிப்பணி செய்யப்பட வேண்டும்.

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10. குவாரிப்பணி தொடங்குவதற்கு முன் சுரங்க பாதுகாப்பு இயக்குநர், சென்னை அவர்களுக்கு தகவல் தெரிவிக்கப்பட வேண்டும்.

இந்நேரில் பார்வை 6-ல் காணும் அரசாணையில் சிறுகனிமக் குவாரிகளுக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்: 41-ன்படி வரைவு சுரங்கத்திட்ட அறிக்கை மற்றும் 42-ன்படி மேற்படி குத்தகை உரிமம் கோரிய புலத்தில் குவாரிப்பணி செய்வதால் சுற்றுப்புறச் சூழலுக்கு மாசுபடுதல் தொடர்பாக, மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்தின் தடையின்மைச் சான்று பெற்று குவாரி குத்தகை உரிமம் வழங்க வேண்டும் என அறிவுறுத்தப்பட்டு நடைமுறையில் செயல்படுத்த தெளிவுரை வழங்கப்பட்டுள்ளது.

1) மேற்படி அரசாணையில் பத்தி 7 மற்றும் 8-ல் குறிப்பிட்டபடி மாவட்ட ஆட்சித்தலைவர் மூலம் குத்தகை வழங்க கருதப்பட்ட பரப்பிற்கு வரைவு சுரங்கத்திட்ட அறிக்கை சமர்ப்பிக்க அறிவுறுத்திய கடிதம் குத்தகைதாரரால் பெறப்பட்ட நாளிலிருந்து மூன்று மாதத்திற்குள் சுரங்கத் திட்ட அறிக்கை தயார் செய்து மூன்று பிரதிகள் மாவட்ட அளவில் உள்ள துணை இயக்குநர்/உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அலுவலகத்தில் சமர்ப்பிக்கப்பட வேண்டும். குத்தகைதாரர் மூலம் பெறப்பட்ட வரைவு சுரங்கத்திட்ட அறிக்கையினை துணை இயக்குநர் / உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை பார்வை 6-ல் பத்தி 7(IV)-ல் குறிப்பிட்டபடி ஆய்வு செய்து ஒப்புதல் செய்து குத்தகைதாரருக்கு வழங்கவேண்டும்.

2) குத்தகைதாரர் ஏற்பளிக்கப்பட்ட வரைவு சுரங்கத்திட்ட அறிக்கை பெறப்பட்டவுடன் அத்துடன் கீழ்க்கண்ட ஆவணங்களை இணைத்து மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணைய அலுவலகத்திற்கு விண்ணப்பித்து தடையின்மைச் சான்று பெற்று சமர்ப்பிக்க வேண்டும்.

௮) படிவம்-I(Environment Impact Assessment Authority Notification 2006)

ஆ) An Environment impact Assessment Report

இ) An Approved Mining Plan, by the Competent Authority

3) ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்தின் தடையில்லாச் சான்று பெற்ற பின்னர் அதனடிப்படையில் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி எண்.19(1) -ன்படி திண்டுக்கல் புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநரால் மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது குறித்து இறுதி ஆணை பிறப்பிக்க முடிவு எடுக்கப்பட வேண்டும்.

பார்வை 7-ல் காணும் அரசாணையின்படி 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்.19(1)-ன்படி பட்டா நிலங்களில் உள்ள சிறுகனிமங்களை வெட்டியெடுத்துச் செல்ல குத்தகை உரிமம் வழங்கி ஆணையிடுவதற்கு சம்மந்தப்பட்ட உதவி இயக்குநர்/ துணை இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை அவர்களுக்கு அதிகாரம் வழங்கி ஆணையிடப்பட்டுள்ளது.

அ) எனவே, பழனி வருவாய் கோட்டாட்சியர் மற்றும் திண்டுக்கல் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநர் ஆகியோரின் பரிந்துரை அறிக்கையின்படி திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழும்புமம் கொண்டான் கிராமம், பட்டா புல எண். 388/1/2(பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் திரு.த.குமரேஷ் என்பவருக்கு 1959 ஆம் வருடத்தில் தமிழ்நாடு சிறுகனிமச் சலுகை விதி 19(1) மற்றும் 20-ன்படி ஐந்து ஆண்டுகளுக்கு சாதாரண கல் மற்றும் கிராவல் குவாரி செய்ய கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குத்தகை உரிமம் வழங்க உகந்த புலம் (Precise Area Communication) என கருதப்படுகிறது.

நிபந்தனைகள்:-

1. விண்ணப்ப புலங்களின் அருகில் உள்ள பட்டா நிலங்களுக்கு முறையே 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
2. விண்ணப்ப புலங்களின் வடக்கு மற்றும் வடமேற்குப் பகுதியில் அமைந்துள்ள அரசு புறம்போக்கு நிலத்திற்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
3. விண்ணப்ப புலங்களின் தெற்கு பக்கமாக செல்லும் ஓடைக்கு மற்றும் பூமிதான நிலத்திற்கு 50மீட்டர் பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. விண்ணப்ப புலங்களின் மேற்கு பக்கமாக செல்லும் வண்டிப்பாதைக்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
5. பொதுமக்களுக்கும் அருகிலுள்ள நிலங்களுக்கும் எவ்வித பாதிப்பும் ஏற்படுத்தக் கூடாது.
6. குவாரிப்பணி தொடங்குவதற்கு முன்பாக குவாரியினை சுற்றி முள்கம்பிவேலி (Wire Fencing) அமைத்து குவாரிப்பணி தொடங்கவேண்டும்.
7. முறைப்படியும் விஞ்ஞானப்பூர்வமாகவும் குவாரிப்பணி செய்யவேண்டும்
8. பாறைகளை தகர்க்க கைத்துளைப்பான்களை கொண்டு பாறைகளை துளையிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
9. சான்றிதழ் பெறப்பட்ட போர்மென், வெடிப்பாளர் மற்றும் சுரங்க மேலாளர் மூலம் முறையே குவாரிப்பணி செய்யப்பட வேண்டும்.
10. குவாரிப்பணி தொடங்குவதற்கு முன் சுரங்க பாதுகாப்பு இயக்குநர், சென்னை அவர்களுக்கு தகவல் தெரிவிக்கப்பட வேண்டும்.
11. 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண். 36(1)-க்குட்பட்ட அனைத்து விதிகளும் பொருந்தும்.
12. மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்தின் வழிமுறைகள் படி சுரங்கத்திட்டம் சமர்ப்பிக்கப்பட வேண்டும்.
13. மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்திடமிருந்து தடையில்லா சான்று பெற்று சமர்ப்பிக்கப்பட வேண்டும்.

மேலும் மேற்குறிப்பிட்ட விண்ணப்ப புலத்திற்கு வரைவு சுரங்கத்திட்ட அறிக்கையை இக்கடிதம் கிடைக்கப்பெற்ற நாளிலிருந்து மூன்று மாத காலத்திற்குள் தவறாது தாக்கல் செய்யப்படவேண்டும் மற்றும் ஏற்பளிக்கப்பட்ட வரைவு திட்ட அறிக்கை கிடைக்கப்பெற்ற பின்னர் மாநில அளவிலான சுற்றுப்புறச் சூழல் செயல் விழைவு மதிப்பீடு தடையில்லாச் சான்று பெற்று உரிய காலத்திற்குள் சமர்ப்பிக்க குத்தகைதாரர் கேட்டுக் கொள்ளப்படுகிறார். தவறும்பட்சத்தில் உரிய விதிகளின்படி இறுதி முடிவு எடுக்கப்படும்.

உதவி இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திண்டுக்கல்

நகல்:-  
இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
கிண்டி, சென்னை - 32.

14/5/22

## Annexure- 2

Annexure - 2

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From

To

S.Poornavel, M.Sc.,  
Assistant Director,  
Geology and Mining,  
Dindigul

Thiru.T.Kumaresh,  
S/o(L) Thangamuthu,  
Madukkarai (Via),  
Coimbatore District

**Rc.No. 50/2022 (Mines), dated: .05.2022.**

Sir,

Sub: Mines and Minerals - Minor Mineral - Rough stone - Dindigul District - Palani Taluk - Kolumamkondan Village - Patta Land in S.F.No.388/1A2(P) over an extent of 2.33.10 Hectare - preferred by Thiru.T.Kumaresh- Precise area communicated - Submission of Mining Plan for approval - Approved - Regarding.

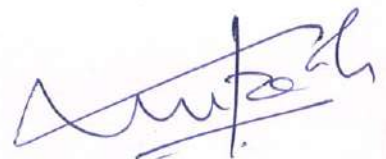
- Ref:
1. Application from Thiru.T.Kumaresh, S/o(L)Thangamuthu, Madukkarai Village, Coimbatore District dated.31.01.2022
  2. Precise Area Communication Notice Rc.No.50/2022 (Mines), dated: 04.05.2022
  3. Mining Plan submitted by Thiru.T.Kumaresh, S/o(L)Thangamuthu, Madukkarai Village, Coimbatore District dated.07.05.2022

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In the reference 2<sup>nd</sup> cited, the Assistant Director of Geology and Mining Dindigul has communicated the S.F.No.388/1A2(P) over an extent of 2.33.10 Hect of Kolumamkondan village, Palani Taluk, Dindigul District as precise area to the applicant Thiru.T.Kumaresh for grant of quarry lease for quarrying Rough Stone for a period of 5 years with a direction to produce an approved mining plan in respect of the precise area as per Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions stipulated in the Assistant Director of Geology and Mining letter dated 20.01.2022.

In response to the precise area communication letter issued by the Assistant Director of Geology and Mining Dindigul vide reference 2<sup>nd</sup> cited, the applicant has submitted three copies of mining plan duly prepared by Qualified Person for approval vide reference 3<sup>rd</sup> cited.

The draft mining plan submitted in respect of the precise area communication has been examined with reference to the provisions of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the followings are observed.





i) All the conditions stipulated in the Assistant Director of Geology and Mining Dindigul Letter Rc.No.50/2022 (Mines) dated: 04.05.2022 have been incorporated in the mining plan.

ii) The boundary Co-ordinates (GPS readings) for the entire boundary pillars of the area have been incorporated and shown in the mining plan.

iii) The reserves estimated in the mining plan is

Details	Geological reserves in Cu.m	Mineable Reserves in Cu.m	Yearwise production
Depth persistence in Mts.	45m below ground level	45m below ground level	45m below ground level
ROM	Rough Stone: 932520 W.Rock : 93252 Gravel : 23313	Rough Stone: 233610 W.Rock : 60168 Gravel : 15042	Rough Stone: 233610 W.Rock : 60168 Gravel : 15042
Recovery 100%	Rough Stone: 932520 W.Rock : 93252 Gravel : 23313	Rough Stone: 233610 W.Rock : 60168 Gravel : 15042	Rough Stone: 233610 W.Rock : 60168 Gravel : 15042

4. In the light of the above, in exercise of the powers conferred under Rule 41 (7) of Tamil Nadu Minor Mineral Concession Rules, 1959 the mining plan in respect of Rough Stone & Gravel quarry of Thiru.T.Kumaresh is approved subject to the following conditions.

i) The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.

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

iii) The mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

iv) Quarrying operations and production shall be carried out as per the approved Mining Plan and the applicant shall be liable to pay the cost of mineral if there is any deviation in the quantum indicated in the approved year wise quantum of production and any such cases as on date are to be dealt with as per Court direction.

**Encl:** 2 Copies of Approved Mining Plan.

  
Assistant Director,  
Geology and Mining,  
Dindigul

Copy submitted to:

1. The Chairman, SEIAA, Tamil Nadu, 3<sup>rd</sup> Floor, Panagal Maaligai, No.1, Jeenis Road, Saidapet, Chennai-15.
2. The Commissioner of Geology and Mining, Chennai-32.



From

To

S.Poornavel, M.Sc.,  
Assistant Director,  
Geology and Mining,  
Dindigul

Thiru.T.Kumaresh,  
S/o(L) Thangamuthu,  
Madukkarai (Via),  
Coimbatore District

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**Rc.No. 50/2022 (Mines), dated: .05.2022.**

Sub: Mines and Minerals - Minor Mineral - Rough stone - Dindigul District - Palani Taluk - Kolumamkondan Village - Patta Land in S.F.No.388/1A2(P) over an extent of 2.33.10 Hectare - preferred by Thiru.T.Kumaresh - requesting Rough Stone quarry lease - Details of quarries located in 500m radius-requested - furnished - reg.

Ref: Thiru.T.Kumaresh, S/o.Thangamuthu, Madukkarai (Via) Coimbatore letter dated.07.05.2022

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In the reference cited, Thiru.T.Kumaresh, the applicant of proposed Rough Stone quarry lease in S.F.No.388/1A2(P) over an extent of 2.33.10 Hectare., of Kolumamkondan Village, Palani Taluk, Dindigul District has requested to furnish the details of quarries located within 500 meters radius from his proposed quarry.

In this regard, the followings are furnished.

**i). Existing quarries**

Sl. No.	Name of the Owner (Tvl.)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
1.	Thiru.S.Karthikeyan, S/o.P.Senapathi, 79, New Dharapuram Road, (Neruji Road), Palani Taluk, Dindigul	Kolumamko ndan Village 388/1A(P)	1.98.0	14.06.2018 to 13.06.2023	-

**ii). Abandoned/Expired quarries**

Sl. No.	Name of the Owner (Tvl.)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
1.	K. Rathinamoorthi, S/o. R. Kumaravel, 631/C/2 Vayalur, Pusphathur Post, Palani Taluk	Kolumamko ndan Village 373(P) B-III	1.50.0	10.5.2011 to 9.5.2016	Expired
2.	Tmt.Paraimalam, W/o.Balathandayutha pani, 12/1 Gopal Nagar, Koimbatore.	Kolumamko ndan Village 373(P) B-II	1.50.0	4.8.08 to 3.8.2018.	Expired

*[Handwritten Signature]*

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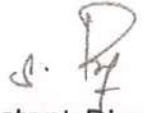
3.	Tmt.R.Sagundaladevi, W/o.K.Rathinamoorthi, No.631/C/2, Vayallor, Pushpathur (Po), Palani Taluk, Dindigul District.	Kolumamkondan Village 230(P), 231 (P)	2.70.0	04.03.2016 to 03.03.2021	Expired
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**iii). Present Proposed quarries**

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
1.	Thiru.T.Kumaresh, S/o(L) Thangamuthu, Madukkarai (Via), Coimbatore District	Kolumamkondan SF.No. 388/1A2(P)	2.33.10	applied area	--
2.	Thiru.A.Thangaraj, S/o.Arumuga Gounder, Vayalur, Pushpathur Post, Palani Taluk, Dindigul	Kolumamkondan Village SF.No. 218/1, 219/1	4.58.80	proposed quarry	

**iv). Future Proposed quarries**

Sl. No.	Name of the Owner (Tvl.)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
----- NIL -----					

  
 Assistant Director,  
 Geology and Mining,  
 Dindigul



**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
<b>0-2 km,Palani Sub-District, Dindigul District</b>																						
1	1	Kolumakondan	Rural	539	1861	937	924	156	83	73	318	159	159	0	0	0	1199	675	524	662	262	400
		<b>total (A)</b>		<b>539</b>	<b>1861</b>	<b>937</b>	<b>924</b>	<b>156</b>	<b>83</b>	<b>73</b>	<b>318</b>	<b>159</b>	<b>159</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1199</b>	<b>675</b>	<b>524</b>	<b>662</b>	<b>262</b>	<b>400</b>
<b>2-5 km,Palani Sub-District, Dindigul District</b>																						
2	1	Melkaraipatti	Rural	1017	3427	1700	1727	243	120	123	850	427	423	0	0	0	2309	1336	973	1118	364	754
3	2	Muthunaickenpatti	Rural	705	2410	1200	1210	222	131	91	721	365	356	0	0	0	1433	800	633	977	400	577
4	3	Pushpathur	Rural	2436	8490	4302	4188	789	411	378	1306	679	627	0	0	0	5801	3221	2580	2689	1081	1608
5	4	Kovilampatti	Rural	324	1088	549	539	75	42	33	279	147	132	0	0	0	690	394	296	398	155	243
6	5	Korikadavu	Rural	733	2610	1296	1314	206	100	106	1950	956	994	0	0	0	1502	871	631	1108	425	683
7	6	Thalaisyuthu	Rural	1722	5923	3008	2915	442	235	207	648	336	312	0	0	0	3883	2224	1659	2040	784	1256
		<b>total (B)</b>		<b>6937</b>	<b>23948</b>	<b>12055</b>	<b>11893</b>	<b>1977</b>	<b>1039</b>	<b>938</b>	<b>5754</b>	<b>2910</b>	<b>2844</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15618</b>	<b>8846</b>	<b>6772</b>	<b>8330</b>	<b>3209</b>	<b>5121</b>
<b>5-10 km,Palani Sub-District, Dindigul District</b>																						
8	1	Kottathurai	Rural	1015	3342	1643	1699	268	140	128	691	346	345	0	0	0	2091	1205	886	1251	438	813
9	2	Velampatti	Rural	457	1436	720	716	95	45	50	334	159	175	0	0	0	841	496	345	595	224	371
10	3	Rajampatti	Rural	1056	3524	1800	1724	289	163	126	548	285	263	0	0	0	1887	1099	788	1637	701	936
11	4	Thoppampatti	Rural	1031	3443	1738	1705	296	163	133	538	276	262	2	2	0	2259	1272	987	1184	466	718
12	5	Thummalapatti	Rural	657	2194	1109	1085	168	83	85	526	258	268	0	0	0	1330	770	560	864	339	525
13	6	Pudur	Rural	122	470	235	235	47	23	24	262	129	133	0	0	0	281	160	121	189	75	114
14	7	Akkaraipatti	Rural	625	2195	1103	1092	157	79	78	316	161	155	0	0	0	1366	751	615	829	352	477
15	8	Ayyampalayam	Rural	596	1901	977	924	124	63	61	377	208	169	0	0	0	1206	728	478	695	249	446
16	9	Thathanaickenpatti (N)	Rural	293	1011	512	499	90	43	47	322	161	161	0	0	0	604	337	267	407	175	232
17	10	Chithraikulam	Rural	500	1749	846	903	124	69	55	308	152	156	0	0	0	1190	642	548	559	204	355
18	11	Sukkamaickenpatti	Rural	518	2251	1203	1048	139	71	68	475	224	251	5	4	1	1692	963	729	559	240	319
19	12	Pethanaickenpatti	Rural	581	2164	1117	1047	192	109	83	771	397	374	0	0	0	1411	807	604	753	310	443
20	13	Manoor	Rural	1630	5746	2869	2877	498	234	264	2882	1436	1446	0	0	0	3457	1974	1483	2289	895	1394
21	14	Vilvathampatti	Rural	436	1525	751	774	137	68	69	481	227	254	0	0	0	955	541	414	570	210	360
<b>Palani Sub-District, Dindigul District</b>																						
22	1	Keeranur (TP)	Urban	1925	7200	3507	3693	698	341	357	3211	1620	1591	0	0	0	4738	2558	2180	2462	949	1513
23	2	Chinnakalayampathur (CT)	Urban	1475	5162	2537	2625	327	171	156	713	355	358	0	0	0	3941	2065	1876	1221	472	749
<b>Madathukulam Sub-District, Tiruppur District</b>																						
24	1	Karatholuvu	Rural	1525	5075	2497	2578	414	212	202	698	335	363	0	0	0	3439	1873	1566	1636	624	1012
25	2	Jothampatti	Rural	1746	6071	3058	3013	508	257	251	805	409	396	1	1	0	4549	2497	2052	1522	561	961
26	3	Kadathur	Rural	888	3256	1614	1642	327	170	157	1157	588	569	0	0	0	2008	1131	877	1248	483	765
27	4	Sholamadevi	Rural	1177	4603	2279	2324	432	221	211	851	413	438	0	0	0	3337	1777	1560	1266	502	764
28	5	Vedappatti	Rural	719	2496	1258	1238	190	97	93	461	233	228	46	22	24	1770	993	777	726	265	461
<b>Madathukulam Sub-District, Tiruppur District</b>																						
29	1	Kaniyur (TP)	Urban	1802	6180	3008	3172	587	284	303	1802	882	920	0	0	0	4585	2426	2159	1595	582	1013
30	2	Madathukulam (TP)	Urban	5761	20620	10198	10422	1714	892	822	4290	2069	2221	21	12	9	15374	8277	7097	5246	1921	3325
31	3	Komaralingam (TP)	Urban	3854	13642	6791	6851	1266	663	603	3377	1651	1726	1081	555	526	8638	4766	3872	5004	2025	2979
32	4	Sankaramanallur (TP)	Urban	2995	10283	5145	5138	886	485	401	2502	1240	1262	1	1	0	6599	3730	2869	3684	1415	2269
<b>Dharapuram Sub-District, Tiruppur District</b>																						
33	1	Chinnakkampalayam (TP)	Urban	3445	11546	5772	5774	820	430	390	3131	1535	1596	0	0	0	6797	3880	2917	4749	1892	2857
		<b>total (C)</b>		<b>36829</b>	<b>129085</b>	<b>64287</b>	<b>64798</b>	<b>10793</b>	<b>5576</b>	<b>5217</b>	<b>31829</b>	<b>15749</b>	<b>16080</b>	<b>1157</b>	<b>597</b>	<b>560</b>	<b>86345</b>	<b>47718</b>	<b>38627</b>	<b>42740</b>	<b>16569</b>	<b>26171</b>
		<b>Grand Total (A+B+C)</b>		<b>44305</b>	<b>154894</b>	<b>77279</b>	<b>77615</b>	<b>12926</b>	<b>6698</b>	<b>6228</b>	<b>37901</b>	<b>18818</b>	<b>19083</b>	<b>1157</b>	<b>597</b>	<b>560</b>	<b>103162</b>	<b>57239</b>	<b>45923</b>	<b>51732</b>	<b>20040</b>	<b>31692</b>

\*Source: District Primary Census Abstract, Dindigul &amp; Tiruppur District of Tamilnadu State-2011

**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
<b>0-2 km,Palani Sub-District, Dindigul District</b>																	
1	1	Kolumakondan	Rural	614	570	216	211	192	229	113	95	93	35	15	22	308	332
		<b>total (A)</b>		<b>614</b>	<b>570</b>	<b>216</b>	<b>211</b>	<b>192</b>	<b>229</b>	<b>113</b>	<b>95</b>	<b>93</b>	<b>35</b>	<b>15</b>	<b>22</b>	<b>308</b>	<b>332</b>
<b>2-5 km,Palani Sub-District, Dindigul District</b>																	
2	1	Melkaraipatti	Rural	1131	839	405	266	333	407	67	75	326	91	13	80	556	808
3	2	Muthunaickenpatti	Rural	776	625	89	63	423	464	23	14	241	84	26	40	398	545
4	3	Pushpathur	Rural	2637	1418	245	169	505	546	44	29	1843	674	76	82	1589	2688
5	4	Kovilammappatti	Rural	355	328	129	108	171	203	0	1	55	16	11	7	183	204
6	5	Korikadavu	Rural	728	662	20	13	536	589	21	10	151	50	58	54	510	598
7	6	Thalaiyuthu	Rural	1867	1425	562	444	572	707	43	33	690	241	110	141	1031	1349
		<b>total (B)</b>		<b>7494</b>	<b>5297</b>	<b>1450</b>	<b>1063</b>	<b>2540</b>	<b>2916</b>	<b>198</b>	<b>162</b>	<b>3306</b>	<b>1156</b>	<b>294</b>	<b>404</b>	<b>4267</b>	<b>6192</b>
<b>5-10 km,Palani Sub-District, Dindigul District</b>																	
8	1	Kottathurai	Rural	1035	658	306	235	251	282	17	10	461	131	24	93	584	948
9	2	Velampatti	Rural	449	179	255	62	73	78	2	1	119	38	37	30	234	507
10	3	Rajampatti	Rural	937	765	339	234	333	377	39	25	226	129	325	337	538	622
11	4	Thoppampatti	Rural	1151	1082	464	418	460	563	32	28	195	73	21	11	566	612
12	5	Thummalapatti	Rural	691	416	368	167	183	212	5	1	135	36	47	55	371	614
13	6	Pudur	Rural	155	9	11	0	116	8	2	0	26	1	0	0	80	226
14	7	Akkaraipatti	Rural	647	505	327	267	129	137	0	1	191	100	153	226	303	361
15	8	Ayyampalayam	Rural	657	490	255	169	210	236	105	56	87	29	16	53	304	381
16	9	Thathanaickenpatti (N)	Rural	169	101	98	59	10	24	6	3	55	15	195	175	148	223
17	10	Chithraikulam	Rural	552	257	225	36	223	199	2	0	102	22	4	7	290	639
18	11	Sukkamanaickenpatti	Rural	525	365	61	52	133	140	10	8	321	165	12	11	666	672
19	12	Pethanaickenpatti	Rural	677	472	46	24	231	249	87	41	313	158	35	65	405	510
20	13	Manoor	Rural	1790	1272	103	44	1069	1061	10	8	608	159	45	41	1034	1564
21	14	Vilvathampatti	Rural	412	331	177	155	49	60	0	3	186	113	91	129	248	314
<b>Palani Sub-District, Dindigul District</b>																	
22	1	Keeranur (TP)	Urban	1771	765	71	14	572	465	14	14	1114	272	311	188	1425	2740
23	2	Chinnakalayamputhur (CT)	Urban	1393	677	130	52	387	312	11	11	865	302	237	182	907	1766
<b>Madathukulam Sub-District, Tiruppur District</b>																	
24	1	Karatholuvu	Rural	1565	958	218	83	592	663	34	25	721	187	58	91	874	1529
25	2	Jothampatti	Rural	1768	979	229	45	381	421	208	149	950	364	146	182	1144	1852
26	3	Kadathur	Rural	1006	712	39	12	648	565	7	9	312	126	24	36	584	894
27	4	Sholamadevi	Rural	1397	374	216	128	161	66	53	41	967	139	56	63	826	1887
28	5	Vedappatti	Rural	233	63	79	31	6	3	8	5	140	24	606	523	419	652
<b>Madathukulam Sub-District, Tiruppur District</b>																	
29	1	Kaniyur (TP)	Urban	1708	862	17	3	650	540	29	20	1012	299	68	74	1232	2236
30	2	Madathukulam (TP)	Urban	5711	2550	361	159	1056	965	175	83	4119	1343	541	466	3946	7406
31	3	Komaralingam (TP)	Urban	4136	2795	428	270	1941	1836	54	40	1713	649	268	260	2387	3796
32	4	Sankaramanallur (TP)	Urban	3381	2236	697	360	1476	1486	158	92	1050	298	31	46	1733	2856
<b>Dharapuram Sub-District, Tiruppur District</b>																	
33	1	Chinnakkampalayam (TP)	Urban	3793	3225	758	555	1900	2069	84	62	1051	539	216	269	1763	2280
		<b>total (C)</b>		<b>37709</b>	<b>23098</b>	<b>6278</b>	<b>3634</b>	<b>13240</b>	<b>13017</b>	<b>1152</b>	<b>736</b>	<b>17039</b>	<b>5711</b>	<b>3567</b>	<b>3613</b>	<b>23011</b>	<b>38087</b>
		<b>Grand Total (A+B+C)</b>		<b>45817</b>	<b>28965</b>	<b>7944</b>	<b>4908</b>	<b>15972</b>	<b>16162</b>	<b>1463</b>	<b>993</b>	<b>20438</b>	<b>6902</b>	<b>3876</b>	<b>4039</b>	<b>27586</b>	<b>44611</b>

\*Source: District Primary Census Abstract, Dindigul &amp; Tiruppur District of Tamilnadu State-2011

**EDUCATIONAL FACILITIES IN THE STUDY AREA**

**Annexure - 6**

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)
<b>0-2 km,Palani Sub-District, Dindigul District</b>																
1	1	Kolumakondan	1	2	2	0	0	0	0	0	0	0	0	0	0	0
		<b>total (A)</b>		<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2-5 km,Palani Sub-District, Dindigul District</b>																
2	1	Melkaraipatti	1	1	3	1	0	0	0	0	0	0	0	0	0	0
3	2	Muthunaickenpatti	1	2	3	0	0	0	0	0	0	0	0	0	1	0
4	3	Pushpathur	1	2	5	1	0	0	0	0	0	0	0	0	0	0
5	4	Kovilampatti	1	2	2	0	0	0	0	0	0	0	0	0	0	0
6	5	Korikadavu	1	2	1	0	0	0	0	0	0	0	0	0	0	0
7	6	Thalaiyuthu	1	8	8	1	1	0	0	0	0	0	0	0	0	0
		<b>total (B)</b>		<b>17</b>	<b>22</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>5-10 km,Palani Sub-District, Dindigul District</b>																
8	1	Kottathurai	1	4	4	0	0	0	0	0	0	0	0	0	1	0
9	2	Velampatti	1	1	3	0	0	0	0	0	0	0	0	0	0	0
10	3	Rajampatti	1	5	4	2	1	0	0	0	0	0	0	0	1	0
11	4	Thoppampatti	1	3	3	1	1	1	0	0	0	0	0	0	0	0
12	5	Thummalapatti	1	2	2	0	0	0	0	0	0	0	0	0	0	0
13	6	Pudur	2	0	0	0	0	0	0	0	0	0	0	0	0	0
14	7	Akkaraipatti	1	2	1	0	0	0	0	0	0	0	0	0	0	0
15	8	Ayyampalayam	1	2	1	1	0	0	0	0	0	0	0	0	0	0
16	9	Thathanaickenpatti (N)	1	1	1	0	0	0	0	0	0	0	0	0	0	0
17	10	Chithraikulam	1	2	2	0	0	0	0	0	0	0	0	0	0	0
18	11	Sukkamanaickenpatti	1	1	2	0	0	0	0	0	0	0	0	0	0	0
19	12	Pethanaickenpatti	1	1	1	1	0	0	0	0	0	0	0	0	0	0
20	13	Manoor	1	5	1	1	1	0	0	0	0	0	0	0	0	0
21	14	Vilvathampatti	1	2	2	2	0	0	0	0	0	0	0	0	0	0
<b>Madathukulam Sub-District, Tiruppur District</b>																
22	1	Karatholuvu	1	4	2	1	1	0	0	0	0	0	0	0	1	0
23	2	Jothampatti	1	3	4	2	0	0	0	0	0	0	0	0	1	0
24	3	Kadathur	1	2	2	1	0	0	0	0	0	0	0	0	1	0
25	4	Sholamadevi	1	1	1	1	1	0	0	0	0	0	0	0	1	0
26	5	Vedappatti	1	1	1	0	0	0	0	0	0	0	0	0	1	0
		<b>total (C)</b>		<b>42</b>	<b>37</b>	<b>13</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>
		<b>Grand Total (A+B+C)</b>		<b>61</b>	<b>61</b>	<b>16</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>

*\*Source: District Primary Census Abstract, Dindigul & Tiruppur District of Tamilnadu State-2011*

**MEDICAL FACILITIES WITHIN THE STUDY AREA**

Sl.No	No. of Villages	Name of village	Medical Facilities (A(1)/NA(2))	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Health Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	TB Clinic (Numbers)	Hospital Allopathic (Numbers)	Hospital Alternative Medicine (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Mobile Health Clinic (Numbers)	Family Welfare Centre (Numbers)
<b>0-2 km,Palani Sub-District, Dindigul District</b>														
1	1	Kolumakondan	2	0	0	0	0	0	0	0	0	0	0	0
		<b>total (A)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2-5 km,Palani Sub-District, Dindigul District</b>														
2	1	Melkaraipatti	1	0	0	1	0	0	0	0	0	1	0	0
3	2	Muthunaickenpatti	1	0	0	1	1	0	0	0	0	0	0	0
4	3	Pushpathur	1	0	0	1	0	0	0	0	0	0	0	0
5	4	Kovilammampatti	2	0	0	0	0	0	0	0	0	0	0	0
6	5	Korikadavu	1	0	0	1	0	0	0	0	0	0	0	0
7	6	Thalaiyuthu	1	0	0	1	1	0	0	0	0	1	0	0
		<b>total (B)</b>		<b>0</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>5-10 km,Palani Sub-District, Dindigul District</b>														
8	1	Kottathurai	1	0	0	1	0	0	0	0	0	0	0	0
9	2	Velampatti	2	0	0	0	0	0	0	0	0	1	0	0
10	3	Rajampatti	1	0	0	1	0	0	0	0	0	0	0	0
11	4	Thoppampatti	1	0	0	1	0	0	0	0	0	0	0	0
12	5	Thummalapatti	1	0	0	1	0	0	0	0	0	1	0	0
13	6	Pudur	2	0	0	0	0	0	0	0	0	0	0	0
14	7	Akkaraipatti	2	0	0	0	0	0	0	0	0	1	0	0
15	8	Ayyampalayam	2	0	0	1	0	0	0	0	0	0	0	0
16	9	Thathanaickenpatti (N)	2	0	0	0	0	0	0	0	0	0	0	0
17	10	Chithraikulam	2	0	0	0	0	0	0	0	0	0	0	0
18	11	Sukkamanaickenpatti	2	0	0	0	0	0	0	0	0	0	0	0
19	12	Pethanaickenpatti	2	0	0	0	0	0	0	0	0	0	0	0
20	13	Manoor	1	0	0	1	0	0	0	0	0	1	0	0
21	14	Vilvathampatti	2	0	0	0	0	0	0	0	0	0	0	0
<b>Madathukulam Sub-District, Tiruppur District</b>														
22	1	Karatholuvu	1	0	0	1	0	0	0	0	0	0	0	0
23	2	Jothampatti	1	0	0	3	0	0	0	0	0	0	0	0
24	3	Kadathur	1	0	0	1	1	0	0	0	0	0	0	0
25	4	Sholamadevi	1	0	0	1	0	0	0	0	0	0	0	0
26	5	Vedappatti	2	0	0	0	0	0	0	0	0	0	0	0
		<b>total (C)</b>		<b>0</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>
		<b>Grand Total (A+B+C)</b>		<b>0</b>	<b>0</b>	<b>17</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>

\*Source: District Primary Census Abstract, Dindigul & Tiruppur District of Tamilnadu State-2011

Note : A: Available, NA- Not Available



## INFRASTRUCTURAL FACILITIES IN THE STUDY AREA

**Annexure - 8**

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))
<b>0-2 km,Palani Sub-District, Dindigul District</b>																			
1	1	Kolumakondan	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
<b>2-5 km,Palani Sub-District, Dindigul District</b>																			
2	1	Melkaraipatti	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2
3	2	Muthunaickenpatti	1	1	2	1	2	1	2	2	1	2	1	1	1	2	2	2	2
4	3	Pushpathur	1	2	2	1	2	1	2	2	1	2	1	1	1	1	1	1	1
5	4	Kovilammappatti	1	2	2	2	2	2	2	2	1	2	1	1	2	2	2	2	2
6	5	Korikadavu	1	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2
7	6	Thalaiyuthu	1	1	1	1	1	2	2	2	1	2	1	1	1	1	1	1	1
<b>5-10 km,Palani Sub-District, Dindigul District</b>																			
8	1	Kottathurai	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	1	1
9	2	Velampatti	1	1	1	1	1	2	2	2	1	2	1	1	1	2	2	2	2
10	3	Rajampatti	1	2	1	1	2	1	1	2	2	2	1	1	1	2	2	2	2
11	4	Thoppampatti	1	1	2	1	1	2	2	2	1	2	1	1	2	2	2	1	1
12	5	Thummalapatti	1	2	1	1	2	2	2	2	1	2	1	1	1	2	2	1	2
13	6	Pudur	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2
14	7	Akkaraipatti	1	1	2	1	2	1	2	2	2	2	1	1	2	2	2	2	2
15	8	Ayyampalayam	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
16	9	Thathanaickenpatti (N)	1	2	2	2	2	2	2	2	1	2	1	1	1	2	2	2	2
17	10	Chithraikulam	1	1	2	1	2	2	2	2	2	2	1	1	1	2	2	1	1
18	11	Sukkamanaickenpatti	1	1	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
19	12	Pethanaickenpatti	1	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2
20	13	Manoor	1	1	2	1	2	2	2	2	1	2	1	1	1	2	1	1	1
21	14	Vilvathampatti	1	1	2	1	1	2	2	2	2	2	1	1	1	2	2	2	2
<b>Madathukulam Sub-District, Tiruppur District</b>																			
22	1	Karatholuvu	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1
23	2	Jothampatti	1	1	2	1	1	2	2	1	1	1	1	1	1	2	1	1	1
24	3	Kadathur	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
25	4	Sholamadevi	1	1	1	2	2	2	2	2	1	2	1	1	1	2	2	2	2
26	5	Vedappatti	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1

*\*Source: District Primary Census Abstract, Dindigul & Tiruppur District of Tamilnadu State-2011*

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

*Status: 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 & Gravel Quarry of Thiru. T. Kumaresh
Name of the Location	:	Near Mine Lease Area
Station Code	:	A1

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	06.12.22	71.3	32.9	7.1	10.5
2	07.12.22	63.6	29.4	6.4	9.1
3	17.12.22	75.7	34.9	7.5	11.3
4	18.12.22	68.3	31.6	6.8	9.9
5	20.12.22	53.7	24.8	5.5	7.4
6	21.12.22	60.3	28.1	6.1	8.5
7	31.12.22	74.6	34.5	7.4	11.1
8	26.12.22	65.8	30.2	6.6	9.5
9	02.01.23	51.4	23.6	5.5	7.4
10	03.01.23	59.2	27.5	6.2	8.3
11	12.01.23	76.2	35.2	7.6	11.5
12	13.01.23	72.7	33.6	7.2	10.7
13	16.01.23	66.9	31.1	6.7	9.7
14	17.01.23	62.5	28.9	6.3	8.9
15	26.01.23	70.4	32.5	7.1	10.3
16	27.01.23	64.9	30.1	6.5	9.3
17	30.01.23	55.9	25.7	5.7	7.7
18	31.01.23	58.1	26.8	5.9	8.1
19	10.02.23	57.3	26.5	5.8	7.9
20	11.02.23	69.1	31.9	6.9	10.2
21	13.02.23	76.2	34.3	8.4	12.1
22	14.02.23	73.4	33.9	7.3	10.9
23	24.02.23	54.8	25.3	5.6	7.5
24	25.02.23	61.4	28.5	6.2	8.7
	<b>MIN</b>	<b>51.4</b>	<b>23.6</b>	<b>5.5</b>	<b>7.4</b>
	<b>AVG</b>	<b>65.2</b>	<b>30.1</b>	<b>6.6</b>	<b>9.4</b>
	<b>MAX</b>	<b>76.2</b>	<b>35.2</b>	<b>8.4</b>	<b>12.1</b>

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

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## AMBIENT AIR QUALITY

Project	:	Rough Stone & Gravel Quarry of Thiru. T. Kumaresh
Name of the Location	:	Kolumakondan Village
Station Code	:	A2

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	06.12.22	62.2	29.2	6.8	10.2
2	07.12.22	59.6	27.8	6.4	9.7
3	17.12.22	48.6	21.9	4.9	7.2
4	18.12.22	51.3	23.1	5.4	7.7
5	20.12.22	63.9	30.2	7.1	9.9
6	21.12.22	56.6	25.5	6.1	9.1
7	31.12.22	52.6	23.7	5.6	8.2
8	26.12.22	57.4	25.8	6.2	9.3
9	02.01.23	60.6	28.5	6.6	9.9
10	03.01.23	54.2	24.4	5.8	8.5
11	12.01.23	48.6	21.9	4.9	7.1
12	13.01.23	61.4	28.9	6.7	9.8
13	16.01.23	50.2	22.6	5.3	7.5
14	17.01.23	49.5	22.1	5.3	7.1
15	26.01.23	63.3	29.8	6.9	9.9
16	27.01.23	69.2	31.1	7.2	10.2
17	30.01.23	49.4	22.2	5.2	7.3
18	31.01.23	55.2	24.8	5.9	8.7
19	10.02.23	65.2	30.8	7.2	10.2
20	11.02.23	59.8	28.1	6.5	9.9
21	13.02.23	49.9	22.5	5.1	7.3
22	14.02.23	51.8	23.3	5.5	7.9
23	24.02.23	53.4	24.1	5.7	8.3
24	25.02.23	58.2	26.2	6.3	9.5
	MIN	48.6	21.9	4.9	7.1
	AVG	56.3	25.8	6.0	8.8
	MAX	69.2	31.1	7.2	10.2

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## AMBIENT AIR QUALITY

Project	:	Rough Stone & Gravel Quarry of Thiru. T. Kumaresh
Name of the Location	:	Pothupatti Village
Station Code	:	A3

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	08.12.22	52.9	24.3	6.1	8.4
2	09.12.22	57.8	26.6	6.6	9.1
3	15.12.22	63.6	29.3	6.4	9.9
4	16.12.22	55.7	25.6	5.9	8.7
5	22.12.22	44.5	20.5	4.9	7.3
6	23.12.22	49.4	22.7	5.5	7.9
7	29.12.22	45.2	20.8	5.1	7.4
8	30.12.22	50.1	23.0	5.6	8.1
9	04.01.23	45.8	21.1	4.7	7.1
10	05.01.23	48.7	22.4	5.4	7.8
11	11.01.23	51.5	23.7	5.8	8.2
12	12.01.23	45.9	21.1	5.1	7.5
13	18.01.23	60.3	27.7	6.4	9.5
14	19.01.23	57.1	26.3	6.1	8.9
15	25.01.23	44.4	20.4	4.6	6.7
16	26.01.23	52.2	24.0	5.9	8.3
17	01.02.23	46.6	21.4	5.2	7.6
18	02.02.23	50.8	23.4	5.7	8.1
19	08.02.23	58.5	26.9	5.7	9.3
20	09.02.23	54.3	25.0	6.2	8.6
21	15.02.23	59.2	27.2	6.5	9.4
22	16.02.23	56.4	25.9	5.8	8.9
23	22.02.23	53.6	24.7	6.1	8.5
24	23.02.23	47.3	21.8	5.3	7.7
	<b>MIN</b>	<b>44.4</b>	<b>20.4</b>	<b>4.6</b>	<b>6.7</b>
	<b>AVG</b>	<b>52.2</b>	<b>24.0</b>	<b>5.7</b>	<b>8.3</b>
	<b>MAX</b>	<b>63.6</b>	<b>29.3</b>	<b>6.6</b>	<b>9.9</b>

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## AMBIENT AIR QUALITY

Project	:	Rough Stone & Gravel Quarry of Thiru. T. Kumaresh
Name of the Location	:	Ettappanayagapur Village
Station Code	:	A4

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	08.12.22	51.9	23.9	6.1	7.7
2	09.12.22	47.8	22.0	5.5	7.1
3	15.12.22	40.7	18.7	4.6	6.2
4	16.12.22	46.3	21.3	5.4	7.0
5	22.12.22	54.3	26.2	6.5	8.1
6	23.12.22	49.1	22.6	5.7	7.3
7	29.12.22	42.1	19.4	4.8	6.4
8	30.12.22	53.3	25.1	6.3	7.9
9	04.01.23	54.9	26.6	6.6	8.2
10	05.01.23	49.8	22.9	5.8	7.4
11	11.01.23	38.6	17.8	4.4	6.0
12	12.01.23	44.2	20.3	5.1	6.7
13	18.01.23	41.4	19.1	4.7	6.3
14	19.01.23	50.5	23.2	5.9	7.5
15	25.01.23	39.3	18.1	4.5	6.1
16	26.01.23	45.6	21.2	5.3	6.9
17	01.02.23	55.2	27.3	6.7	8.3
18	02.02.23	52.6	24.2	6.2	7.8
19	08.02.23	48.4	22.3	5.6	7.2
20	09.02.23	43.5	20.1	5.0	6.6
21	15.02.23	44.9	20.7	5.2	6.8
22	16.02.23	51.2	23.6	6.0	7.6
23	22.02.23	42.8	19.7	4.9	6.5
24	23.02.23	53.9	25.9	6.4	8.0
	<b>MIN</b>	<b>38.6</b>	<b>17.8</b>	<b>4.4</b>	<b>6</b>
	<b>AVG</b>	<b>47.6</b>	<b>22.2</b>	<b>5.5</b>	<b>7.2</b>
	<b>MAX</b>	<b>55.2</b>	<b>27.3</b>	<b>6.7</b>	<b>8.3</b>

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### AMBIENT AIR QUALITY

Project	:	Rough Stone & Gravel Quarry of Thiru. T. Kumaresh
Name of the Location	:	Periya Mottanuthu Village
Station Code	:	A5

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	10.12.22	50.8	23.4	5.5	7.1
2	11.12.22	57.4	26.4	6.3	7.9
3	13.12.22	59.8	27.5	6.5	8.1
4	14.12.22	54.4	25.0	6.1	7.7
5	24.12.22	62.6	28.8	6.7	8.3
6	25.12.22	56.2	25.9	6.2	7.8
7	27.12.22	47.8	22.0	5.0	6.6
8	28.12.22	49.6	22.8	5.3	6.9
9	06.01.23	48.9	22.5	5.2	6.8
10	07.01.23	52.6	24.2	5.8	7.4
11	09.01.23	46.6	21.4	4.8	6.4
12	10.01.23	50.2	23.1	5.4	7.0
13	20.01.23	47.3	21.8	4.9	6.5
14	21.01.23	52.1	24.0	5.7	7.3
15	23.01.23	60.4	27.8	6.6	8.2
16	24.01.23	55.6	25.6	6.1	7.8
17	03.02.23	48.4	22.3	5.1	6.7
18	04.02.23	53.2	24.5	5.9	7.5
19	06.02.23	59.2	27.2	6.4	8.0
20	07.02.23	53.8	24.7	5.9	7.6
21	17.02.23	64.2	29.5	6.8	8.4
22	18.02.23	56.8	26.1	6.2	7.9
23	20.02.23	51.4	23.6	5.6	7.2
24	21.02.23	58.6	27.0	6.3	8.0
	MIN	46.6	21.4	4.8	6.4
	AVG	54.1	24.9	5.8	7.5
	MAX	64.2	29.5	6.8	8.4

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### WATER QUALITY DATA

<b>Project Name</b>	:	<b>Rough Stone &amp; Gravel Quarry of Thiru. T. Kumaresh</b>	
<b>Location Name</b>	:	<b>Location Code</b>	<b>Location Name</b>
		W1	Near Mine Lease Area
		W2	Kolumakondan Village
		W3	Pothupatti Village
		W4	Ettappanayagapurur Village
		W5	Periya Mottanuthu Village

S. No.	Parameter	Unit	W1	W 2	W 3	W 4	W 5	*Permissible Limits
1	pH	-	6.98	7.22	7.45	7.62	7.84	6.5-8.5
2	Electrical Conductivity	µmhos/cm	752.5	1456	1066.7	651.1	1009	-
3	Odor	-	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE
4	Turbidity	NTU	<1	<1	<1	<1	<1	5.0
5	Total Hardness as CaCO <sub>3</sub>	mg/L	271	523	374	182	256	600
6	Calcium Hardness CaCO <sub>3</sub>	mg/L	165	282	258	101	189	-
7	Magnesium Hardness CaCO <sub>3</sub>	mg/L	106	241	116	81	67	-
8	Calcium Ca	mg/L	66	113	103	40.4	75.6	200
9	Magnesium Mg	mg/L	25.4	57.8	27.9	19.4	16.1	100
10	Alkalinity CaCO <sub>3</sub>	mg/L	185	242	231	155	236	600

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S. No.	Parameter	Unit	W1	W 2	W 3	W 4	W 5	*Permissible Limits
11	Chloride Cl <sup>-</sup>	mg/L	93.4	255	214	141	192	1000
12	Sulphate SO <sub>4</sub> <sup>2-</sup>	mg/L	69.2	158	89.6	53.2	115	400
13	Iron Fe	mg/L	BDL (D.L - 0.01)	0.03	0.05	0.04	0.06	0.3
14	Nitrate NO <sub>3</sub>	mg/L	2.52	3.42	2.58	2.98	3.24	45
15	Fluoride F	mg/L	0.42	0.54	0.46	0.39	0.52	1.5
16	Total Dissolved Solids	mg/L	455	946	645	392	610	2000
17	Free Residual Chlorine Cl <sup>-</sup>	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)	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)	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.

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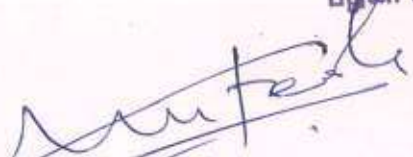
**LAND USE PATTERN OF THE STUDY AREA WITHIN 10 KM RADIUS AROUND THE PROPOSED PROJECT AREA**

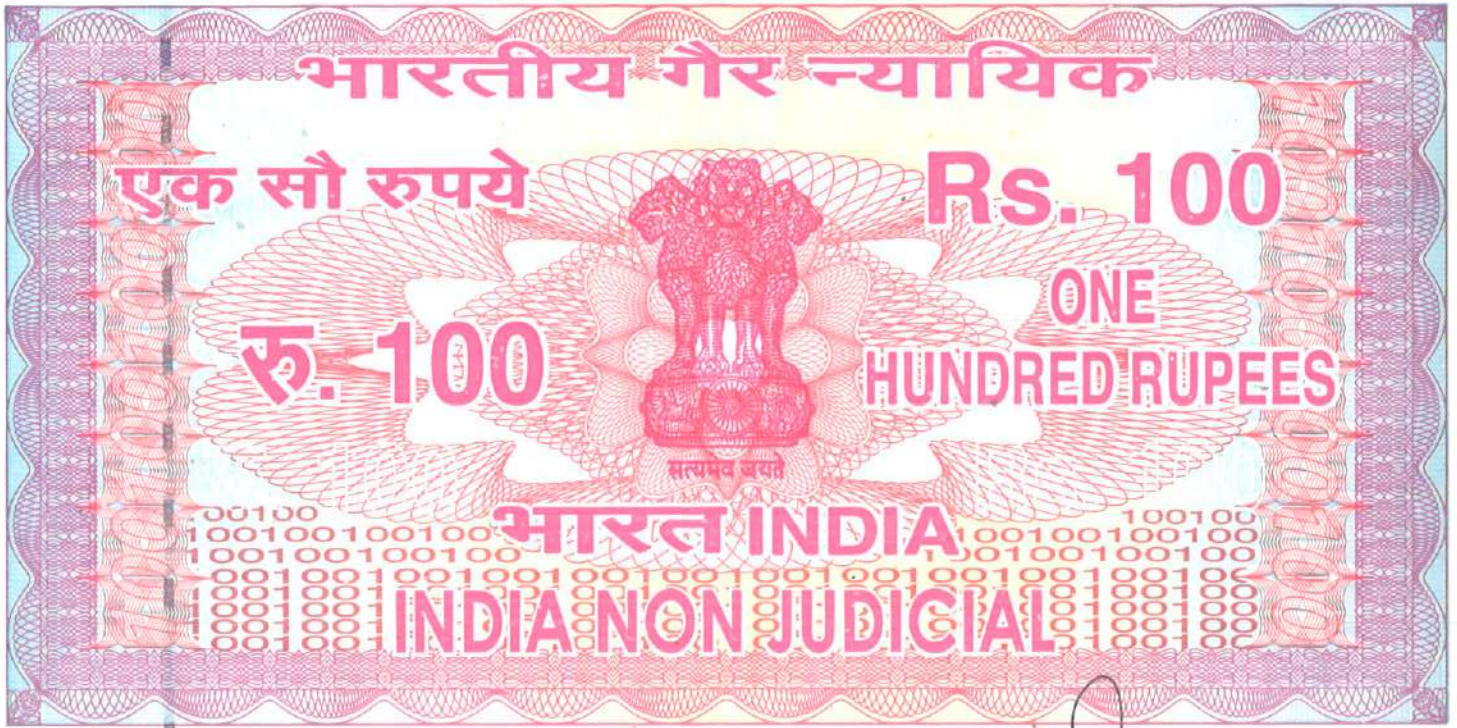
Sl.No	No. of Villages	Name of village	Total Geographical Area (in Hectares)	Forest Area (in Hectares)	Area under Non-Agricultural Uses (in Hectares)	Barren & Uncultivable Land Area (in Hectares)	Permanent Pastures and Other Grazing Land Area (in Hectares)	Land Under Miscellaneous Tree Crops etc. Area (in Hectares)	Culturable Waste Land Area (in Hectares)	Fallows Land other than Current Fallows Area (in Hectares)	Current Fallows Area (in Hectares)	Total Unirrigated Land Area (in Hectares)	Area Irrigated by Source (in Hectares)
<b>0-2km,Palani Sub-District, Dindigul District</b>													
1	1	Kolumakondan	1628.77	0	140.64	25.46	0	0	80.31	521.74	44.29	216.33	600
		<b>total (A)</b>	<b>1628.77</b>	<b>0</b>	<b>140.64</b>	<b>25.46</b>	<b>0</b>	<b>0</b>	<b>80.31</b>	<b>521.74</b>	<b>44.29</b>	<b>216.33</b>	<b>600</b>
<b>2-5km,Palani Sub-District, Dindigul District</b>													
2	1	Melkaraipatti	2171.92	0	0	0	0	0	1100.02	0	262.81	0	809.09
3	2	Muthunaickenpatti	1673.03	0	92.49	1.79	0	0	1.68	0	1030	299.07	248
4	3	Pushpathur	1627.27	0	200.66	1.24	68	22	0	200.79	195.1	415.14	524.34
5	4	Kovilammampatti	511.83	0	76.07	43.78	0	0	0	54.14	0	12.84	325
6	5	Korikadavu	557.08	0	68.87	0	0	0	180.5	0	109.26	0	198.45
7	6	Thalaiyuthu	2996.7	0	216.69	0	0	0	0	0	1321.06	0	1458.95
		<b>total (B)</b>	<b>9537.83</b>	<b>0</b>	<b>654.78</b>	<b>46.81</b>	<b>68</b>	<b>22</b>	<b>1282.2</b>	<b>254.93</b>	<b>2918.23</b>	<b>727.05</b>	<b>3563.83</b>
<b>5-10km,Palani Sub-District, Dindigul District</b>													
8	1	Kottathurai	1844.02	0	96.33	0	0	0	0	0	940.21	319.79	487.69
9	2	Velampatti	1190.89	0	70.98	0	0	0	0	0	204.58	466.33	449
10	3	Rajampatti	1197.95	0	100.81	3.44	0	0	3.82	0	519.27	179.78	390.83
11	4	Thoppampatti	2230.83	0	150.3	0.12	0	0	8.61	0	616.03	0	1455.77
12	5	Thummalapatti	938.82	0	78.17	0	0	0	11.88	42.84	217	0	588.93
13	6	Pudur	226.68	0	11.72	0	0	0	0	0	41.77	4.33	168.86
14	7	Akkaraipatti	1063.42	0	75.87	20	66	33	0.1	96.06	40	128.57	603.82
15	8	Ayyampalayam	627.91	0	6.8	0	0	0	207.14	0	34.82	195.59	183.56
16	9	Thathanaickenpatti (N)	950.2	0	262.5	365.5	0	0	0	0	194.8	124.5	2.9
17	10	Chithraikulam	940.16	0	94.67	6.28	19.85	32.49	0.25	74.9	57.44	130.92	523.36
18	11	Sukkamanaickenpatti	635.33	0	90.42	4.65	33.88	12.33	0	37.17	10.05	136.55	310.28
19	12	Pethanaickenpatti	458.02	0	66.99	0.2	39.15	2.15	0.85	26.59	31.04	168.71	122.34
20	13	Manoor	1353.48	0	144.9	5.36	6	18	0	117.32	57	249.48	755.42
21	14	Vilvathampatti	456.7	0	26.03	0.5	25	10	1.57	25.71	21	141.53	205.36
<b>Madathukulam Sub-District, Tiruppur District</b>													
22	1	Karatholuvu	1234.37	0	225.17	30.57	0	1	10.24	0	84.84	0	882.55
23	2	Jothampatti	845.88	0	129.52	0	0	0	0.14	0	123.73	18.41	574.08
24	3	Kadathur	616.75	0	127.92	0	0	0	1.2	0	39.03	0.52	448.08
25	4	Sholamadevi	315.69	0	65.35	0.18	0	0	1.16	0	31.44	0.97	216.59
26	5	Vedappatti	553.34	0	105.21	0	0	2	6.4	0	74.05	6.07	359.61
		<b>total (C)</b>	<b>17680.44</b>	<b>0</b>	<b>1929.66</b>	<b>436.8</b>	<b>189.88</b>	<b>110.97</b>	<b>253.36</b>	<b>420.59</b>	<b>3338.1</b>	<b>2272.05</b>	<b>8729.03</b>
		<b>Grand Total (A+B+C)</b>	<b>28847.04</b>	<b>0</b>	<b>2725.08</b>	<b>509.07</b>	<b>257.88</b>	<b>132.97</b>	<b>1615.87</b>	<b>1197.26</b>	<b>6300.62</b>	<b>3215.43</b>	<b>12892.86</b>

\*Source: District Primary Census Abstract, Dindigul & Tiruppur District of Tamilnadu State-2011

இண்டிக்ஸ் மாடலும், பழனி வட்டம், கொடுமங்கோண்டான் கிராமம், மட்டா எண்:- 643, டிஎன் எண்:- 388/1A2-ல் உள்ள கொத்தும் தொகுதி - 6.29.00 டிஎன்எம் இலக்கு இரண்டாம் ஆண்டில் எண்:- 880/2021-ம் ஆண்டு தொகுதி - 4.26.70 டிஎன்எம் இலக்கு தொகுதி பற்றி மட்டா, ஆண்டி ரெண்டி, சுகுமார், ஜாதி ஆகியவர்கள் தொகுதி மன்றங்களாக. தொகுதி இலக்கு தொகுதி - 2.33.10 (ஏக்கர்-5-76) பற்றி மன்ற இயக்கு அமைச்சு T. சுகுமார் அவர்களால் சீரணிப்பு செய்யப்பட்டுள்ளது. தொகுதி இயக்கு அமைச்சுமற்றும் இலக்கு தொகுதி சீரணிப்பு 300 மீட்டர் சீரணிப்பு இயக்குமன்ற காவலர்கள், மன்றங்களை மன்றம், மன்ற இயக்குமன்றம், உயர் அமைச்சு மன்ற காவலர்கள், இயக்கு மன்றங்களை, மன்றங்களை மன்றம் வரை விரிவாக்கி கரணாலயங்கள் தொகுதி மன்ற எண்மற்றும் சீரணிப்பு செய்யப்பட்டுள்ளது.

  
 கிராம நிர்வாக அலுவலர்  
 7-கொழும்புக்கொண்டான் கிராமம்  
 பழனி வட்டம்.





தமிழ்நாடு தமில்நாடு TAMILNADU

21 APR 2023

CW 696113

T. Kumaresh  
Coimbatore - 641 105

K. SANKAR  
STAMP VENDOR  
LICENCE No: 3481/94,  
No. 2, MADLEY ROAD,  
INAGAR, CHENNAI-18

**AFFIDAVIT TO SEIAA, TAMIL NADU**

I, Thiru.T.Kumaresh, S/o.(Late) Thangamuthu, Madukkarai (Via), Coimbatore District. Pin Code- 641105.do hereby solemnly declare and sincerely affirm that, we have applied for getting environment clearance to SEIAA, Tamil Nadu for Rough Stone and Gravel Quarry at Survey No.388/1A2(P) over an area of 2.33.10Ha in Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu. I hereby solemnly declare that:

1. I am the authorized signatory for this project.
2. The blasting operation in the proposed quarries will be carried by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine formeman, II/ Class mines manager appointed by the proponent.
3. I Will abide the EMP for the entire life of Mine

Notary Sign & Seal



Quarry owner sign & Seal

*(Signature)*  
27/4/2023  
K.KAMARAJ, M.A., B.L.,  
ADVOCATE & NOTARY  
Adithya Builders  
Res & Office : No: 6, Devanathan Colony,  
West Mambalam, Chennai - 600 033.  
Cell: 93800 46411

*(Signature)*



தமிழக அரசு

வருவாய்த் துறை

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



மாவட்டம் : திண்டுக்கல்

வட்டம் : பழனி

வருவாய் கிராமம் : கொழுமகொண்டான்

பட்டா எண் : 1369

உரிமையாளர்கள் பெயர்

1. - .. M/S AADITH BLUE METALS

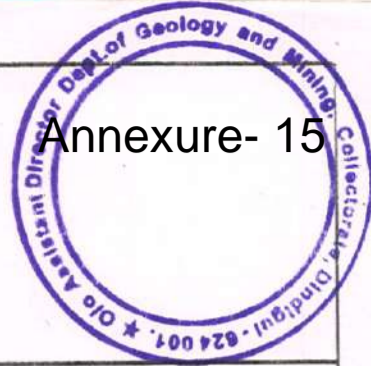
புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
388	1A2	4 - 26.70	5.29	--	--	--	--	2022/0105/13/260116- -2022/13/21/000119SD -- 09-04-2022
		4 - 26.70	5.29					

குறிப்பு 2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 13/21/064/01369/140409 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 12-05-2022 அன்று 12:26:32 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

பத்திய மாநில அரசு  
அங்கீகாரம் பெற்ற  
பொது இ-சேவை மையம்  
நாழைபுத்தூர்.



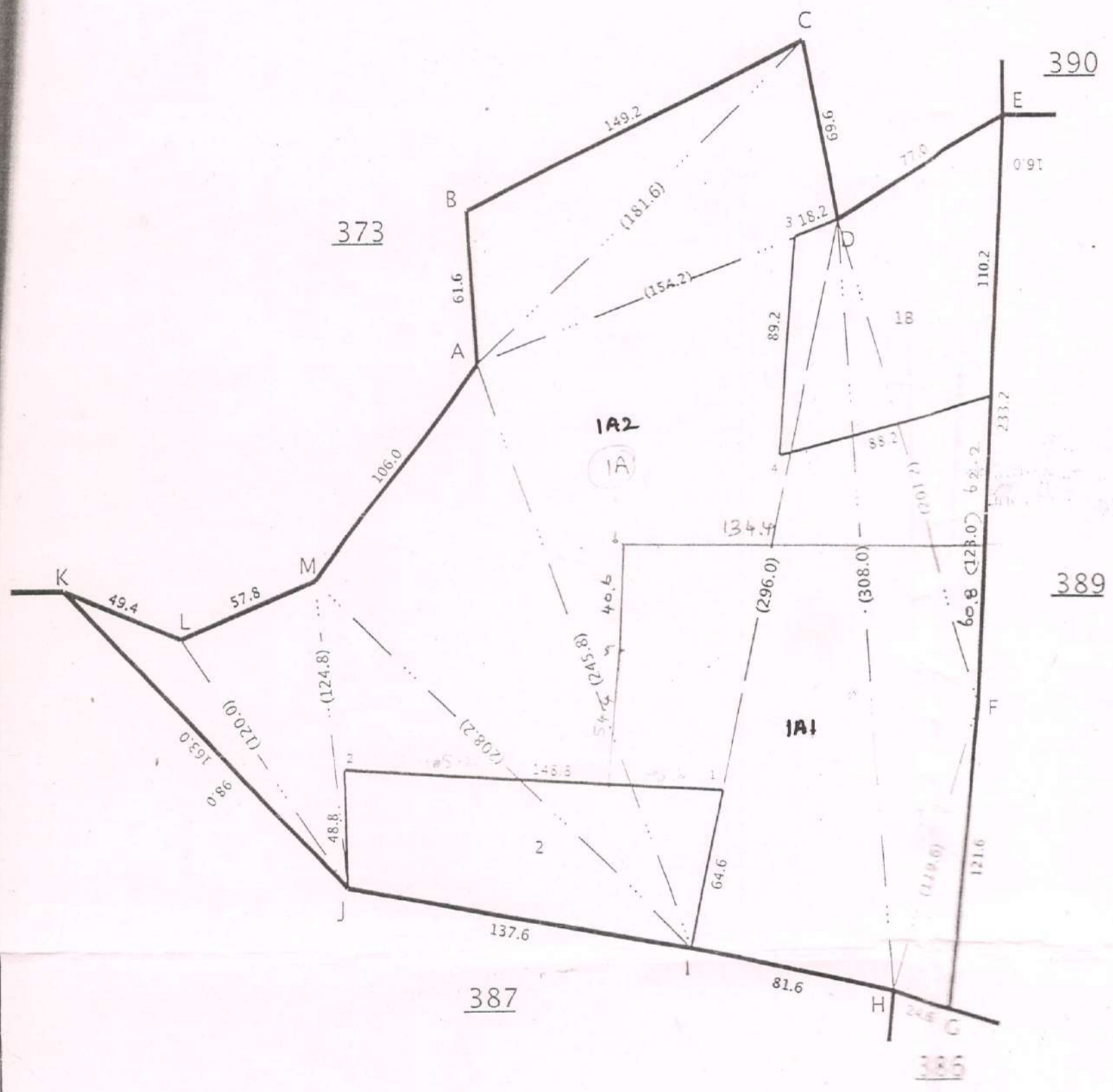
Annexure- 15

வட்டம் : திண்டுக்கல்  
பழனி : பழனி [21]  
கிராமம் : கொழும்கொண்டான் [64]

புல எண் : 388  
பரப்பளவு : எக்டர் 07 ஏர் 91.00  
அளவு : 1 : 2000

4984  
2.02.30  
4.26.70  
6.29.00

வரைவு சரிபார்க்கப்பட்டது  
பரப்பு கணிக்கப்பட்டது  
18-2-22  
[Signature]



சுற்றுலா திண்டுக்கல் எண். 490....  
18-2-22

அங்கீகரிக்கப்பட்டது

வட்டம் & அலுவலகம்  
பழனி.  
18-2-22

[Signature]  
18-2-22

12 மீட்டர் 33 மீட்டர்

[Signature]  
21-06-22  
கிராம நிர்வாக துணுவணி  
கொழும்கொண்டான் கிராமம்  
பழனி வட்டம்

New Subdivisions IA1, IA2  
Plotted as per TG-8A2313/1431  
18-2-22

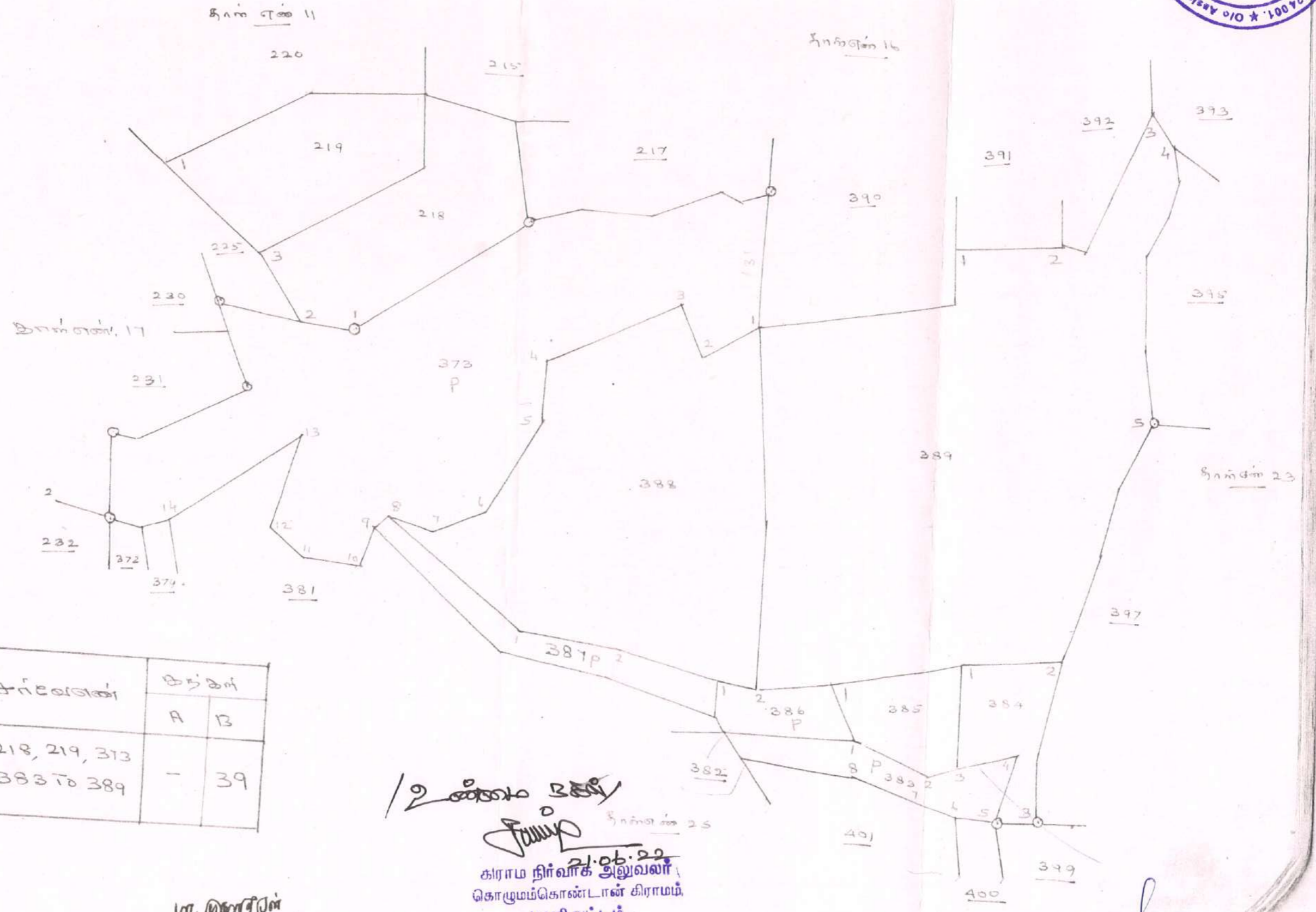
[Signature]

மாணவரம்: இரண்டுகதி  
 பகுதி: பகுதி.

தளம்: 22.



பெயர்: ...  
 இடம்: ...



தளம்	பகுதி	
	A	B
218, 219, 313		
383 to 389	-	39

12 ஆண்டுகள்  
 ஜூன் 21.06.22

கிராம நிர்வாக அலுவலர்,  
 கொழும்புகொண்டான் கிராமம்,  
 பழனி வட்டம்

மா. இராஜன்  
 20.5.04

*(Handwritten signature)*

1431 - ஆம் பசலியில்

கிராமக் கணக்கு

மாவட்டம்

பயிர்

வட்டம்

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					சாகுபடி யாளரின் பெயர்.	முதல் போகம்.						
(1) நில அளவை எண்.	(2) உட்பிரிவு எண்.	(3) பரப்பு.	(4) தீர்வை.	(5) ஒரு போகம் அல்லது இரு போகம்.		(6) கைப்பற்று தாரருடைய பெயரும் என்னும் அல்லது அனுபோக தாரருடைய பெயர்.	(7) நிலத்தின் எந்த பகுதி யாவது சாகுபடியாளரால் பயிரிடப்பட்டுள்ளதா.	(8) எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	(9) பயிரின் பெயர்.	(10) பயிரான / அறுவடையான பரப்பு.	(11) உண்மையான பாய்ச்சல் ஆதாரம்.	(12) விளைச்சல் அளவு விழுக்காடு.
388	142	4.2670	5.29	1369	ஆகதிப் புலம்							

21.06.22  
கிராம நிர்வாக அலுவலர்  
சொழமம்/கொண்டார் கிராமம்,  
பழனி வட்டம்

இரண்டாம் போகம்.																	
(13) எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	(14) பயிரின் பெயர்.	(15) பயிரான / அறுவடையான பரப்பு.	(16) உண்மையான பாய்ச்சல் ஆதாரம்.	(17) விளைச்சல் அளவு விழுக்காடு.	(18) கிராம அலுவலரின் குறிப்புரை :- (1) புலன்களின் பகுதிகளில் மட்டும் பயிரிடப்பட்ட இனங்களில் லிங்குகள் அளவில். (2) கைப்பற்றில் இல்லாத நிலங்களின் சாகுபடியின் பரப்பு தன்மையும். (3) முந்தைய மாதத்தில் பாய்ச்சல் உதவியின்றி பயிரிடப்பட்டவை என்று பதிவாகியுள்ள நிலங்களுக்கு பிந்தைய மாதங்களில் நீர் பாய்ச்சப்பட்ட விவரங்கள்.	(18அ) கீழ்க்கண்டவகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில். (அ) வனம், (ஆ) பயனற்ற பயிர் இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப்படும் நிலம், (ஈ) பயிரிடத்தக்க தரிசு நிலையான புல் தரைகளும், மற்றும் இதர மேய்ச்சல் நிலங்களும், (உ) விதைக்கப்பட்ட நிகர பரப்பில் சேர்க்கப்படாத மரவகைப் பயிர்களும் தோப்புகளும், (ஏ) நடப்புத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்.											(19) பயிர் பார்வையிடும் குறிப்புகள்



GOVERNMENT OF TAMILNADU  
REGISTRATION DEPARTMENT

தமிழ்நாடு அரசு  
பதிவுத்துறை



Certificate of Encumbrance on Property  
சொத்து தொடர்பான வில்லங்கச் சான்று

S.R.O / சாபுஅ: கீரனூர்	Date / நாள்: 06-Jul-2022
Village / கிராமம்: கொழும்பு கொண்டான்	Survey Details / சர்வே விவரம்: 388/1A2

Search Period / தேடுதல் காலம்: 01-Jan-2022 - 05-Jul-2022

Sr. No./ வ. எண்	Document No. & Year/ ஆவண எண் மற்றும் ஆண்டு	Date of Execution & Date of Presentation & Date of Registration/ எழுதிக் கொடுத்த நாள் & தாக்கல் நாள் & பதிவு நாள்	Nature/ தன்மை	Name of Executant(s)/ எழுதிக் கொடுத்தவர்(கள்)	Name of Claimant(s)/ வாங்கியவர்(கள்)	Vol.No & Page. No/ தொகுதி எண் மற்றும் பக்க எண்
1	1686/2022	05-Jul-2022 05-Jul-2022 05-Jul-2022	குத்தகை ஆவணம்	1. ஆதித புருமெட்டல்(முத.) ஹாஜ்(முக.) சசிக்குமார்(முக.) அந்தோணி ர.:பெல்(முக.)	1. குமரேஷ்	
Consideration Value/கைமாற்றுத் தொகை:			Market Value/சந்தை மதிப்பு:	PR Number/முந்தைய ஆவண எண்:		
-			Rs. 1,05,000/-	880/2021		
<b>அட்டவணை 1 விவரங்கள்:</b>						
Property Type/சொத்தின் வகைப்பாடு: விவசாய நிலம்						
Village & Street/கிராமம் மற்றும் தெரு: கொழும்பு கொண்டான்						
Boundary Details:						
கிழக்கு - சர்வே 373 நம்பர் பூமி, சர்வே 388/1பி நம்பர் பூமி மற்றும் சர்வே 388/1ஏ நம்பரில் அரசுக்கு குவாரிக்காக குத்தகைக்கு எழுதிக் கொடுக்கப்பட்டுள்ள பூமி, மேற்கு - சர்வே 387 மற்றும் சர்வே 373 நம்பர்களில்தென்வடல் புறம்புகல் பாதை, வடக்கு - சர்வே 373 நம்பர் புறம்புகல் பூமி மற்றும் சர்வே 388/1பி நம்பர் பூமி, தெற்கு - சர்வே 387 நம்பர்						
Survey No-Extent/புல எண்-விஸ்தீர்ணம்: 388/1A2 - 2 ஹெக்டேர், 33 ஏர்ஸ், 5.0 சதுர மீட்டர்						
Schedule Remarks/சொத்து விவரம் தொடர்பான குறிப்புரை: பழனி பதிவு மாவட்டம் கீரனூர் சார்பதிவுகம், பழனி வட்டம், கொழும்புக்கொண்டான் கிராமம் புன்செய் புலத்தில் அயன் ரீ சர்வே 388/1ஏ நம்பர் பு.ஹெ. 6.29.0 க்கு பு.ஏ. 15.54 இதில் வடபுறம் மேலபுறமாக பு.ஹெ. 4.26.70 க்கு பு.ஏ. 10.54 உள்ள பூமிக்கு நான்கு மால் விபரம் வடக்கு - சர்வே 373 நம்பரில் புறம்போக்கு பூமி மற்றும் சர்வே 388/1பி நம்பர் பூமி கிழக்கு - சர்வே 373 நம்பரில் புறம்போக்கு பூமி, சர்வே 388/1பி நம்பர் பூமி மற்றும்						





தமிழ்நாடு தமிழ்நாடு TAMILNADU ரூ.1000-

BA 162569

தமிழ்நாடு எண்:-1895

நாள் 05-07-2022 T. குமரேஷ்  
கேள்யம் பதித்தார்

R. சேனாபதி

சுப்பிரதம விநாயகர்  
L. No. 16 / 2000  
கேள்யம், கரூர்-624 617

குத்தகை ஆவணம்.

2022 ம் வருடம் ஜூலை மாதம் 05 ம் தேதி

கோயமுத்தூர் மாவட்டம் மதுக்கரை வட்டம் 641 105, பிச்சனூர் கிராமம்,  
மதுக்கரை வழி, கதவு எண் 2/34 என்ற முகவரியில் வசிக்கும்  
தங்கமுத்துக்கவுண்டர் அவர்கள் குமாரர் திரு. T. குமரேஷ் (ஆதார் எண்  
5629 9972 1835) (Cell No. 9842208272) -1 (குத்தகை பெறுபவர்)

குத்தகைக்கு விடுபவர்

குத்தகைக்கு பெறுபவர்

For AADITH BLUE METALS

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புத்தகம் 2022ம் வருடத்தில் 1686ம்  
ஆவணம் 13 நாட்களைக் கொண்டது  
வலு நாள்  
பதிவு ஆவணம்



திண்டுக்கல் மாவட்டம் பழனி வட்டம் கொழும்புகொண்டான் கிராமம் சர்வே 381/2A1 நம்பர் புலத்தில் பதிவு அலுவலகம் கொண்டு இயங்கிவரும் M/S AADITH BLUE METALS (PAN AAPFA5878F) என்ற நிறுவனத்திற்காக ஷெ நிறுவனத்தில் சமவிகித பங்குதாரர்களான

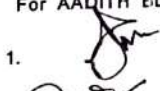


கேரள மாநிலம், திருச்சூர் 680301 , புதுக்காடு அஞ்சல் CG தியேட்டர், புலிக்கண் வீடு என்ற முகவரியில் வசிக்கும் ர.:பேல் (RAPHEL) அவர்கள் குமாரர் திரு. அந்தோணி ர.:பேல் (ANTONY RAPHEL) (ஆதார் எண் 319246766393) (PAN ACIPA9300K) -1

கேரள மாநிலம், திருச்சூர், 680563, அம்மாடம். பாராளம், வெட்டியாட்டில் வீடு, என்ற முகவரியில் வசிக்கும் வெட்டியாட்டில் உன்னிரி ராமகிருஷ்ணன் (VETTIYATTIL UNNIRI RAMAKRISHNAN) அவர்கள் குமாரர் திரு. சசிக்குமார் (SASIKUMAR) (ஆதார் எண் 271938404949) (PAN AKLPS8223L) -2

கேரள மாநிலம், திருச்சூர், 680310, தொட்டிப்பால் & அஞ்சல், தொட்டிப்பால் பள்ளம், வெள்ளாம்பரம்பில் வீடு, என்ற முகவரியில் வசிக்கும் V.K. பாஸ்கரன் (V.K. BHASKARAN) அவர்கள் குமாரர் திரு. V.B. ஷாஜு (V.B. SHAJU) (ஆதார் எண் 705055045492) (PAN BHZPS0405C) -3 ஆகிய மூன்று பேர்களும் ஷெ M/S AADITH BLUE METALS என்ற நிறுவனத்தின் பங்குதாரர்கள் என்ற முறையில் -2 (குத்தகைக்கு விடுபவர்கள்) ஆகிய நாம் இரண்டு பார்ட்டிகளும் சேர்ந்து எழுதி வைத்துக்கொண்ட குத்தகை ஆவணம் என்னவென்றால்,

குத்தகைக்கு விடுபவர்

For AADITH BLUE METALS

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குத்தகைக்கு பெறுபவர்



1. குத்தகம் 2022-ம் வருடத்திய 1686ம் ஆவணம் 12 தாள்களைக் கொண்டது 2. வது தாள் பதிவு அலுவலர்
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இதன் கீழ்க்காணும் சொத்து விபரத்தில் கண்ட சொத்துக்களானது M/S AADITH BLUE METALS என்ற நிறுவனத்தின் சார்பாக திரு. ஆண்டனி ரபீல், திரு.V.R. சசிக்குமார் மற்றும் திரு. V.B. ஷாஜா ஆகியோர்கள் பெயரில் பங்குதாரர்கள் என்ற முறையில் கூட்டாக சேர்ந்து சென்ற 14.06.2021ம் தேதியில் கீரனூர் சார்பதிவகத்தில் 880/2021 ம் நம்பராக பதிவு செய்யப்பட்டுள்ள கிரைய ஆவணத்தின்படி கிரையம் பெற்று அதன் படி M/S AADITH BLUE METALS என்ற நிறுவனத்திற்கு திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமங்கொண்டான் கிராமம் சர்வே 388/1ஏ நம்பர் பு.ஏ. 10.54 உள்ள பரப்பானது பாத்தியப்பட்டது.

மேற்படி பூமியில் 1 லக்க மிட்ட திரு.T. குமரேஷ் என்பவருக்கு கீழ் கண்ட நிபந்தனைகளுக்கு உட்பட்டு குத்தகைக்கு விடுவதற்கு 2,3,4 லக்க நபர்கள் ஒப்புக்கொண்டு உள்ளார்கள்




குத்தகை தொகை - ரூ. 15,000/- (வருடம் ஒன்றுக்கு)

குத்தகை காலம் - 7 (ஏழு) ஆண்டுகள்

மொத்த குத்தகை தொகை -ரூ.1,05,000/-

குத்தகைக்கு விடுபவர்

For AADITH BLUE METALS

1. 
2. 
3. 

குத்தகைக்கு பெறுபவர்



புத்தகம் 2022ம் வருடத்திய 1686ம்  
ஆவணம் 13 நாள் களைக் கொண்டது  
3 வது நாள்  
பதிவு அலுவலர்



ஷரத்துக்கள்

1. கீழே சொத்து விபரத்தில் கண்ட சொத்துக்களை 2 வது பார்ட்டிகள் 1வது பார்ட்டிக்கு இன்று முதல் ஏழு ஆண்டுகளுக்கு வருடம் ஒன்றுக்கு ரூ.15,000/- (ரூபாய் பதினைந்தாயிரம் மட்டும்) வாடகை வீதத்தில் குத்தகைக்கு விட்டுள்ளார்கள்.

2. 1வது பார்ட்டி மேற்குறிப்பிட்ட 7 (ஏழு) வருடங்களுக்கு குத்தகைக்கு எடுத்துக் கொண்டு இன்றைய தேதியில் முன்பணமாக ரூபாய் 50,000/- (ரூபாய் ஐம்பதாயிரம் மட்டும்) நம்மில் 1வது பார்ட்டிகளிடமிருந்து 2வது பார்ட்டிகள் ரொக்கமாக பெற்றுக் கொண்டுள்ளார்கள்.

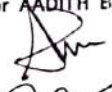


கீழே சொத்து விபரத்தில் குறிப்பிட்டுள்ள சொத்திற்கான வரிகளை மேற்படி 2வது பார்ட்டிகள் செலுத்த சம்மதிக்கிறார்கள்.

3. கீழ்க்கண்ட குத்தகை சொத்தை பொருத்து அரசு சம்பந்தமாக ஏதாவது கையொப்பம் தேவைப்பட்டால் நம்மில் 2வது பார்ட்டிகள் கையொப்பம் செய்ய சம்மதிக்கிறார்கள்.

குத்தகைக்கு விடுபவர்

குத்தகைக்கு பெறுபவர்

For AADITH BLUE METALS

1. 
2. 
3. 



புத்தகம் 2022ம் வருடத்தில் 1686ம்  
ஆவணம்-13 தாள்களைக் கொண்டது  
4 வது தாள்  
பதிவு அலுவலர்



அனுமதியும் நம்மில் 1வது பார்ட்டி பெயரில் பெற்றுக் கொள்ள வேண்டியது இந்தப்படிக்கு நாம் சேர்ந்து எழுதி வைத்துக் கொண்ட குத்தகை ஆவணம் ஆகும்.

### சொத்து விபரம்

பழனி பதிவு மாவட்டம் கீரனூர் சார்பதிவகம், பழனி வட்டம், கொழுமங்கொண்டான் கிராமம் புன்செய் புலத்தில் அயன் ரீ

சர்வே 388/1ஏ நம்பர் பு.ஹெ. 6.29.0 க்கு பு.ஏ. 15.54 இதில் வடபுறம் மேல்புறமாக பு.ஹெ. 4.26.70 க்கு பு.ஏ. 10.54 உள்ள பூமிக்கு நான்கு மால் விபரம்

வடக்கு - சர்வே 373 நம்பரில் புறம்போக்கு பூமி மற்றும் சர்வே 388/1பி நம்பர் பூமி

கிழக்கு - சர்வே 373 நம்பரில் புறம்போக்கு பூமி, சர்வே 388/1பி நம்பர் பூமி மற்றும் சர்வே 388/1ஏ நம்பரில் ஏற்கனவே அரசுடன் குத்தகைக்கு பதிவு செய்யப்பட்டுள்ள பூமி மற்றும் சர்வே 389 நம்பர் பூமி

தெற்கு - சர்வே 387 நம்பர் பூமி மற்றும் சர்வே 388/1ஏ நம்பரில் ஏற்கனவே அரசுடன் குத்தகைக்கு பதிவு செய்யப்பட்டுள்ள பூமி

குத்தகைக்கு விடுபவர்

குத்தகைக்கு பெறுபவர்

For AADITH BLUE METALS

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குத்தகை 2022 வகுப்பில் 1686 ஆவணம் 13 நாட்களைக் கொண்டது 5 வது தாள் பதிவு புலனலர்
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மேற்கு - சர்வே 387 நம்பரில் தென்வடல் புறம்போக்கு பாதை மற்றும் சர்வே 373 நம்பரில் புறம்போக்கு பூமி



இதன் மத்தியில் ஷே பு.ஹெ. 4.26.7 க்கு பு.ஏ 10.54 உள்ள பூமியில் மேல்கோடு தென்வடலாக பு.ஹெ. 2.33.5 க்கு பு.ஏ. 5.76 (ஐந்து ஏக்கர்) யும்.

(தற்கால சட்டிவிஷன்படி சர்வே 388/1A2 நம்பருக்கு கட்டுப்பட்டது) ஷே பூமிகளுக்கு தாளையூத்து கள்ளிமந்தயம் மெயின் ரோட்டிலிருந்து டெயில் பாதையிலிருந்து சர்வே 387 நம்பர் புறம்புகல் வழியாகவும் சர்வே 381/2A2 சர்வே 381/1A1 ஆகிய நம்பர்கள் வழியாகவும் போக்குவரத்து செய்து கொள்ளும் பாதைப் பாத்தியமும் மாமூல் பாதைப் பாத்தியமும் சேர்ந்து.

குத்தகைக்கு விடுபவர்


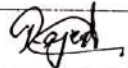
குத்தகைக்கு பெறுபவர்

For AADITH BLUE METALS

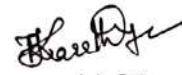
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3. 



சாட்சிகள்:

1. 	B.செல்வராஜ், த/பெ.பாலகிருஷ்ணன், பெருமாள்சாமி நகர், பிகே.புதூர், குனியமுத்தூர், கோயமுத்தூர் மாவட்டம். (ஆதார் எண்.4498 7690 2605)
2. 	கொல்லேரி ராஜேஷ் த/பெ. அச்சுதன் நாயர், பாராளம், திருச்சூர் கேரள மாநிலம் (ஆதார் எண் 7133 0181 5464 )

ஆவணம் தயார் செய்தவர்



R. கார்த்திகேயன்,  
ஆவண எழுத்தர்,  
உரிமம் எண் B2/PLN/2019, புஷ்பத்தூர் 624 618

1 புத்தகம் 2022ம் வருடத்திய 1686ம்  
ஆவணம் 13 தாள்களைக் கொண்டது  
6 வது தாள்  
புதிது அலுவலர்



R/கீரனூர்/புத்தகம்-1/1686/2022

புத்தகம் 2022ம் ஆண்டு வகுப்புகள் 1686  
ஆவணம் 13 தாள்களைக் கொண்டது  
7  
அலுவலர்

1899ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 42வது பிரிவின் கீழானது

2022ம் ஆண்டு வரிசை எண் 752


மதுக்கரை வழி. கதவு எண் 2/34, பிச்சனூர், மதுக்கரை, கோயம்புத்தூர், தமிழ்நாடு, இந்தியா, 641105-ல் வசிக்கும் திரு குமரேஷ் என்பவரிடமிருந்து ₹ 550/- (ரூபாய் ஐந்துநூற்று ஐம்பது மட்டும்) இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்.









சார்பதிவாளர் : கீரனூர்  
நாள்: 05/07/2022

சார்பதிவாளர் மறையும் இந்திய முத்திரைச் சட்டம் பிரிவு  
சார்பதிவாளர்  
கீரனூர்.

2022 ஆம் ஆண்டு ஜூலை மாதம் 05ம் தேதி பி.ப. 03.31 மணியளவில் கீரனூர் சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ₹ 1,780/- செலுத்தியவர்.

<p>இடது பெருவிரல்</p>  	 <p>சுடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி</p>	
<p>எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல்</p>  	 <p>'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:71871293d3ab74e15a4f218399d04c104fc4d1 (Details from UIDAI : Shaju V. B S/O: Bhaskaran V. K, 10-03-1971, xxxxxxxx5492)</p>	
<p>எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல்</p>  	  <p>'சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்' என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:097070396291398b2a4c2d9944d4a2b4fc674b (Details from UIDAI : Sasikumar S/O: Ramakrishnan, 30-</p>	

R/கீரனூர்/புத்தகம்-1/1686/2022

	05-1971, xxxxxxxx4949)	
<p>எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல்</p> 	 <p>"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:6063848b735a37108e4133944382856e8eada6 (Details from UIDAI : Antony Raphel , 25-05-1968, xxxxxxxx6393)</p>	
<p>எழுதி வாங்கியதாக ஒப்புக் கொண்டவர் இடது பெருவிரல்</p> 	 <p>"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:070290fda5d9cc73d94099b3efd3ce8475ee1e (Details from UIDAI : Kumaresh.T S/O: Thangamuthu, 03-09-1970, xxxxxxxx1835)</p>	


2022 ஆம் ஆண்டு ஜூலை மாதம் 5ம் நாள்

  
 வெண்மதி ப...  
 சார்பதிவாளர்  
 கீரனூர்

R/கீரனூர்/புத்தகம்-1/1686/2022 எண்ணாகப் பதிவு செய்யப்பட்டது.

நாள்: 05/07/2022  
 கீரனூர்



  
 வெண்மதி ப...  
 சார்பதிவாளர்  
 கீரனூர்.

புத்தகம் 2022ம் வருடத்தில் 1686  
 ஆவணம் 13 தாள்களைக் கொண்டது  
 8 வது தாள்  
 பதிவு அலுவலர்







தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திண்டுக்கல்

வட்டம் : பழனி

வருவாய் கிராமம் : கொழுமகொண்டான்

பட்டா எண் : 1369

உரிமையாளர்கள் பெயர்

1. - .. M/S AADITH BLUE METALS -

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
388	1A2	4 - 26.70	5.29	--	--	--	--	2022/0105 /13/260116--2022 /13/21/000119SD -- 09-04-2022
		4 - 26.70	5.29					

குறிப்பு2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 13/21/064/01369/140409 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 05-07-2022 அன்று 01:57:43 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

*[Handwritten Signature]*

*[Handwritten Signature]*

*[Handwritten Signature]*

*[Handwritten Signature]*

புத்தகம் 2022ம் வருடத்திய 1686ம்  
ஆவணம் 13 தாள்களைக் கொண்டது  
9 வது தாள்  
பதிவு அலுவலர்



7/5/2022, 2:01 PM

ரணார்

1212008

**आयकर विभाग**  
**INCOME TAX DEPARTMENT**  
**AADITHBLUEMETALS**



**भारत सरकार**  
**GOVT. OF INDIA**



**07/05/2008**  
 Permanent Account Number  
**AAPFA5878F**

12122008




14ஆம் தரம் 2020-ம் வருடத்தில் 1686 ம்  
 ஆவணம் 13 தாள்களைக் கொண்டு  
 10 வது தாள்  
 பதிவு செய்தவர்



Scanned with CamScanner

भारत सरकार  
GOVERNMENT OF INDIA



Kumaresh T  
DOB 03/09/1970  
Male / MALE



5629 9972 1835

भारतीय विहित पदपत्र प्राधिकरण  
INDIAN POSTAL REGULATORY AUTHORITY



**Address:**  
SO, Thanjamuthu, 2/34  
PICHANUR PICHANUR POST  
NADUKKALAI VEA, Pichanur  
Coimbatore  
Pin - 561105

5629 9972 1835

*[Handwritten signatures]*

*[Handwritten signature]*

1. 1686  
2. 1686  
3. 1686  
4. 1686  
5. 1686  
6. 1686  
7. 1686  
8. 1686  
9. 1686  
10. 1686

*[Handwritten signature]*



ഭാരത സർക്കാർ  
GOVERNMENT OF INDIA

ആന്റി നാമം  
Antony Raphael  
ആൾ നാമം  
Father: RAPHEL

ജനന വർഷം/Year of Birth: 1968  
പുരുഷൻ / Male

3192 4676 6393

ആധാർ - സാധാരണക്കാരന്റെ അവകാശം

ഭാരത സർക്കാർ  
GOVERNMENT OF INDIA

Address: PULIKKAN HOUSE, C G THEATRE VIA, PUDUKAD P.O, Parappukkara, Nandikkara, Thrissur, Kerala, 680301

1800 180 1947 help@uidai.gov.in www.uidai.gov.in P.O. Box No.1947, Bengaluru-560 001

ഭാരത സർക്കാർ  
GOVERNMENT OF INDIA

ശാശികുമാർ  
Sasikumar

ജനന വർഷം/Year of Birth: 1971  
പുരുഷൻ / Male

2719 3840 4949

ആധാർ - സാധാരണക്കാരന്റെ അവകാശം

ഭാരത സർക്കാർ  
GOVERNMENT OF INDIA

Address S/O Ramakrishnan Vettiattil House, Paralam, Thrissur Ammadam, Kerala, 680563

1800 180 1947 help@uidai.gov.in www.uidai.gov.in P.O. Box No.1947, Bengaluru-560 001

ഭാരത സർക്കാർ  
GOVERNMENT OF INDIA

ശ്യാമു വി ബി  
Shaju V. B

ജനന വർഷം/Year of Birth: 1971  
പുരുഷൻ / Male

7050 5504 5492

ആധാർ - സാധാരണക്കാരന്റെ അവകാശം

ഭാരത സർക്കാർ  
GOVERNMENT OF INDIA

Address S/O Bhaskaran V K, Veliamparambil House Thottippal, Behind Temple Thottippal, Thottippal, Thrissur, Thottippal, Kerala, 680310

1800 180 1947 help@uidai.gov.in www.uidai.gov.in P.O. Box No.1947, Bengaluru-560 001

*Handwritten signatures*

*Handwritten signature*

പുത്തകം 2022-ൽ വരുമാനം 16,866 രൂപ  
ആവേശം 13 താഴെക്കൽ കൊണ്ടു  
12 വരുമാനം  
പട്ടണ പട്ടണമി



भारत सरकार  
GOVERNMENT OF INDIA



செல்வராஜ் பாலகிருஷ்ணன்  
Selvaraj Balakrishnan  
பிறந்த நாள்/ DOB: 29/05/1971  
ஆண் / MALE



4498 7690 2605

எனது ஆதார், எனது அடையாளம்.

भारतीय विधिक पहचान प्राधिकरण  
Unique Identification Authority of India

முகவரி:  
S/O பாலகிருஷ்ணன், 11  
பெருமள சாமி நகர், 13 2a  
புத்தூர், கும்பகோணம்  
தமிழ்நாடு - 641008

Address:  
S/O Balakrishnan 11 PERUMAL  
SAMI NAGAR P.K.PUTHUR  
Kumyayamur, Combarlore  
Tamil Nadu - 641008

4498 7690 2605

MEERA AADHAAR, MERI PEHACHAN

ഭാരത സർക്കാർ  
Government of India



കൊളേരി രാജേഷ്  
Kollery Rajesh  
ജന്മ തീയതി/DOB: 05/04/1972  
പുരുഷൻ/ MALE



7133 0181 5464

എന്റെ ആധാർ, എന്റെ ഐഡന്റിറ്റി

भारतीय विधिक पहचान प्राधिकरण  
Unique Identification Authority of India

Address:  
S/O: Achuthan Nair, Thekke Pullil  
House, Parppkadavu, Paralam,  
Thrissur,  
Kerala - 680563

റജിസ്ട്രേഷൻ / അപ്ലിക്കേഷൻ ഓഫീസ്, അച്ചുതൻ നായർ, തേക്കെ പുല്ലിൽ ഹൗസ്, പാർപ്പകാവു, പാറലാം, തൃശ്ശൂർ, കേരളം - 680563

7133 0181 5464

www.uidai.gov.in

*Am*  
*Co*  
*Shya*

*Surpali*

புத்தகம் 2022ம் வருடத்திய 1686  
ஆவணம் 13 தாள்களையும் கொண்டது  
13 வது தாள்  
[Signature]



# **MINE PLAN**

# MINING PLAN FOR KOLUMANKONDAN ROUGH STONE AND GRAVEL QUARRY

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

## LOCATION OF THE QUARRY LEASE APPLIED AREA

STATE : TAMIL NADU  
DISTRICT : DINDIGUL  
TALUK : PALANI  
VILLAGE : KOLUMANKONDAN  
S.F.NO : 388/1A2(P)  
EXTENT : 2.33.10Ha.

For

## APPLICANT

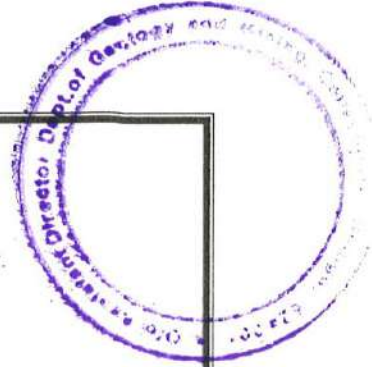
**Thiru. T.Kumaresh,**  
S/o.(Late) Thangamuthu,  
Madukkarai (Via),  
Coimbatore District.

## PREPARED BY

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

No.93/36E2, Subramaniyar Kovil Street,  
Omalur Taluk, Salem District,  
Tamil Nadu, Pin code-636 455.  
Mobile:97502 62927 & 94446 54520.

T.Kumaresh,  
S/o.(Late) Thangamuthu,  
Madukkarai (Via),  
Coimbatore District.



**CONSENT LETTER FROM THE APPLICANT**

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.33.10hectares of Patta lands in S.F.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu State has been prepared by

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

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

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

No.93/36E2,Subramaniyar Kovil Street,  
Omalur Taluk, Salem District,  
Tamil Nadu, Pin code-636 455.  
Mobile:97502 62927 & 94446 54520.

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

Signature of the Applicant

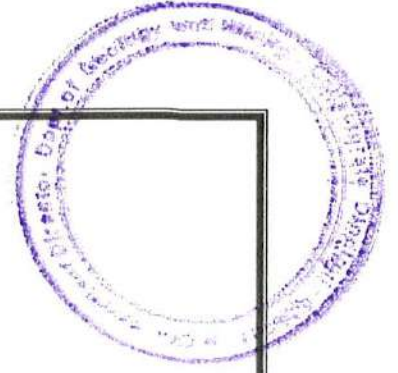
T.Kumaresh

Place:

Date: 05.05.2022



T.Kumaresh,  
S/o.(Late) Thangamuthu,  
Madukkarai (Via),  
Coimbatore District.



**DECLARATION**

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.33.10hectares of Patta lands in S.F.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Signature of the Applicant

T.Kumaresh

Place:

Date: 05.05.2022

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

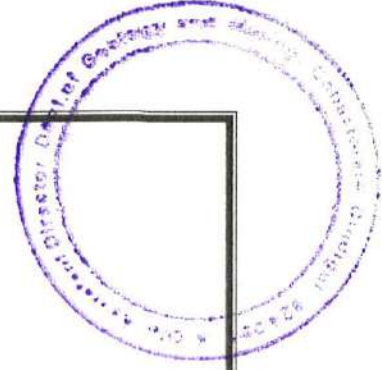
**Qualified Person**

No.93/36E2,Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.



**CERTIFICATE**

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of **Rough Stone and Gravel** quarry lease over an extent of 2.33.10hectares of Patta lands in S.F.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu State applied by Thiru.T.Kumaresh, for fresh quarry lease.

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

Certified

Signature of Qualified Person.

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

**Qualified Person**

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

Place: Salem

Date: 07.05.2022

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

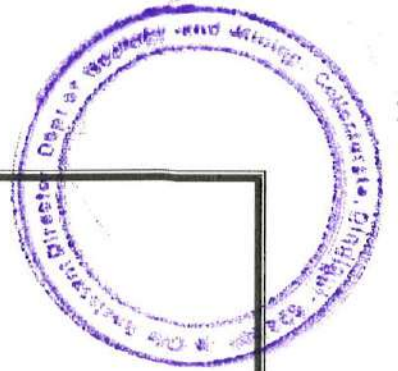
**Qualified Person**

No.93/36E2,Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin code-636 455.

Mobile:97502 62927 & 94446 54520.



**CERTIFICATE**

Certified that, in preparation of Mining Plan for **Rough Stone and Gravel** quarry over an extent of 2.33.10hectares of Patta lands in S.F.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu State for Thiru.T.Kumaresh, covers all the provisions of Mines Act, Rules, and Regulations etc made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Certified

Signature of Qualified Person.

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

**Qualified Person**

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

Place: Salem

Date: 07.05.2022

## CERTIFICATE

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

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

Accordingly I prepared this Mining Plan in respect of Rough Stone and Gravel quarry lease applied for an extent of 2.33.10Ha of (Patta lands) in S.F.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, by Thiru. T.Kumaresh for a period of Five years. Since the Mining Plan is prepared as per the provisions contained in Rule 15(1) (a) and (b) of Minerals (Other than Atomic, Hydro Carbons Energy Minerals) concession Rules 2016, the same may be approved by the Competent Authority.

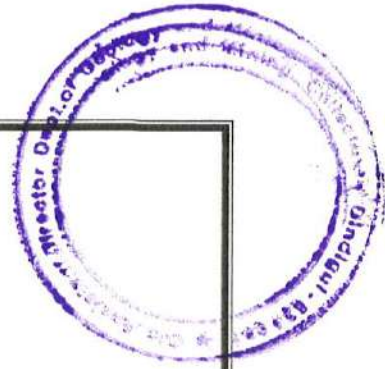
**C.Natarajan, M.Sc.,M.Phil.,**

**Qualified Person**

Place: Salem

Date: 07.05.2022

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



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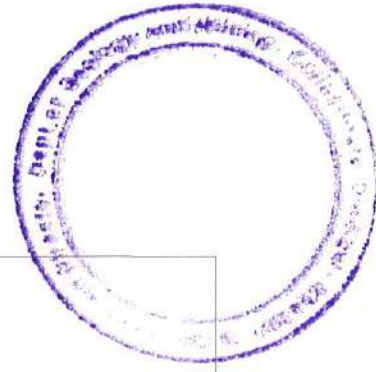


**Annexure**

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## MINING PLAN FOR MINOR MINERALS

### ROUGH STONE AND GRAVEL

Over an extent of 2.33.10 hectares of Patta land in S.F.No.388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District, Tamil Nadu State.

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

#### 1.0 Introduction and Executive Summary;

1. The present Mining Plan is prepared for Thiru.T.Kumaresh, S/o.(Late) Thangamuthu, Madukkarai (Via), Coimbatore District.
2. The application was processed by the Assistant Director, Department of Geology and Mining, Dindigul, and passed an order vide Rc.No. 50/ 2022 (Kanimam) dated 04.05.2022 directing the applicant to produce approved Mining Plan under Rule 41(5) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and Environmental Clearance Certificate under Rule 42 from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease to quarry **Rough Stone and Gravel** over an extent of 2.33.10 hectares of Patta lands in S.F.No. 388/1A2(P) of Kolumankondan Village, Palani Taluk, Dindigul District of Tamil Nadu State for a period of Five years.
3. Accordingly, Mining Plan is prepared under the provisions of rule 19(1), 41 and 42 as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions imposed in the precise area communication letter.
4. Geological Resources is estimated at 9,32,520m<sup>3</sup> of Rough stone 93,252m<sup>3</sup> of Weathered Rock and 23,313m<sup>3</sup> of gravel formation and Mineable Reserves is estimated at 2,33,610m<sup>3</sup> of Rough Stone, 60,168m<sup>3</sup> of Weathered Rock and 15,042m<sup>3</sup> of gravel formation and after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.
5. Production Schedule is proposed production of 2,33,610m<sup>3</sup> of Rough Stone, 60,168m<sup>3</sup> of Weathered Rock and 15,042m<sup>3</sup> of gravel formation for the period of five years.



6. Environmental parameters,

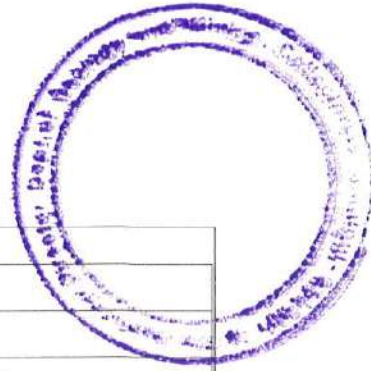
- i) The area does not attract the Forest Conservation Act, 1980 as there is no forest around 10km radius.
- ii) There is no interstate boundary around 10Kms radius.
- iii) There is no wild life animal sanctuary within 10Kms radius from the project site area under the Wildlife (Protection) Act, 1972.

Therefore the project seeks clearance only from State Level Environmental Impact Assessment Authority (SEIAA) under B2 Category.

7. Environmental measures to be adopted shall be,

- i) Dust Control at source while drilling and blasting,
- ii) Dust suppression at loading point and transport haul roads,
- iii) Noise Control in blasting, control of fly rock missiles and vibration by doing peak particle velocity with in standard as prescribed by the DGMS and MOEF.
- iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
- v) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.
- vi) Mining near major fracture zones if any should be avoided to control ground water fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles should be in tack to maintain minimum emission level of flue gases.
- viii) Noise level should not exceed 80db and the vehicles should use only permitted Air Horn while on road near residential areas.
- ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhere to.
- x) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.





**EXECUTIVE SUMMARY:**

a.	Name of the Village Panchayat	:	Kolumankondan
b.	Name of the Panchayat Union	:	Palani
c.	The proposed total Movable Reserves	:	2,33,610m <sup>3</sup> of Rough Stone, 60,168m <sup>3</sup> of Weathered Rock 15,042m <sup>3</sup> of gravel formation
d.	The proposed quantity of reserves (level of production) for Five years to be mined is(Recoverable reserves)	:	2,33,610m <sup>3</sup> of Rough Stone, 60,168m <sup>3</sup> of Weathered Rock 15,042m <sup>3</sup> of gravel formation
e.	Total extent of the area	:	2.33.10Ha
f.	Proposed Period of mining	:	Five Years
g.	Existing depth	:	It is fresh quarry lease applied area
h.	Proposed Depth of mining	:	45m below ground level
i.	Method of mining/level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m is proposed.
j.	Types of Machineries used in the quarry	:	Machineries like Tractor mounted compressor attached with Jack hammers, Excavators are proposed to deploy for quarrying operation.
k.	Cost of the Project A. Fixed Assets Cost B. Operational Cost C. EMP Cost		Rs. 16,98,600/- Rs. 61,00,000/- Rs. 5,70,000/- Total Project cost(A+B+C)= <b>Rs. 83,68,600/-</b>

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

Corners	Co- ordinates		Distance between the corners
	Latitude	Longitude	
1	10°33'33.12"N	77°26'33.95"E	1-2 = 91.0m
2	10°33'35.68"N	77°26'32.44"E	2-3 = 106.0m
3	10°33'38.42"N	77°26'34.55"E	3-4 = 61.6m
4	10°33'40.42"N	77°26'34.44"E	4-5 = 93.0m
5	10°33'41.74"N	77°26'37.19"E	5-6 = 215.4m
6	10°33'34.73"N	77°26'36.93"E	6-7 = 54.4m
7	10°33'33.00"N	77°26'36.57"E	7-1 = 79.8m



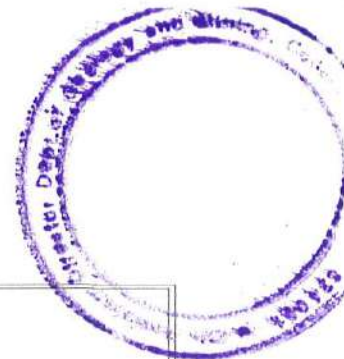
## 2.0 General Information:

2.1	a.	Name of the Applicant	:	Thiru.T.Kumaresh,
	b.	Address of the Applicant with phone No and e-mail id if any	:	S/o.(Late) Thangamuthu, Madukkarai (Via), Coimbatore District. Pin Code- 641105 Cell No.:9842208272
	c.	Status of the Applicant	:	Individual
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone and Gravel.
	b.	Precise area communication letter No.	:	Precise area communication letter received from the Assistant Director, Department of Geology and Mining, Dindigul, vide Rc.No. 50/ 2022 (Kanimam) dated 04.05.2022.
	c.	Period of permission / lease granted	:	The Assistant Director, Department of Geology and Mining, Dindigul, has grant of lease for <b>Five years.</b>
	d.	Name and Address of the RQP preparing Mining Plan	:	<b>C.Natarajan, M.Sc.,M.Phil., Qualified Person</b> No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin-636 455. Mobile: 9750223535 & 94446 54520.

## 3.0 Location:

### Details of the Area:

State	District	Taluk	Village	S.F.No.	Extent in hectares
Tamil Nadu	Dindigul	Palani	Kolumankondan	388/1A2(P)	2.33.10

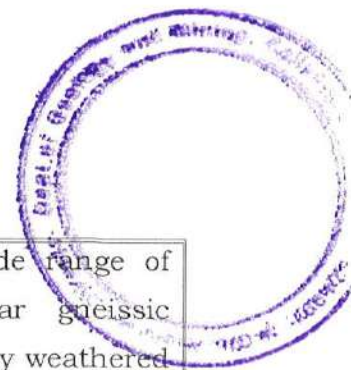


a.	Classification of the Area (Ryotwari / poramboke / others)	:	Patta land
b.	Ownership / Occupancy of the Applied area (Surface rights)	:	It is patta land registered in the name of M/s.Aadith Blue metals vide Patta No-1369. The applicant has obtained consent from Pattadhar, Please refer annexure no IV & VII.
c.	Toposheet No. with Latitude and Longitude	:	Topo Sheet No: 58 F/06 Latitude : 10°33'33.00"N to 10°33'41.74"N Longitude : 77°26'32.44"E to 77°26'37.19"E
d.	Existence of Public Road / Railway line if any nearby the area and approximate distance	:	There is an existing road from the area leads to Kolumankondan - Korikadavu road on Northern side of the area. The Nearest Railway line is Udumalaipettai - Dindigul line which is about 4.5km on southern side of the area.

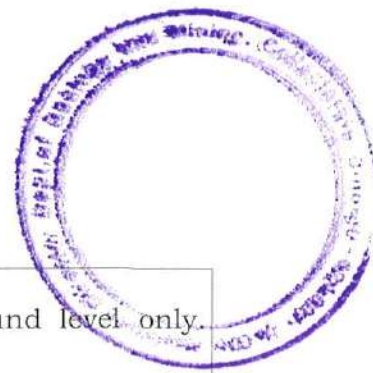
**PART - A**

**4.0 Geology and Mineral Reserves:**

4.1	a.	Topography	:	<ol style="list-style-type: none"> <li>1. The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is noticed below 1m (Avg) Gravel and 4m weathered rock formation and sloping towards Southeastern side of the area, the altitude of the area is above 317m (maximum) from MSL.</li> <li>2. No major river is found nearby the lease applied area.</li> <li>3. Water table is found at a depth of 62m in summer and 59m in rainy seasons.</li> <li>4. Temperature of the area is reported to be 18°C to a maximum of 42°C during summer.</li> <li>5. Rainfall of this area is about 800mm to 900 mm during the both NE &amp; SW monsoons.</li> </ol>
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	<p>b. General Geology of the Area :</p>	<p>The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite.</p> <p>The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high grade metamorphic rock.</p> <p>The strike of the Charnockite formation is North South with almost vertical dipping.</p> <p>The general geological succession of the area is given as under.</p> <table border="1"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Alluvium, Gravel</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Charnockite Peninsular Gneiss, and Calc Gneiss</td> </tr> </tbody> </table>		Age	Rock Formation	1.	Recent to Sub recent	Alluvium, Gravel	2.	Archaean	Charnockite Peninsular Gneiss, and Calc Gneiss
	Age	Rock Formation									
1.	Recent to Sub recent	Alluvium, Gravel									
2.	Archaean	Charnockite Peninsular Gneiss, and Calc Gneiss									
4.2	<p>Details of Exploration already carried out if any :</p>	<p>No exploration was carried out, as the Rough stone formations are clearly visible from adjacent existing quarry pit.</p>									
4.3	<p>a. Estimation of Reserves :</p>	<p>The Geological and Recoverable reserves are estimated by cross sectional method.</p> <p>Totally Four sections have been drawn, one section drawn length wise as (X-Y), another three sections drawn width wise as (A-B), (C-D), (E-F) to cover maximum area considered for lease.</p> <p>The Plans and Sections have been drawn with a scale of 1:1000 and 1:500 respectively. Please refer plate No.III.</p>									



**a. Geological Resources**

The quarrying is restricted up to a depth of 45m below ground level only. Availability of Resources is given below.

Table No-1

Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Gravel in m <sup>3</sup>	Weathered Rock in m <sup>3</sup>	Geological Resources of Rough stone in m <sup>3</sup>
XY-AB	82	81	1	6642	6642		
	82	81	4	26568		26568	
	82	81	40	265680			265680
	<b>Total</b>				<b>6642</b>	<b>26568</b>	<b>265680</b>
XY-CD	111	111	1	12321	12321		
	111	111	4	49284		49284	
	111	111	40	492840			492840
	<b>Total</b>				<b>12321</b>	<b>49284</b>	<b>492840</b>
XY-EF	50	87	1	4350	4350		
	50	87	4	17400		17400	
	50	87	40	174000			174000
	<b>Total</b>				<b>4350</b>	<b>17400</b>	<b>174000</b>
<b>Grand Total</b>					<b>23313</b>	<b>93252</b>	<b>932520</b>

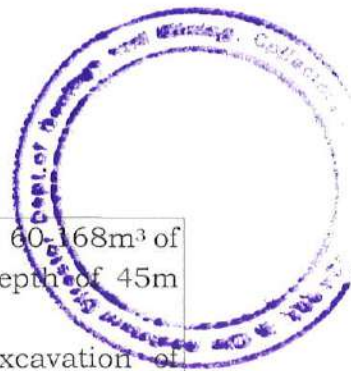
Gravel Formation : 23,313m<sup>3</sup>  
 Weathered Rock Formation : 93,252m<sup>3</sup>  
 The Geological Resources of Rough stone : 9,32,520m<sup>3</sup>

**b. Mineable Reserve**

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

Table No-2

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Gravel in m <sup>3</sup>	Weathered Rock in m <sup>3</sup>	Mineable Reserves of Rough in m <sup>3</sup>
XY-AB	I	72	64	1	4608	4608		
	II	72	64	4	18432		18432	
	III	67	54	5	18090			18090
	IV	62	44	5	13640			13640
	V	57	34	5	9690			9690
	VI	52	24	5	6240			6240
	VII	47	14	5	3290			3290
	<b>Total</b>					<b>4608</b>	<b>18432</b>	<b>50950</b>
XY-CD	I	111	94	1	10434	10434		
	II	111	94	4	41736		41736	
	III	106	84	5	44520			44520
	IV	101	74	5	37370			37370
	V	96	64	5	30720			30720
	VI	91	54	5	24570			24570
	VII	86	44	5	18920			18920
	VIII	81	34	5	13770			13770
	IX	71	24	5	8520			8520
	X	61	14	5	4270			4270
	<b>Total</b>					<b>10434</b>	<b>41736</b>	<b>182660</b>
<b>Grand Total</b>					<b>15042</b>	<b>60168</b>	<b>233610</b>	

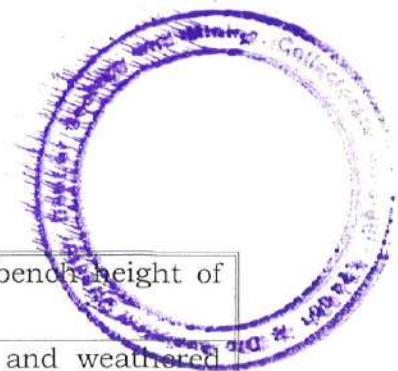


The mineable reserve is computed as 2,33,610m<sup>3</sup> of Rough stone, 60,168m<sup>3</sup> of Weathered rock formation and 15,042m<sup>3</sup> of Gravel formation upto a depth of 45m below ground level only.

Gravel and weathered rock mass will be removed first, after the excavation of weathered rock mass will preserved all along the boundary barrier if market is rise the will be loaded into tipper for needy customer this will be done after paying the necessary Seigniorage Fees to Government.

**5.0 Mining:**

5.1	Method of Mining	: 1. Opencast method of semi mechanized mining with 5.0m vertical bench width of the bench is not less than bench height. 2. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom[possible due to various inherent petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.
5.2	Mode of Working	: The rough stone is proposed to quarry 5m bench height and width with conventional opencast semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy buyers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining.

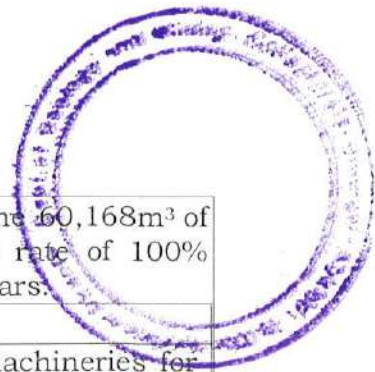


5.3	Proposed bench height & Width	:	Quarrying of Rough Stone is proposed bench height of 5m and bench width of 5m.
5.4	Details of Overburden / Mineral Production proposed for the first 5 years.	:	The overburden in the form of Gravel and weathered rock mass after the excavation of weathered rock mass will preserved all along the boundary barrier if market is rise the will be loaded into tipper for needy customer this will be done after paying the necessary Seigniorage Fees to Government. The excavated rough stone and gravel will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low lying areas.

**The Yearwise Production and Development Table**

Table No -3

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Gravel in m <sup>3</sup>	Weathered Rock in m <sup>3</sup>	Mineable reserve of Roughstone in m <sup>3</sup>
I	XY-AB	I	72	64	1	4608	4608		
		II	72	64	4	18432		18432	
		III	67	54	5	18090			18090
	XY-CD	I	31	94	1	2914	2914		
		II	31	94	4	11656		11656	
		III	31	84	5	13020			13020
<b>Total</b>							<b>7522</b>	<b>30088</b>	<b>31110</b>
II	XY-CD	I	80	94	1	7520	7520		
		II	80	94	4	30080		30080	
		III	75	84	5	31500			31500
	<b>Total</b>							<b>7520</b>	<b>30080</b>
III	XY-CD	IV	101	74	5	37370			37370
	XY-AB	IV	62	44	5	13640			13640
		V	35	34	5	5950			5950
	<b>Total</b>								
IV	XY-AB	V	22	34	5	3740			3740
	XY-CD	V	96	64	5	30720			30720
		VI	83	54	5	22410			22410
	<b>Total</b>								
V	XY-CD	VI	8	54	5	2160			2160
		VII	86	44	5	18920			18920
		VIII	81	34	5	13770			13770
		IX	71	24	5	8520			8520
		X	61	14	5	4270			4270
	XY-AB	VI	52	24	5	6240			6240
		VII	47	14	5	3290			3290
	<b>Total</b>								
<b>Grand Total</b>							<b>15042</b>	<b>60168</b>	<b>233610</b>



The applicant has proposed to carry out 2,33,610m<sup>3</sup> of Rough stone 60,168m<sup>3</sup> of Weathered rock formation and 15,042m<sup>3</sup> of Gravel formation at the rate of 100% recovery upto a depth of 45m below ground level for the period of five years.

5.5	Machineries to be used													
a.	Mining	: It is proposed to use following machineries for quarrying rough stone 1) Tractor mounted compressor with jack hammer 2) Excavator of 0.90m <sup>3</sup> bucket capacity (with Rock breaker attachment).												
b.	Loading	: Excavator of 0.90m <sup>3</sup> bucket capacity (with Rock breaker attachment).												
c.	Transportation	: Tipper 4Nos 5/10Ts capacity.												
5.6	Disposal of Overburden	: The overburden in the form of Gravel and weathered rock mass after the excavation of weathered rock mass will preserved all along the boundary barrier if market is rise the will be loaded into tipper for needy customer this will be done after paying the necessary Seigniorage Fees to Government. Gravel will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low lying areas.												
5.7	Brief Note on Conceptual Mining Plan for the entire lease period	: Conceptual Mining Plan is prepared with an object of Five years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc. Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. Ultimate Pit dimension is given as under, <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">Ultimate Pit dimension (M)</th> </tr> <tr> <th>Pit No</th> <th>Length (max) in (m)</th> <th>Width (Avg) in(m)</th> <th>Depth(max) in(m)</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>183</td> <td>82</td> <td>45</td> </tr> </tbody> </table> Afforestation has been proposed on all along the boundary barrier by planting trees. All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.	Ultimate Pit dimension (M)				Pit No	Length (max) in (m)	Width (Avg) in(m)	Depth(max) in(m)	I	183	82	45
Ultimate Pit dimension (M)														
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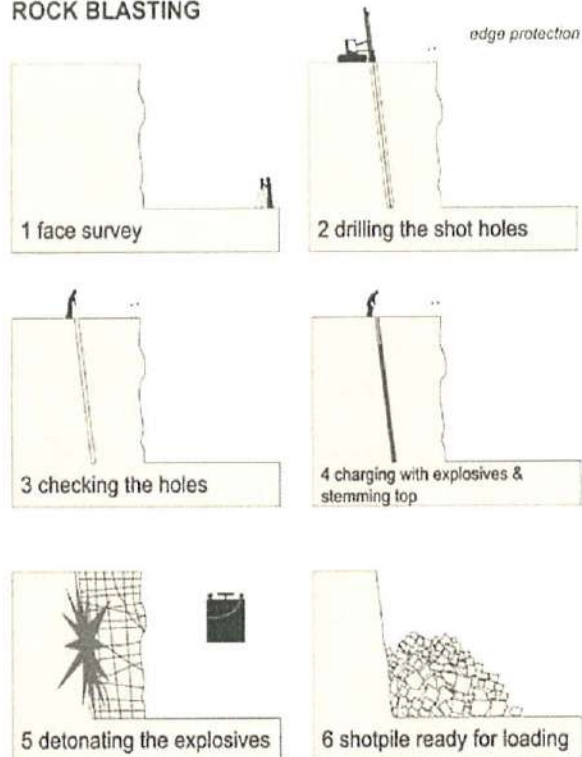


**6.0 Blasting:**

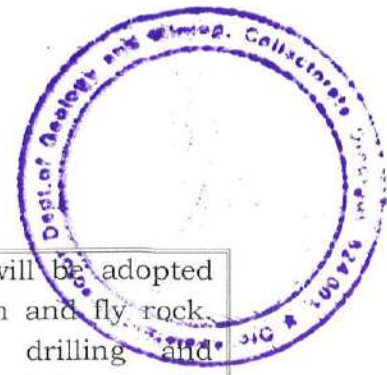
6.1 Blasting Pattern : The massive formation shall be broken into pieces of portable size by drilling and blasting using jack hammers and shot hole blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 Tonnes per K.g of explosives. Blasting parameters are as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

Diameter of the hole	: 32-36 mm
Spacing	: 0.6m
Depth	: 1 to 1.5m
Burden for hole	: 0.6m
Pattern of hole	: ZigZag
Inclination of hole	: 70° from the horizontal.

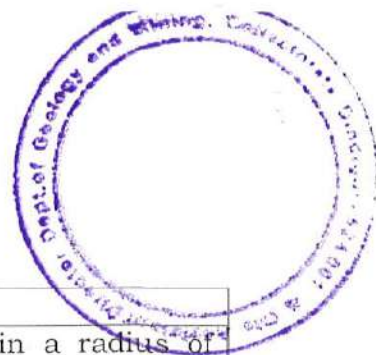
**ROCK BLASTING**



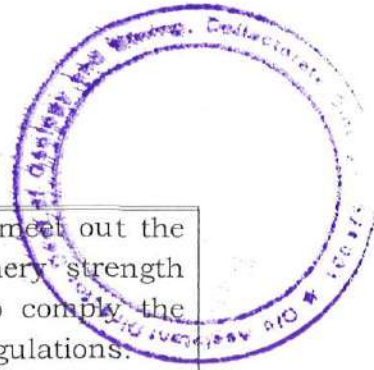
6.2 Types of Explosives : Small dia, 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.



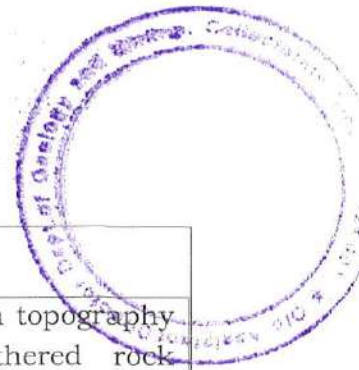
6.3	Measures proposed to minimize ground vibration due to blasting	<p>: Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock.</p> <table border="1"> <tr> <td>Number of holes</td> <td>:</td> <td>134</td> </tr> <tr> <td>Powder factor</td> <td>:</td> <td>6Ts/Kg of explosives</td> </tr> <tr> <td>Total explosive required</td> <td>:</td> <td>67Kg slurry explosives</td> </tr> <tr> <td>Charge / hole</td> <td>:</td> <td>0.5Kg</td> </tr> <tr> <td>Blasting time</td> <td>:</td> <td>12-2 Pm</td> </tr> </table>	Number of holes	:	134	Powder factor	:	6Ts/Kg of explosives	Total explosive required	:	67Kg slurry explosives	Charge / hole	:	0.5Kg	Blasting time	:	12-2 Pm
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Blasting time	:	12-2 Pm															
6.4	Storage of Explosives and safety measures to be taken while blasting.	<p>: The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager.</p>															
<p><b>7.0 Mine Drainage:</b></p>																	
7.1	Depth of Water table	<p>: The ground water table is reported as 62m below ground level. In the proposed mining plan only 45m (Below ground level) depth has been envisaged as workable depth for safe &amp; economic quarrying for the entire lease period. Hence the quarrying operation may not affect the ground water.</p>															
7.2	Arrangement and Places where the mine water is finally proposed to be discharged	<p>: The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5H.P.Motor. The quality of water is potable and it is not contaminated with any hazardous things. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water stored in the old pit will also be used for plantation purposes</p>															



<b>8.0 Other Permanent Structures:</b>					
8.1	Habitations / Village	:	There are no habitations within a radius of 300m.		
8.2	Power lines (HT/LT)	:	There is no Power lines (HT/LT) passing within a radius of 50m.		
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	:	There is seasonal odai passing on southern side of the area and is 50m safety distance maintained and another seasonal odai passing on Northern side and is 240m away from the area.		
8.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 500m.		
8.5	Road (NH, SH, Village Road etc)	:	There is no Archaeological / historical monuments within 500m radius from the area.		
8.6	Places of Worship	:	The National Highway (NH-83) Dindigul – Coimbatore is about 4.5Km on Southern side of the area. The State Highway (SH-192) Melkaraipatty – Palani is about 1.0Km on western side of the area.		
8.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	There is no Reserved Forest /Wild Life Sanctuary etc within a radius of 1km.		
8.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	:	There are No inter State border within a radius of 10Kms.		
8.9	Any Other Structures	:	Nil		
<b>9.0 Employment Potential &amp; Welfare Measures:</b>					
9.1	Employment Potential (Management & Supervisory personal)	:	1. Skilled	Operator	10No.
				Mechanic	1 No.
				Mines manager /Mate	1 No.
			2. Semi-skilled	Driver	4 No.
			3. Unskilled	Musdoor / Labours	15Nos
		Total =	31Nos		
			Allowing 10% absentee, the no. of men of roll will be around 28.		



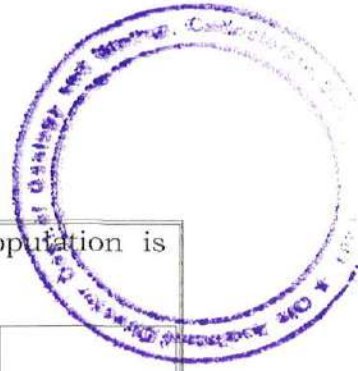
			<p>The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply the statutory provisions of Mines Safety Regulations.</p> <p>It is been ensured that, child labours under 18 years of age will not be engaged for quarrying operation.</p> <p>Necessary life insurance policies will be taken by the applicant to all the employees up to the end of the lease period.</p>
9.2	Welfare Measures		
	a.	Drinking Water	: Packaged drinking water is available from the nearby approved water vendors in Kolumankondan which is about 800m on the Northwestern side of the area.
	b.	Sanitary facilities	: Semi-permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1960.
	c.	First Aid Facility	: First aid kits are kept in Mines office room, in case of such eventualities the victim will be given first aid immediately at the site and injured person will be taken to the hospital. Hospital is available at distance of 13.5Km (SE) in Palani the competent and Statutory foreman/ permit manager will be in charge of first aid.
	d.	Labour Health	: As per Mines Rule, Periodic medical examination related to occupational health safety will be conducted to all the workers in applicants own cost.
	e.	Precautionary safety measures to the Labourers	: Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc., have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.
			<p>Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and systematic quarrying operation.</p>



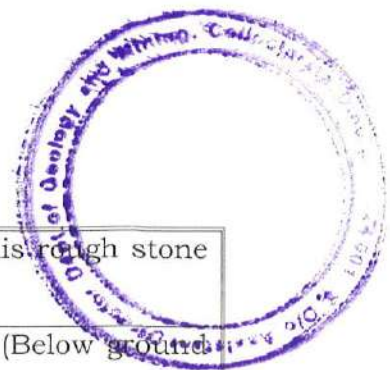
**PART - B**

**10.0 Environmental Management Plan:**

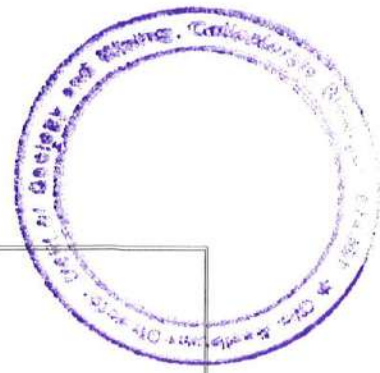
10.1	Existing Land Use Pattern	<p>: 1. The area is exhibits almost plain topography covered by Gravel and weathered rock formation.</p> <p>2. Quarrying operation is proposed up to a depth of 45m below ground level for the proposed mining plan period.</p> <p>3. Fluctuation of Water table in this area is in between 62m and 59m during a year.</p> <p>4. This region receives the average annual rainfall of 800mm to 900mm. The surrounding area is practiced by the seasonal cultivation.</p> <p>The existing land use pattern is given as under.</p> <p align="center">Table No-4</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Land Use</th> <th>Present Area (Hect)</th> <th>Area in use during the quarrying period (Hect)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Quarrying Pit</td> <td>Nil</td> <td>1.50.00</td> </tr> <tr> <td>2.</td> <td>Infrastructure</td> <td>Nil</td> <td>0.01.00</td> </tr> <tr> <td>3.</td> <td>Roads</td> <td>Nil</td> <td>0.02.00</td> </tr> <tr> <td>4.</td> <td>Green Belt</td> <td>Nil</td> <td>0.25.00</td> </tr> <tr> <td>5.</td> <td>Unutilized</td> <td>2.33.10</td> <td>0.55.10</td> </tr> <tr> <td></td> <td><b>Total =</b></td> <td><b>2.33.10</b></td> <td><b>2.33.10</b></td> </tr> </tbody> </table>	Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)	1.	Quarrying Pit	Nil	1.50.00	2.	Infrastructure	Nil	0.01.00	3.	Roads	Nil	0.02.00	4.	Green Belt	Nil	0.25.00	5.	Unutilized	2.33.10	0.55.10		<b>Total =</b>	<b>2.33.10</b>	<b>2.33.10</b>
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10.2	Water Regime	<p>: Water table in this area is noticed at a depth of 62m and presently, in the proposed mining plan only 45m (Below ground level) depth has been envisaged as workable depth for safe &amp; economic quarrying for the entire lease period. hence, it will not affect the ground water depletion of this area</p>																												
10.3	Flora and Fauna	<p>: Except acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.</p>																												
10.4	Climatic conditions	<p>: Generally subtropical climatic condition prevails throughout the year and there is no sharp variation in climate.</p> <p>This District receives rain both in south west and north east monsoon.</p> <p>The average rainfall is about 800mm to 900mm and the temperature ranges from 18°C during winter and to a maximum of 42°C during the summer.</p>																												



10.5	Human Settlement	:	The nearest habitations with the population is given as under. <p style="text-align: center;">Table No-5</p> <table border="1"><thead><tr><th>S. No</th><th>Name of the Village</th><th>Approximate distance &amp; Direction from lease applied area</th><th>Approximate population</th></tr></thead><tbody><tr><td>1.</td><td>Kovilammappatti</td><td>2.2Km – NE</td><td>300</td></tr><tr><td>2.</td><td>Kolumankondan</td><td>800m – NW</td><td>2000</td></tr><tr><td>3.</td><td>Chinna Mottanuthu</td><td>2.4Km – SE</td><td>400</td></tr><tr><td>4.</td><td>Pothupatti</td><td>2.5Km – SW</td><td>350</td></tr></tbody></table>	S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population	1.	Kovilammappatti	2.2Km – NE	300	2.	Kolumankondan	800m – NW	2000	3.	Chinna Mottanuthu	2.4Km – SE	400	4.	Pothupatti	2.5Km – SW	350
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10.6	Plan for Air, Dust Suppression	:	Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. Wet drilling and dust extractor arrangements will be provided to drilling units so as to control raise of dust from the site of drilling. Operators, those exposed directly to such conditions will be provide such protective equipment like mask, ear plug, helmet, gloze etc., as per the Mines Act.																				
10.7	Plan for Noise Control	:	Quarrying of Rough Stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. Nowhere the noise level should exceed the permissible limit of 80db during the quarry working hours.																				
10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Five years	:	The mining plan proposed is for a small production of Rough stone without involving deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned, anyhow environmental impact studies will be conducted as per EIA notification issued by MOEF. It is B2 Category mine.																				



10.9	Proposal for Waste Management	: There is no waste anticipated in this rough stone quarry operation.																																				
10.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	: In the proposed mining plan 45m (Below ground level) depth has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit of 45m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle.																																				
10.11	Program for Afforestation	: The 7.5m safety distance along the lease boundary has been identified to be utilized for afforestation. Appropriate native species of Neem/Pungan trees will be planted in a phased manner as described below.  <p style="text-align: center;">Table No-6</p> <table border="1"> <thead> <tr> <th>Year</th> <th>No. of trees proposed to be planted</th> <th>Survival %</th> <th>Area to be covered Sq.m</th> <th>Name of the species</th> <th>No of trees expected to be grown</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>30</td> <td>80%</td> <td>500</td> <td>Neem/Pungan</td> <td>24</td> </tr> <tr> <td>II</td> <td>30</td> <td>80%</td> <td>500</td> <td>Neem/Pungan</td> <td>24</td> </tr> <tr> <td>III</td> <td>30</td> <td>80%</td> <td>500</td> <td>Neem/Pungan</td> <td>24</td> </tr> <tr> <td>IV</td> <td>30</td> <td>80%</td> <td>500</td> <td>Neem/Pungan</td> <td>24</td> </tr> <tr> <td>V</td> <td>30</td> <td>80%</td> <td>500</td> <td>Neem/Pungan</td> <td>24</td> </tr> </tbody> </table> <p>Nearly 2500Sq.m area is proposed to use under afforestation by planting 30nos. of Neem/Pungan trees during every year with an anticipated survival rate of 80%. The Quarry landuse, layout and afforestation plan is shown in Plate No.III.</p>	Year	No. of trees proposed to be planted	Survival %	Area to be covered Sq.m	Name of the species	No of trees expected to be grown	I	30	80%	500	Neem/Pungan	24	II	30	80%	500	Neem/Pungan	24	III	30	80%	500	Neem/Pungan	24	IV	30	80%	500	Neem/Pungan	24	V	30	80%	500	Neem/Pungan	24
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10.12	Proposed Financial Estimate / Budget for (EMP) Environment Management <b>A.Fixed Asset Cost:</b> 1. Land Cost (600000/1Ha)= 2. First aid room and accessories 3. Labour Shed 4. Sanitary Facility <b>Total=</b>	: Rs. 13,98,600 Rs.1,00,000 Rs.1,00,000 Rs.1,00,000 <b>Rs. 16,98,600/-</b>																																				

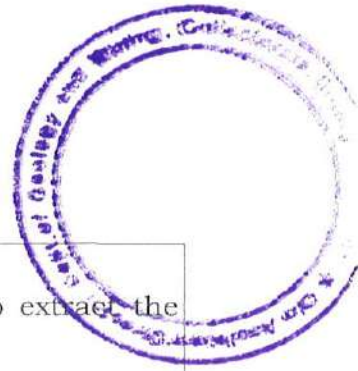


<b>B.Operational Cost:</b>		
1. Machineries	:	Rs.60,00,000-
2. Fencing cost	:	Rs.1,00,000
<b>Total</b>	:	<b>Rs.61,00,000/-</b>
<b>C.EMP Cost:</b>		Budget Provision for the entire quarrying period.
	:	Air Quality Sampling = Rs. 40,000/-
	:	Water Quality Sampling = Rs. 40,000/-
	:	Noise Monitoring = Rs. 20,000/-
	:	Ground vibration test = Rs. 20,000/-
<b>Expenditure</b>		
1. Drinking water facility	:	Rs.1,50,000/-
2. Sanitary Arrangments	:	Rs. 50,000/-
3. Safety kids	:	Rs. 50,000/-
4. Water sprinkling	:	Rs. 1,50,000/-
5. Afforestation	:	Rs. 50,000/-
<b>Total=</b>	:	<b>Rs. 5,70,000/-</b>
<b>Total Project Cost (A+B+C)</b>		<b>Rs. 83,68,600/-</b>
<b>CSR Cost(2% of Total Project Cost)</b>		<b>Rs. 1,67,372/-</b>

#### 11.0 Mine Closure Plan:

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





**12.0 Any Other Details Intend to Furnish by the Applicant:**

- (i) Permission will be obtained from the District Mines Office to extract the Rough Stone from the Boundary barriers and for slopes.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavor every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) The Mining Plan is prepared by incorporating the conditions stipulated in the precise area communication issued and relevant mining laws in force.
- (v) Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

Prepared by

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

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

Place : Salem  
Date : 07.05.2022

RoC No. 50/2022 (Mines) Date: 05-2022  
**This Mining Plan is approved based on instruction 1540-2012 given by the Commissioner of Geology and Mining, Chennai vide Letter No. 306/127/2012 dated 19.11.2012 and amendments made by the District Collector, Geological Districts Area Communication Letter No. ....50..../2022... ..(Mines), dated ..04.05.2022.**

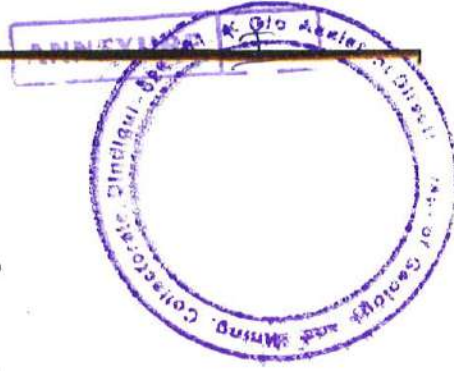
  
**Assistant Director,**  
**Geology and Mining**  
**Dindigul.**

அனுப்புநர்

செ.பூர்ணவேல், எம்.எஸ்.சி.,  
உதவி இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திண்டுக்கல்

பெறுநர்

திரு.த.குமரேஷ்,  
த/பெ.லேட்.தங்கமுத்து,  
மதுக்கரை வழி,  
கோயம்புத்தூர்



ந.க.எண்.50/2022 (கனிமம்), நாள்: .04.2022

பொருள்: கனிமங்களும் சுரங்கங்களும் - சிறுவகைக் கனிமம் - திண்டுக்கல் மாவட்டம் - திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமம் மாவட்டம் - திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமம் கொண்டான் கிராமம், புல எண். 388/1ஏ (பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் கல் மற்றும் கிராவல் குவாரி செய்ய அனுமதி கோரி திரு.த.குமரேஷ் என்பவர் விண்ணப்பித்தது - புலத்தணிக்கை மேற்கொள்ளப்பட்டது - குத்தகை உரிமம் வழங்க உகந்த புலம் (Precise Area) என தீர்மானித்து ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் சான்றிதழ் சமர்ப்பிக்க கோருதல் - தொடர்பாக.

- பார்வை:
1. திரு.த.குமரேஷ், த/பெ.லேட்.தங்கமுத்து, மதுக்கரை வழி, கோயம்புத்தூர் என்பவரது மனு நாள்: 31.01.2022
  2. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்: 31.01.2022 (பழனி வருவாய் கோட்டாட்சியருக்கு முகவரியிடப்பட்டது)
  3. பழனி வருவாய் கோட்டாட்சியர் கடித ந.க.எண். 1195/2022/அ7 நாள்: 16.03.2022
  4. திரு.த.குமரேஷ், த/பெ.லேட்.தங்கமுத்து, மதுக்கரை வழி, கோயம்புத்தூர் என்பவரது திருத்திய கடிதம் நாள்: 01.04.2022
  5. உதவி இயக்குநர் (கனிமம்) திண்டுக்கல் புலத்தணிக்கை அறிக்கை நாள்: 28.04.2022
  6. அரசாணை எண்: 79, தொழில் (எம்.எம்.சி1)துறை, நாள்: 6.4.2015
  7. அரசாணை எம்.எஸ்.எண்.169, தொழில்(எம்.எம்.சி1) துறை நாள்: 04.08.2020

பார்வை 1-ல் திரு.த.குமரேஷ் என்பவர் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி எண்.19(1)ன்படி திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமம் கொண்டான் கிராமம், புல எண். 388/1ஏ (பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் கல் மற்றும் கிராவல் குவாரி குத்தகை அனுமதி வழங்க கோரி கீழ்க்கண்ட ஆவணங்களை இணைத்து விண்ணப்பித்துள்ளார்.

1. விண்ணப்பக் கட்டணம் ரூ.1500/- செலுத்தியதற்கான சலான்.
2. விண்ணப்பித்துள்ள புலம் தவிர வேறு குவாரி ஏதுமில்லை என்பதற்கும், வருமானவரி செலுத்தும் அளவிற்கு வருமானம் ஈட்டும் வருவாய்ப் பிரிவை சேர்ந்தவர் அல்ல என்பதற்கும் கனிமக் கட்டணமாக செலுத்த வேண்டிய நிலுவை ஏதுமில்லை என்பதற்கும் சான்றொப்ப அலுவலர் மூலமாக எழுதி தரப்பட்ட உறுதிமொழி ஆவணம்.
3. சிட்டா நகல், அ" பதிவேடு நகல், புல வரைபட நகல், தொகுப்பு வரைபட நகல் மற்றும் அடங்கல் நகல்.

மேற்படி விண்ணப்பத்தின் மீது பழனி வருவாய் கோட்டாட்சியரிடம் பார்வை 2-ல் காணும் கடிதத்தில் பரிந்துரை அறிக்கை கோரப்பட்டதை தொடர்ந்து பார்வை 3-ல் காணும் கடிதத்தில் பழனி வருவாய் கோட்டாட்சியர் விண்ணப்பதாரருக்கு குத்தகை உரிமம் வழங்குவது குறித்து தனது பரிந்துரை அறிக்கையினை பின்வருமாறு சமர்ப்பித்துள்ளார்.

திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமங்கொண்டான் கிராமம், புல எண்.388/1ஏ-ல் 6.29.0 ஹெக்டேர் புன்செய் நிலம் பட்டா எண்.643-ல் சேனாபதி மகன் கார்த்திக்கேயன்-1, கார்த்திகேயன் மனைவி அஸ்வினி பாலா-2, ஆண்டனி ரபேல், சசிகுமார், ஷாஜ்-ஆதித் ப்ரு மெட்டல்ஸ்-3 ஆகிய பெயர்களில் கூட்டாக பட்டா தாக்கலாகியுள்ளது என்றும், குத்தகை ஒப்பந்தப்பத்திரம் எழுதிக் கொடுப்பவர்களின் பெயரில் பட்டா மாறுதல் செய்யப்பட்டுள்ளது என்றும், கல்குவாரி செய்ய அனுமதி கோரும் புலத்தின் புலப்பட சுவடியில் வழியாக ஓடை குறியீடு உள்ளது என்றும், ஆனால் நிலவியலில் ஓடை இல்லை என்றும், மேற்படி புலத்தின் தென்பகுதியில் ஓடைக்கு வழிவகை செய்துள்ளார் என்றும், உரிமம் கோரும் நிலத்தினைச் சுற்றி 300 மீட்டர் சுற்றளவிற்குள் குடியிருப்புகள், அங்கீகரிக்கப்பட்ட வீட்டுமனைகள், வழிபாட்டுதலங்கள் மற்றும் புராதான சின்னங்கள் ஏதுமில்லை என்றும், உரிமம் கோரியுள்ள நிலத்தைச் சுற்றிலும் 50மீட்டர் சுற்றளவிற்குள் உயர் மற்றும் தாழ்வழுத்த மின்கம்பிகள், தந்திக்கம்பிகள், சாலை, வண்டிப்பாதை ஏதும் இல்லை என்றும், கல்குவாரி செய்ய அனுமதி கோரும் நிலத்தின் ஒரு பகுதியில் ஏற்கனவே வேறொரு நபருக்கு கல்குவாரி உரிமம் வழங்கப்பட்டு, குவாரி செயல்பாட்டில் இருந்து வருகிறது என்றும், உரிமம் கோரியுள்ள நிலம் பஞ்சமர் நிலமோ, ஒப்படை வழங்கப்பட்ட நிலமோ இல்லை என்றும், மனுதாரருக்கு உரிமம் வழங்குவது தொடர்பாக கிராமத்தில் அ1 அறிவிக்கை பிரசுரம் செய்யப்பட்டதில் ஆட்சேபனை ஏதும் வரப்பெறவில்லை என்றும், அனுமதி கோரும் நிலத்தின் பேரில் வழக்கு ஏதும் நிலுவையில் இல்லை என்றும், எனவே, விண்ணப்பதாரர் திரு.த.குமரேஷ் என்பவருக்கு பழனி வட்டம், கொழுமங்கொண்டான் கிராமம், புல எண். 388/1ஏ (பகுதி)-ல் 2.33.10 ஹெக்டேரில் கனிம விதிகள் மற்றும் அரசின் விதிகளுக்குப்பட்டு சாதாரணகல் மற்றும் கிராவல் குவாரிப்பணி செய்ய அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

இந்நிலையில் பார்வை 4-ல் காணும் கடிதத்தில் விண்ணப்பதாரர் திரு.த.குமரேஷ் என்பவர் தான் விண்ணப்பித்துள்ள புல எண்.388/1ஏ-ன் மொத்தபரப்பு 6.29.0 ஹெக்டேரில் 2.33.10 ஹெக்டேர் பரப்பில் குவாரிப்பணி செய்ய விண்ணப்பித்திருந்ததாகவும், அதில் புல எண்.388/1ஏ-னை 388/1ஏ1 மற்றும் 388/1ஏ2 என பிரிக்கப்பட்டுள்ளதாகவும், தற்போது புதிதாக பிரிக்கப்பட்டுள்ள புல எண்.388/1ஏ2-ன் மொத்தப்பரப்பு 4.26.70 ஹெக்டேர் பரப்பில் 2.33.10 ஹெக்டேர் பரப்பில் கல்குவாரி செய்ய அனுமதிக்குமாறு கோரியுள்ளார்.

மேற்படி புலங்களை உதவி இயக்குநர்(கனிமம்) அவர்கள் 28.04.2022 அன்று புலத்தணிக்கை செய்து பார்வை 5-ல் கண்டுள்ளபடி அறிக்கையினை பின்வருமாறு சமர்ப்பித்துள்ளார்.

அவ்வறிக்கையில் திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமங்கொண்டான் கிராமம், புல எண். 388/1ஏ2 (பகுதி)-ல் 2.33.10 ஹெக்டேர் நிலம் பட்டா எண்.1369-ன்படி தி/ள்.ஆதித் ப்ரு மெட்டல் நிறுவனத்தின் பெயரில் பட்டா தாக்கலாகியுள்ளது என்றும், மேலும் விண்ணப்ப புலமானது சமதளமாக உள்ளதாகவும் மேற்படி புலத்தில் உள்ள பாறைகள் சார்னகைட் வகையைச் சார்ந்தது என்பதை அறிய முடிவதாகவும், இவை சாதாரண கற்கள், ஜல்லி, எம்.சாண்ட் (Blue Metals) ஆகியவை தயாரிக்க உகந்த பாறைகள் என்றும், மனு செய்துள்ள புலத்தில் பாறைப்படிவங்களின் தலப்போக்கு வடக்கு-தெற்கு திசையில் அமைந்துள்ளது என்றும், மேற்படி புலத்தில் 0-1 மீ வரை மண் படிந்துள்ளது என்றும், 1-4மீ

சிதைவடைந்த பாறைகள் (Weathered Rock) மற்றும் 4 மீ-க்கு கீழே சார்னடைக் வகையைச் சார்ந்த பாறைகள் மெல்லிய இணைப்புகளுடன் காணப்பட்டது என்றும், விண்ணப்ப புலங்களின் வடக்கு மற்றும் வடமேற்கு பகுதியில் திரு.கு.ரத்தினமூர்த்தி மற்றும் திருமதி.பரிமளம் ஆகியோருக்கு சாதாரண கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் வழங்கப்பட்டு குத்தகை உரிமம் முடிவடைந்த அரசு புறம்போக்கு குவாரிகள் அமைந்துள்ளது என்றும், விண்ணப்ப புலத்தின் கிழக்குப் பகுதியில் புல எண்.388/1ஏ(பகுதி)-ல் 1.98.0 ஹெக்டேர் பட்டா நிலத்தில் திரு.எஸ்.கார்த்திகேயன் என்பவருக்கு திண்டுக்கல் மாவட்ட ஆட்சித் தலைவர் அவர்களின் செயல்முறை ஆணை ந.க.எண்.348/2017 (கனிமம்) நாள்: 14.06.2018-ன்படி 14.06.2018 முதல் 13.06.2023 வரை ஐந்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டு குத்தகை காலம் நடைமுறையில் உள்ளது என்றும், விண்ணப்ப புலங்களைச் சுற்றி 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், வீட்டுமனைகள், வழிபாட்டுதலங்கள், புராதான சின்னங்கள் ஏதும் இல்லை. 50மீட்டர் சுற்றளவில் உயரழுத்த/தாழ்வழுத்த மின்கம்பிகள், சாலை, வண்டிப்பாதை எதுவும் இல்லை என்றும், கல்குவாரி செய்ய அனுமதி கோரும் புலத்தின் புலப்படச் சுவடியின் வழியாக ஓடை குறியீடு உள்ளது. ஆனால் நிலவியலில் ஓடை இல்லை என்றும், விண்ணப்பதாரர் மேற்படி புலத்தின் தென்பகுதியில் ஓடைக்கு வழிவகை செய்துள்ளார் என்றும், மேற்படி புலத்தின் நான்குமால் எல்லை விபரம் பின்வருமாறு:

வடக்கு: புல எண். 373- அரசு புறம்போக்கு குத்தகை உரிமம் முடிவடைந்த குவாரி  
 தெற்கு: புல எண். 388/2 - பூமிதான நிலம்  
 கிழக்கு: புல எண். 388/1ஏ- நடைமுறையில் உள்ள குவாரி  
 மேற்கு: புல எண். 373 அரசு புறம்போக்கு குத்தகை உரிமம் முடிவடைந்த குவாரி

எனவே, திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழுமம் கொண்டான் கிராமம், பட்டா புல எண். 388/1ஏ2 (பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்.19(1) மற்றும் 20-ன்படி சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க திரு.த.குமரேஷ் என்பவருக்கு 5 ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்குப்பட்டு குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

நிபந்தனைகள்:

1. விண்ணப்ப புலங்களின் அருகில் உள்ள பட்டா நிலங்களுக்கு முறையே 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
2. விண்ணப்ப புலங்களின் வடக்கு மற்றும் வடமேற்குப் பகுதியில் அமைந்துள்ள அரசு புறம்போக்கு நிலத்திற்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
3. விண்ணப்ப புலங்களின் தெற்கு பக்கமாக செல்லும் ஓடைக்கு மற்றும் பூமிதான நிலத்திற்கு 50மீட்டர் பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. விண்ணப்ப புலங்களின் மேற்கு பக்கமாக செல்லும் வண்டிப்பாதைக்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
5. பொதுமக்களுக்கும் அருகிலுள்ள நிலங்களுக்கும் எவ்வித பாதிப்பும் ஏற்படுத்தக் கூடாது.
6. குவாரிப்பணி தொடங்குவதற்கு முன்பாக குவாரியினை சுற்றி முள்கம்பிவேலி (Wire Fencing) அமைத்து குவாரிப்பணி தொடங்கவேண்டும்.
7. முறைப்படியும் விஞ்ஞானப்பூர்வமாகவும் குவாரிப்பணி செய்யவேண்டும்.
8. பாறைகளை தகர்க்க கைத்துளைப்பான்களை கொண்டு பாறைகளை துளையிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
9. சான்றிதழ் பெறப்பட்ட போர்மென், வெடிப்பாளர் மற்றும் சுரங்க மேலாளர் மூலம் முறையே குவாரிப்பணி செய்யப்பட வேண்டும்.

10. குவாரிப்பணி தொடங்குவதற்கு முன் சுரங்க பாதுகாப்பு இயக்குநர், சென்னை அவர்களுக்கு தகவல் தெரிவிக்கப்பட வேண்டும்.

இந்நேரில் பார்வை 6-ல் காணும் அரசாணையில் சிறுகனிமக் குவாரிகளுக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்: 41-ன்படி வரைவு சுரங்கத்திட்ட அறிக்கை மற்றும் 42-ன்படி மேற்படி குத்தகை உரிமம் கோரிய புலத்தில் குவாரிப்பணி செய்வதால் சுற்றுப்புறச் சூழலுக்கு மாசுபடுதல் தொடர்பாக, மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்தின் தடையின்மைச் சான்று பெற்று குவாரி குத்தகை உரிமம் வழங்க வேண்டும் என அறிவுறுத்தப்பட்டு நடைமுறையில் செயல்படுத்த தெளிவுரை வழங்கப்பட்டுள்ளது.

1) மேற்படி அரசாணையில் பத்தி 7 மற்றும் 8-ல் குறிப்பிட்டபடி மாவட்ட ஆட்சித்தலைவர் மூலம் குத்தகை வழங்க கருதப்பட்ட பரப்பிற்கு வரைவு சுரங்கத்திட்ட அறிக்கை சமர்ப்பிக்க அறிவுறுத்திய கடிதம் குத்தகைதாரரால் பெறப்பட்ட நாளிலிருந்து மூன்று மாதத்திற்குள் சுரங்கத் திட்ட அறிக்கை தயார் செய்து மூன்று பிரதிகள் மாவட்ட அளவில் உள்ள துணை இயக்குநர்/உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அலுவலகத்தில் சமர்ப்பிக்கப்பட வேண்டும். குத்தகைதாரர் மூலம் பெறப்பட்ட வரைவு சுரங்கத்திட்ட அறிக்கையினை துணை இயக்குநர் / உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை பார்வை 6-ல் பத்தி 7(IV)-ல் குறிப்பிட்டபடி ஆய்வு செய்து ஒப்புதல் செய்து குத்தகைதாரருக்கு வழங்கவேண்டும்.

2) குத்தகைதாரர் ஏற்பளிக்கப்பட்ட வரைவு சுரங்கத்திட்ட அறிக்கை பெறப்பட்டவுடன் அத்துடன் கீழ்க்கண்ட ஆவணங்களை இணைத்து மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணைய அலுவலகத்திற்கு விண்ணப்பித்து தடையின்மைச் சான்று பெற்று சமர்ப்பிக்க வேண்டும்.

- ௧) படிவம்-I(Environment Impact Assessment Authority Notification 2006)
- ஆ) An Environment impact Assessment Report
- இ) An Approved Mining Plan, by the Competent Authority

3) ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்தின் தடையில்லாச் சான்று பெற்ற பின்னர் அதனடிப்படையில் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி எண்.19(1) -ன்படி திண்டுக்கல் புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநரால் மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது குறித்து இறுதி ஆணை பிறப்பிக்க முடிவு எடுக்கப்பட வேண்டும்.

பார்வை 7-ல் காணும் அரசாணையின்படி 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண்.19(1)-ன்படி பட்டா நிலங்களில் உள்ள சிறுகனிமங்களை வெட்டியெடுத்துச் செல்ல குத்தகை உரிமம் வழங்கி ஆணையிடுவதற்கு சம்மந்தப்பட்ட உதவி இயக்குநர்/ துணை இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை அவர்களுக்கு அதிகாரம் வழங்கி ஆணையிடப்பட்டுள்ளது.

அ) எனவே, பழனி வருவாய் கோட்டாட்சியர் மற்றும் திண்டுக்கல் மாவட்டப் புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநர் ஆகியோரின் பரிந்துரை அறிக்கையின்படி திண்டுக்கல் மாவட்டம், பழனி வட்டம், கொழும்பு கொண்டான் கிராமம், பட்டா புல எண். 388/1-2(பகுதி)-ல் 2.33.10 ஹெக்டேர் பரப்பில் திரு.த.குமரேஷ் என்பவருக்கு 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதி 19(1) மற்றும் 20-ன்படி ஐந்து ஆண்டுகளுக்கு சாதாரண கல் மற்றும் கிராவல் குவாரி செய்ய கீழ்க்கண்ட நிபந்தனைகளுக்குப்பட்டு குத்தகை உரிமம் வழங்க உகந்த புலம் (Precise Area Communication) என கருதப்படுகிறது.

நிபந்தனைகள்:-

1. விண்ணப்ப புலங்களின் அருகில் உள்ள பட்டா நிலங்களுக்கு முறையே 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
2. விண்ணப்ப புலங்களின் வடக்கு மற்றும் வடமேற்குப் பகுதியில் அமைந்துள்ள அரசு புறம்போக்கு நிலத்திற்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
3. விண்ணப்ப புலங்களின் தெற்கு பக்கமாக செல்லும் ஓடைக்கு மற்றும் பூமிதான நிலத்திற்கு 50மீட்டர் பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. விண்ணப்ப புலங்களின் மேற்கு பக்கமாக செல்லும் வண்டிப்பாதைக்கு 10மீட்டர் பாதுகாப்பு இடைவெளி விடவேண்டும்.
5. பொதுமக்களுக்கும் அருகிலுள்ள நிலங்களுக்கும் எவ்வித பாதிப்பும் ஏற்படுத்தக் கூடாது.
6. குவாரிப்பணி தொடங்குவதற்கு முன்பாக குவாரியினை சுற்றி முள்கம்பிவேலி (Wire Fencing) அமைத்து குவாரிப்பணி தொடங்கவேண்டும்.
7. முறைப்படியும் விஞ்ஞானப்பூர்வமாகவும் குவாரிப்பணி செய்யவேண்டும்
8. பாறைகளை தகர்க்க கைத்துளைப்பான்களை கொண்டு பாறைகளை துளையிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
9. சான்றிதழ் பெறப்பட்ட போர்மென், வெடிப்பாளர் மற்றும் சுரங்க மேலாளர் மூலம் முறையே குவாரிப்பணி செய்யப்பட வேண்டும்.
10. குவாரிப்பணி தொடங்குவதற்கு முன் சுரங்க பாதுகாப்பு இயக்குநர், சென்னை அவர்களுக்கு தகவல் தெரிவிக்கப்பட வேண்டும்.
11. 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் விதி எண். 36(1)-க்குட்பட்ட அனைத்து விதிகளும் பொருந்தும்.
12. மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்தின் வழிமுறைகள் படி சுரங்கத்திட்டம் சமர்ப்பிக்கப்பட வேண்டும்.
13. மாநில அளவிலான சுற்றுப்புறச் சூழல் தாக்க மதிப்பீடு ஆணையத்திடமிருந்து தடையில்லா சான்று பெற்று சமர்ப்பிக்கப்பட வேண்டும்.

மேலும் மேற்குறிப்பிட்ட விண்ணப்ப புலத்திற்கு வரைவு சுரங்கத்திட்ட அறிக்கையை இக்கடிதம் கிடைக்கப்பெற்ற நாளிலிருந்து மூன்று மாத காலத்திற்குள் தவறாது தாக்கல் செய்யப்படவேண்டும் மற்றும் ஏற்பளிக்கப்பட்ட வரைவு திட்ட அறிக்கை கிடைக்கப்பெற்ற பின்னர் மாநில அளவிலான சுற்றுப்புறச் சூழல் செயல் விழைவு மதிப்பீடு தடையில்லாச் சான்று பெற்று உரிய காலத்திற்குள் சமர்ப்பிக்க குத்தகைதாரர் கேட்டுக் கொள்ளப்படுகிறார். தவறும்பட்சத்தில் உரிய விதிகளின்படி இறுதி முடிவு எடுக்கப்படும்.

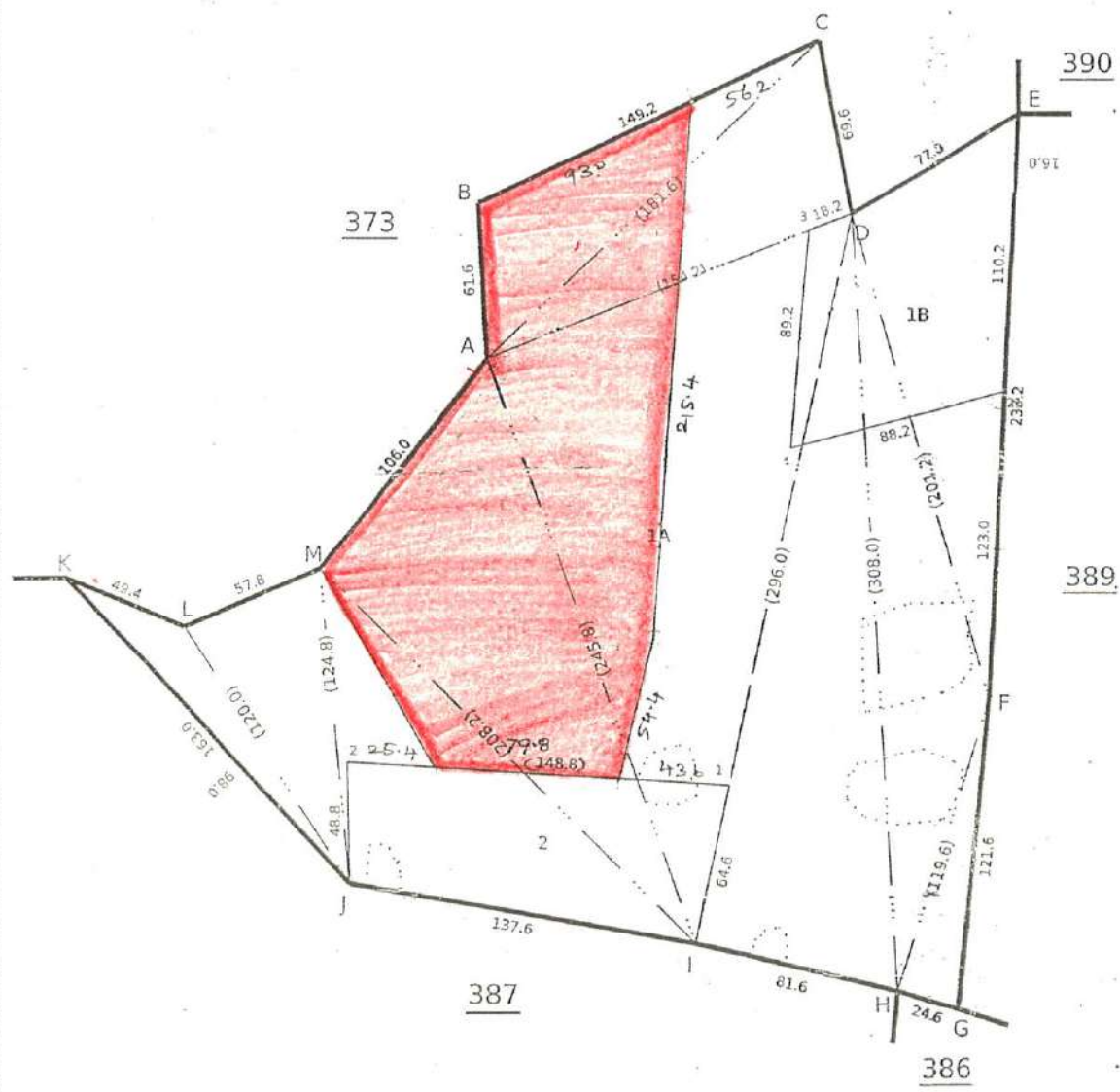
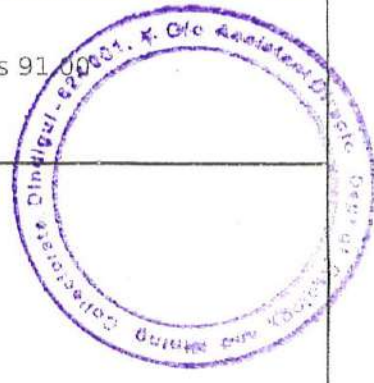
*E. P. P. #15/22*  
உதவி இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திண்டுக்கல்

நகல்:-  
இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
கிண்டி, சென்னை - 32.

*15/1/22*

District : Dindigul  
Taluk : Palani  
Village : Kolumankondan [64]

Survey No : 388  
Area : Hect 07 Ares 91  
Scale : 1 : 2000



Handwritten signature and date: 22/02/22

Handwritten text: 401 சமீ 388/1A-ல் 4 ஏக்கர் க்கு இவ்வளவு நிலம் ஒதுக்கப்படும் எனில்  
அளவு: 2-33-10 (5 ஏக்கர் 76 சமீ)

Handwritten signature and text: சார் ஆலோசனை (நி.அ)  
கோரிக்கையுடைய குறுவட்டம் (200)  
புழை வட்டம்.

LEASE APPLIED AREA



பட்டம் : திண்டுக்கல்

புல எண் : 388

பெயர் : பழனி [21]

பரப்பளவு : எக்டர் 07 ஏர் 91.00

பிரதமம் : கொழுமகொண்டான் [64]

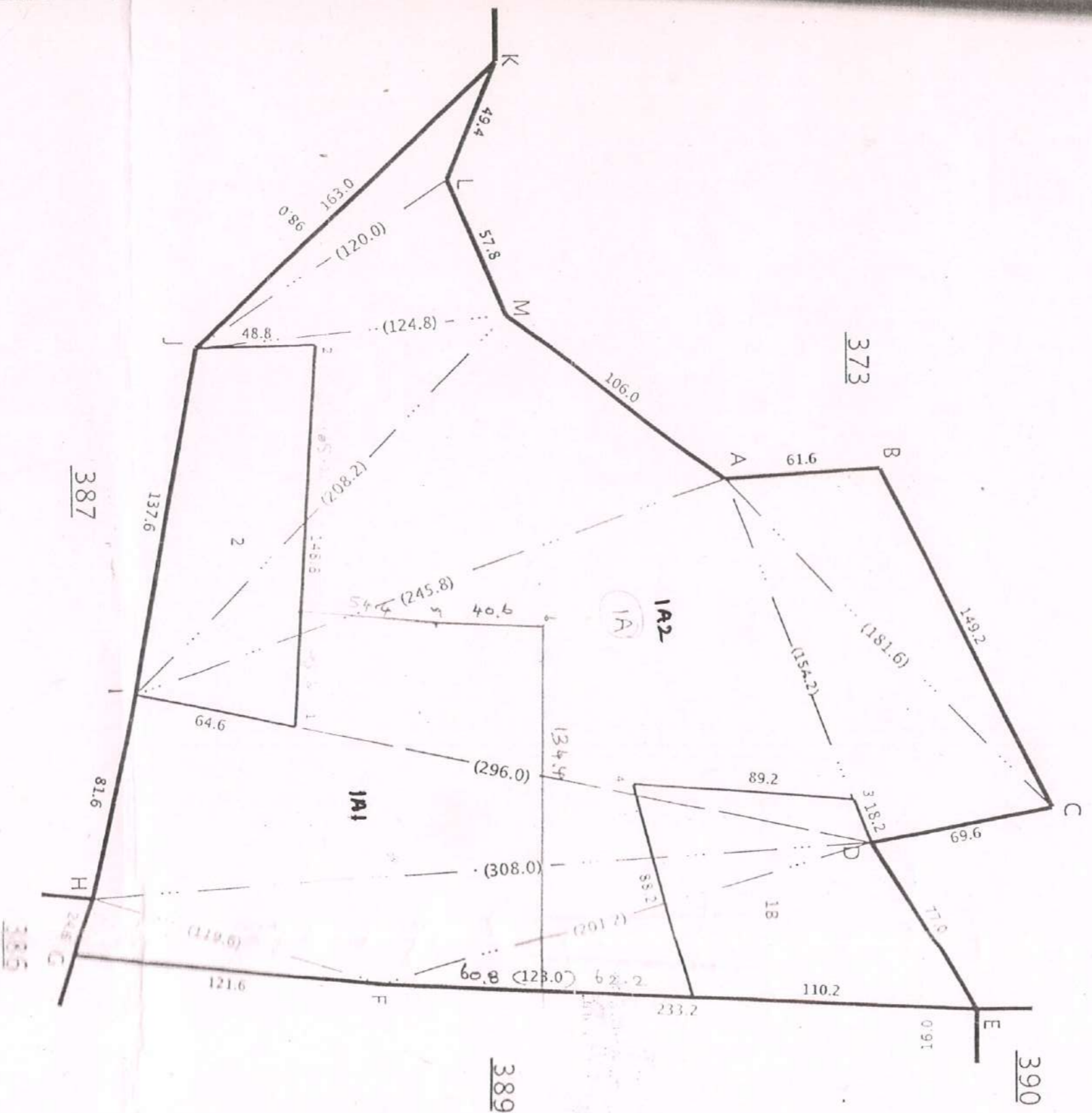
அளவு : 1 : 2000



புது  
2002.30  
2006.70  
6.29.00

வரைவு சரிபார்க்கப்பட்டது  
பரப்பு கணிக்கப்பட்டது

16-2-22  
16-2-22



சுற்றுலா திணைக்கட்சி  
புதுச்சேரி  
16-2-22

அங்கீகரிக்கப்பட்ட கிணறு  
புதுச்சேரி  
16-2-22

12 ஜனவரி 2022

New Subdivision IA1, IA2  
Plot No. Rev. No. 802513/1421  
16-2-22

Handwritten signature

சுற்றுலா திணைக்கட்சி  
புதுச்சேரி  
16-2-22

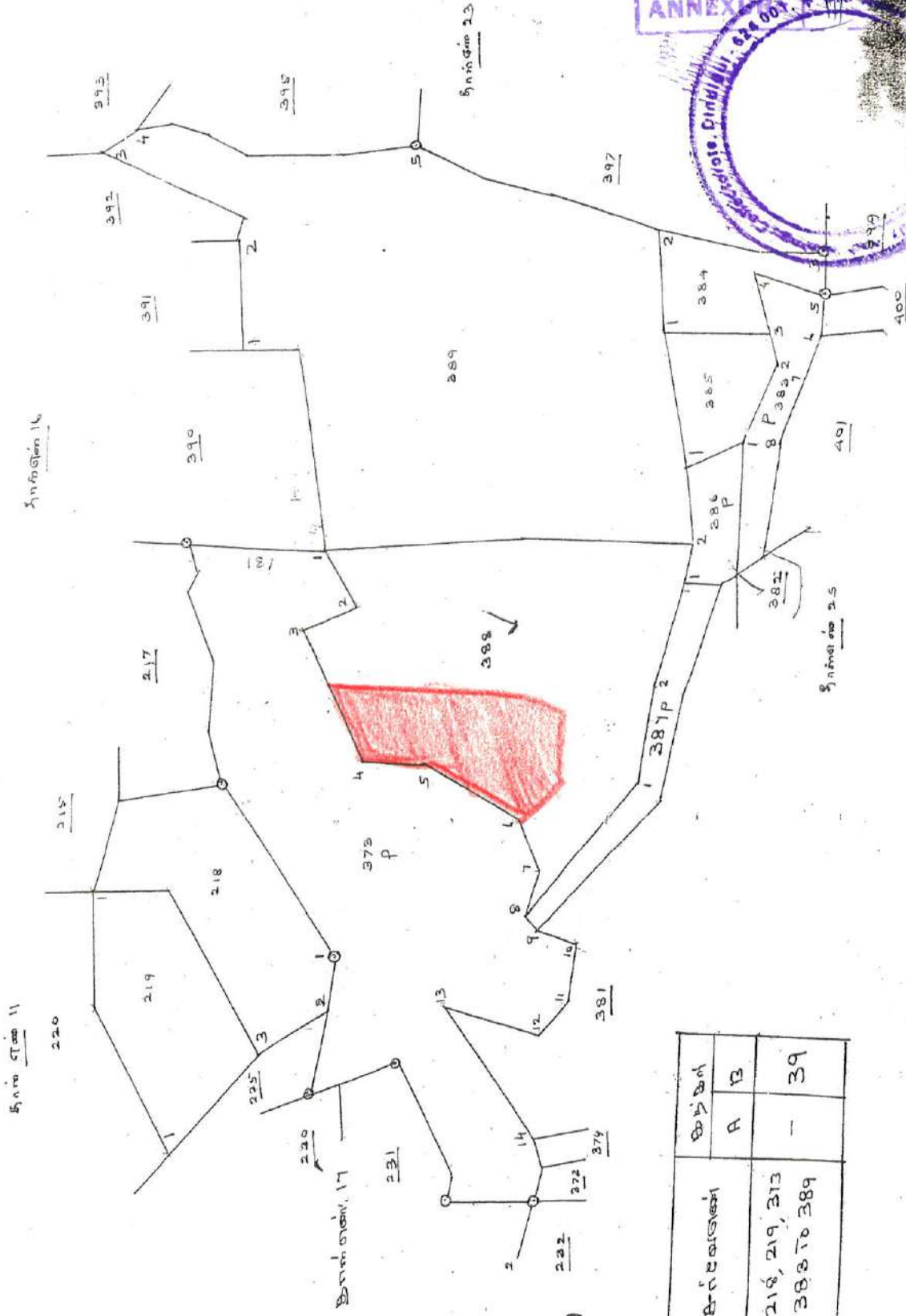


10-11 നമ്പർ ലെസ്: ഉത്തർ അർദ്ധ ഭാഗം  
 12-13 നമ്പർ: പട്ടണി.

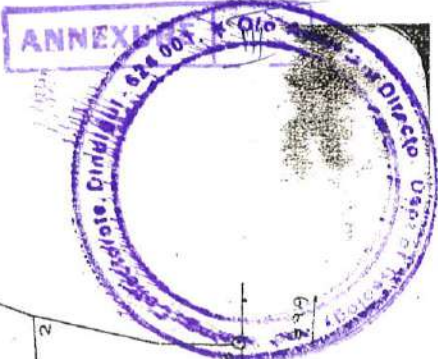
കിഴക്കൻ ഭാഗം: 22.

കിഴക്കൻ ഭാഗം: 7

സംസ്ഥാന: കേരളം



അളവുകൾ	മുഴുവൻ	
	A	B
218, 219, 313	-	39
388 To 389	-	39



LEASE APPLIED AREA

TRUE COPY -  
 H. K. K. K.  
 VILLAGE ADMINISTRATIVE OFFICER  
 07, Kelumankondan Village,  
 Palani Taluk,

M. M. M. M.  
 20-5-04



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திண்டுக்கல்

வட்டம் : பழனி

வருவாய் கிராமம் : கொழுமகொண்டான்

பட்டா எண் : 1369

உரிமையாளர்கள் பெயர்

1. - .. M/S AADITH BLUE METALS



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	
388	1A2	4 - 26.70	5.29	--	--	--	--	2022/0105/13/260116- -2022/13/21/000119SD -- 09-04-2022
		4 - 26.70	5.29					

குறிப்பு2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 13/21/064/01369/140409 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 12-05-2022 அன்று 12:26:32 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

உத்திய மாநில அரசு  
அங்கீகாரம் பெற்ற  
பொது இ-சேவை மையம்  
தமிழ்நாடு.

1431 - ஆம் பசலியில்

கிராமம்

மாவட்டம்

பழனி

கிராமக் கணக்கு

வட்டம் 7 கிராமத்தின் கணக்கு

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு



நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாரருடைய பெயரும் எண்ணும் அல்லது அனுபோக தாரருடைய பெயர்.	சாகுபடியாளரின் பெயர்.	முதல் போகம்.					
(1) நில அளவை எண்.	(2) உட்பிரிவு எண்.	(3) பரப்பு.	(4) தீர்வை.	(5) ஒரு போகம் அல்லது இரு போகம்.			(6)	(7) நிலத்தின் எந்த பகுதி யாவது சாகுபடியாளரால் பயிரிடப்பட்டுள்ளதா.	(8) எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	(9) பயிரின் பெயர்.	(10) பயிரான / அறுவடையான பரப்பு.	(11) உண்மையான பாய்ச்சல் ஆதாரம்.
388	142	4.2670	5.29	1369	கிராமம்							

புகள்கள்

21.06.22  
கிராம நிர்வாக அலுவலர்  
கொழும்புகொண்டார் கிராமம்  
பழனி வட்டம்

இரண்டாம் போகம்.					கிராம அலுவலரின் குறிப்புரை :- (1) புலன்களின் பகுதிகளில் மட்டும் பயிரிடப்பட்ட இனங்களில் லிங்குகள் அளவில். (2) கைப்பற்றில் இல்லாத நிலங்களின் சாகுபடியின் பரப்பு தன்மையும். (3) முந்தைய மாதத்தில் பாய்ச்சல் உதவிப்பற்றி பயிரிடப்பட்டவை என்று பதிவாகியுள்ள நிலங்களுக்கு பிந்தைய மாதங்களில் நீர் பாய்ச்சப்பட்ட விவரங்கள்.	கீழ்க்கண்டவகையில் பயிரிடப்படாத உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்.	(18அ)	(19) பயிர் பார்வையிடும் குறிப்புகள்
(13) எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	(14) பயிரின் பெயர்.	(15) பயிரான / அறுவடையான பரப்பு.	(16) உண்மையான பாய்ச்சல் ஆதாரம்.	(17) விளைச்சல் அளவு விழுக்காடு.				

புகள்கள் (இரண்டாம்)

Handwritten signature at the bottom right of the page.

## அ-பதிவேடு விவரங்கள்



மாவட்டம் : திண்டுக்கல்

வட்டம் : பழனி

கிராமம் : கொழுமகொண்டான்

1. புல எண்	388	9. மண் வயனமும் ரகமும்	8 - 3
2. உட்பிரிவு எண்	1A2	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	388-1A	11. தீர்வை (ரூ - ஹெ)	1.24
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	4 - 26.70
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	5.29
6. நிலத்தின் வகை	பஞ்சை	14. பட்டா எண்	1369
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	0	16. பெயர்	1.M/S AADITH BLUE METALS

## குறிப்பு 1:



1.

மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 160409 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.



ANNEXURE

V(1)



 இந்திய அரசாங்கம்  
Government of India



Kumaresh.T  
Date of Birth/DOB: 03/09/1970  
Male/ MALE



5629 9972 1835  
VID : 9159 7684 2426 7009

எனது ஆதார், எனது அடையாளம்

 Unique Identification Authority of India

Address:  
S/O: Thangamuthu, 2/34, PICHANUR,  
PICHANUR POST, MADUKKARAI VIA,  
Pichanur, Coimbatore,  
Tamil Nadu - 641105



5629 9972 1835  
VID : 9159 7684 2426 7009

1047  help@uidai.gov.in  www.uidai.gov.in

## CHETTINAD CEMENT CORPORATION LTD.

(Regd. Office: RANI SEETHAI HALL BUILDING IV & V FLOORS, 603, ANNA SALAI, MADRAS 600006.)  
WORKS OFFICE: PULIYUR.

21144  
PHONE 22744 | KARUR  
TELE: 21745  
GRAM "CEMENT" Puliyur C.F.  
Telex: 0456-215.  
STD Code: 04324

All Correspondences to  
Kumararajah Muthiah Nagar,  
PULIYUR CEMENT FACTORY POST 639  
(Karur Taluk, Trichy Dt.)

22<sup>nd</sup> September, 1987.

T. RAJU., B.E.,  
MINES MANAGER & DY. GENERAL MANAGER.

CERTIFICATE.

This is to certify that Mr.C.Natarajan has been working as a Geologist from 14-12-1979 to till date. He has been incharge of supervision of day to day functions in respect of Exploration, Preparation of Geological Plans & Sections, Preparation of Mines Plans, and Quality control and other allied mining activities in the following Pits of our Seethainagar Limestone Mines in Anna District.

<u>Name of the Pit.</u>	<u>Average Raising/day.</u>
1. Alambadi Pit.	- 1,700 T.
2. Mallapuram Pit.	- 900 T.
3. Karikkali Pit.	- 150 T.
	-----
Total.	- 2,750 T.
	-----

He has got nearly Eight years of total experience in our Mines in the above supervisory capacity.

for CHETTINAD CEMENT CORPORATION LTD.,



(T. RAJU).

Mines Manager & Dy. General Manager.



## Faculty of Science

The Senate of the Annamalai University hereby makes known that B. Natarajia has been admitted to the Degree of Master of Science (by Examination) in Zoology, he having been certified by duly appointed Examiners at the examination held in April, 1976, to be qualified to receive the same and that he was placed in the First Class.

Given under the seal of the University.

Annamalainagar  
8th December, 1976.

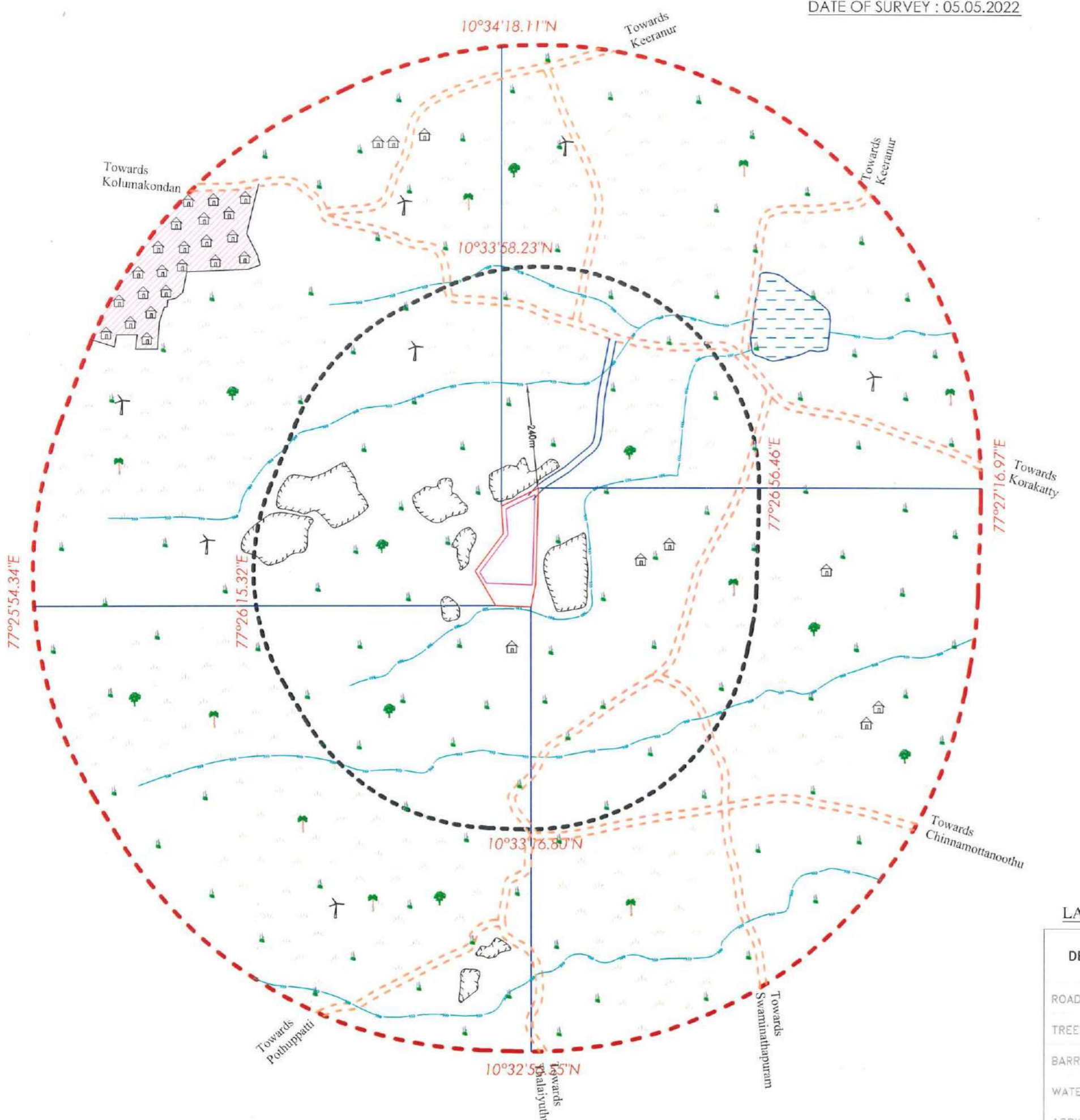
S. Chandrasekh  
Vice-Chancellor.





PLATE NO: I
DATE OF SURVEY : 05.05.2022
<b>APPLICANT:</b> THIRU. T.KUMARASETHI, S/o. (LATE) THANGAM, MADUKKARAI VIA, COIMBATORE DISTRICT.
<b>QUARRY LEASE APPLIED AREA:</b> S.F.NO : 388/1A2 (P), EXTENT : 2.33.10 Ha, VILLAGE : KOLUMANKONDAN, TALUK : PALANI, DISTRICT : DINDIGUL.
<b>INDEX</b>
Q. L. A. AREA : ●
TOPO SHEET NO : 58 F/ 06
LATITUDE : 10°33'33.00"N to 10°33'41.74"N
LONGITUDE : 77°26'32.44"E to 77°26'37.19"E
<b>LOCATION PLAN</b>
NOT TO SCALE
<b>PREPARED BY :</b> THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT
 C.N.ATARAJAN, M.Sc., M.Phil., RECOGNIZED QUALIFIED PERSON RQP/MAS/004/87/A

PLATE NO: IA  
 DATE OF SURVEY : 05.05.2022



**APPLICANT:**  
 THIRU. T.KUMARESH,  
 S/o. (LATE) THANGAMUTHU,  
 MADUKKARAI VIA,  
 COIMBATORE DISTRICT.

**QUARRY LEASE APPLIED AREA:**  
 S.F.NO : 388/1A2 (P),  
 EXTENT : 2.33.10 Ha,  
 VILLAGE : KOLUMANKONDAN,  
 TALUK : PALANI,  
 DISTRICT : DINDIGUL.



**INDEX**

TOPO SHEET NO : 58 F/ 06  
 LATITUDE : 10°33'33.00"N to 10°33'41.74"N  
 LONGITUDE : 77°26'32.44"E to 77°26'37.19"E

- Q.L.APPLIED AREA
- 7.5m, 10m & 50m SAFE.DISTANCE
- 500M RADIUS
- 1KM RADIUS
- APPROACH ROAD
- PANCHAYAT ROAD
- BARREN LAND
- TREES
- SEASONAL AGRICULTURE
- QUARRY PIT
- ODAI
- TANK
- HABITATIONS
- WIND MILL

**LAND USE PATTERN**

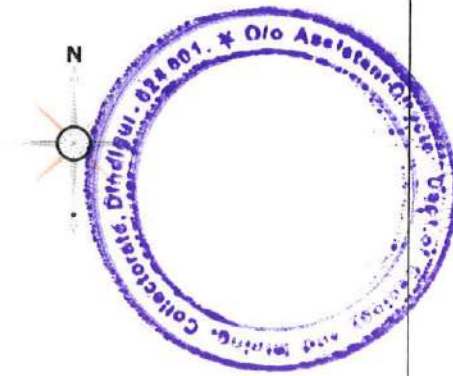
DESCRIPTION	AREA IN (%)
ROAD	05
TREES	17
BARREN LAND	38
WATER BODIES	10
AGRICULTURAL LAND	30

**ENVIRONMENTAL PLAN**

SCALE 1: 10,000

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

*C. Natarajan*  
 C.NATARAJAN, M.Sc, M.Phil.,  
 QUALIFIED PERSON



**PLATE NO: IB**  
 DATE OF SURVEY : 05.05.2022

**APPLICANT:**  
 THIRU. T.KUMARESH,  
 S/o. (LATE) THANGAMUTHU,  
 MADUKKARAI VIA,  
 COIMBATORE DISTRICT.

**QUARRY LEASE APPLIED AREA:**  
 S.F.NO : 388/1A2 (P),  
 EXTENT : 2.33.10 Ha,  
 VILLAGE : KOLUMANKONDAN,  
 TALUK : PALANI,  
 DISTRICT : DINDIGUL.

**INDEX**  
 TOPO SHEET NO : 58 F/ 06  
 LATITUDE : 10°33'33.00"N to 10°33'41.74"N  
 LONGITUDE : 77°26'32.44"E to 77°26'37.19"E

- Q.L.APPLIED AREA
- 7.5m, 10m & 50m SAFE.DISTANCE
- 500M RADIUS
- 1KM RADIUS
- APPROACH ROAD
- PANCHAYAT ROAD

**SATELLITE IMAGERY MAP**  
 SCALE 1: 10,000

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

C.NATARAJAN, M.Sc., M.Phil.,  
 QUALIFIED PERSON



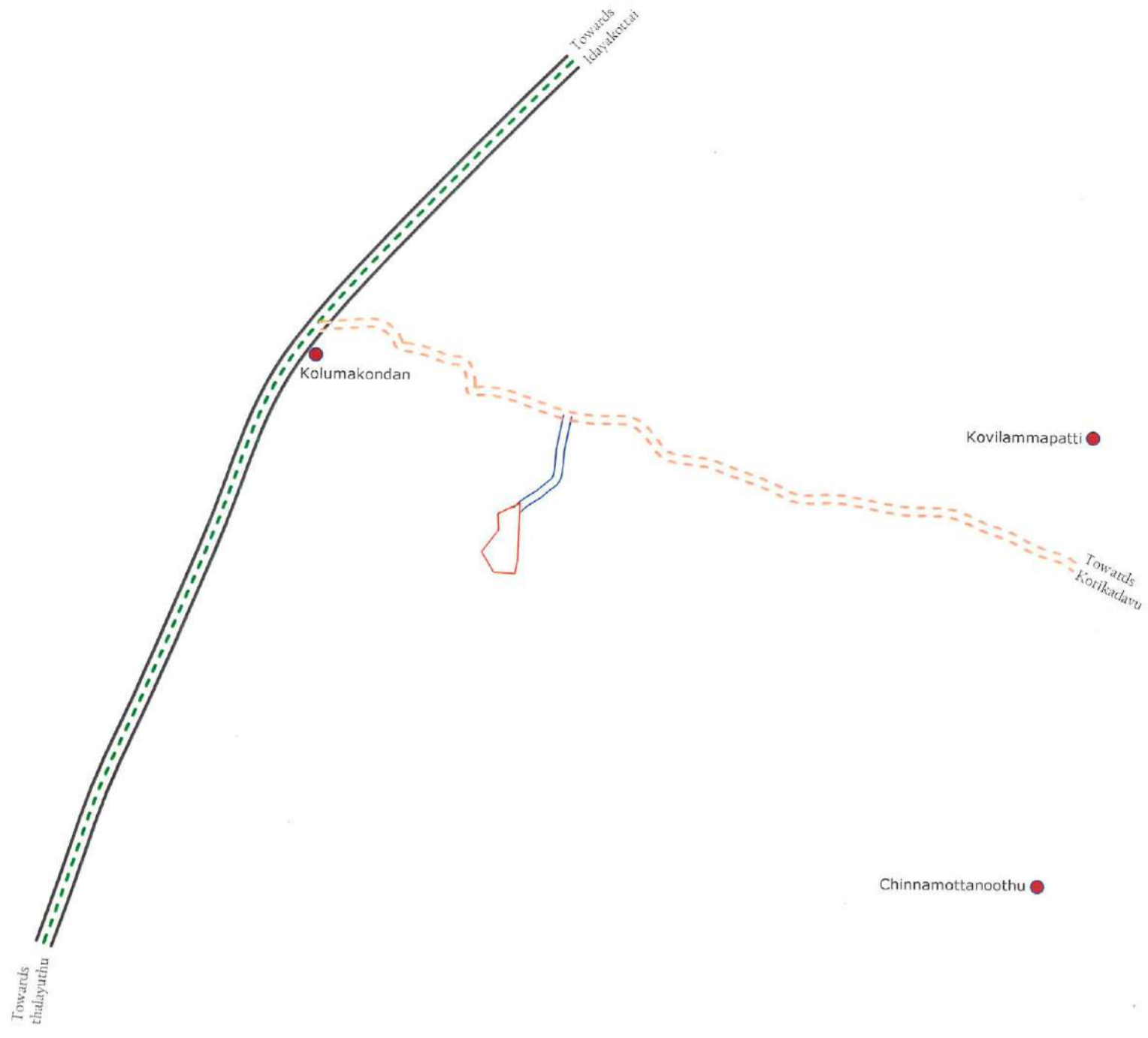
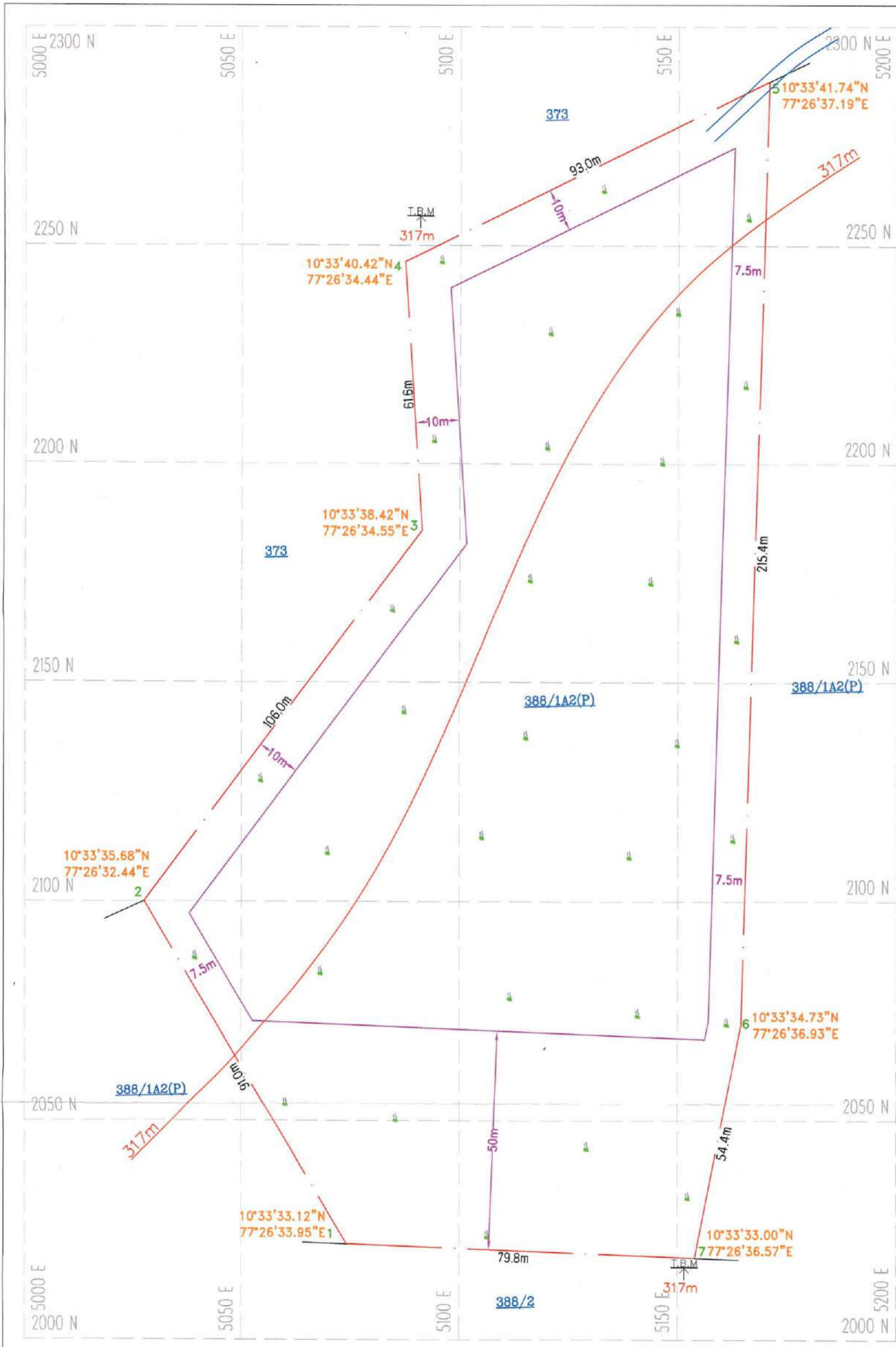


PLATE NO: 10	
DATE OF SURVEY: 05.05.2008	
<b>APPLICANT:</b> THIRU. T.KUMARESH, S/o. (LATE) THANGAMUTHU, MADUKKARAI VIA, COIMBATORE DISTRICT.	
<b>QUARRY LEASE APPLIED AREA:</b> S.F.NO : 388/1A2 (P), EXTENT : 2.33.10 Ha, VILLAGE : KOLUMAKONDAN, TALUK : PALANI, DISTRICT : DINDIGUL.	
<b>INDEX</b>	
Q.L.APPLIED AREA	
APPROACH ROAD	
PANCHAYAT ROAD	
STATE HIGHWAY	
HABITATIONS	
<b>KEY PLAN</b> Not To Scale	
<b>PREPARED BY:</b> THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT	
 C.NATARAJAN, M.Sc., M.Phil., QUALIFIED PERSON	



**PLATE NO-II**  
 DATE OF SURVEY : 05.05.2022

**APPLICANT:**  
 THIRU. T.KUMARESH,  
 S/o. (LATE) THANGAMUTHU,  
 MADUKKARAI VIA,  
 COIMBATORE DISTRICT.

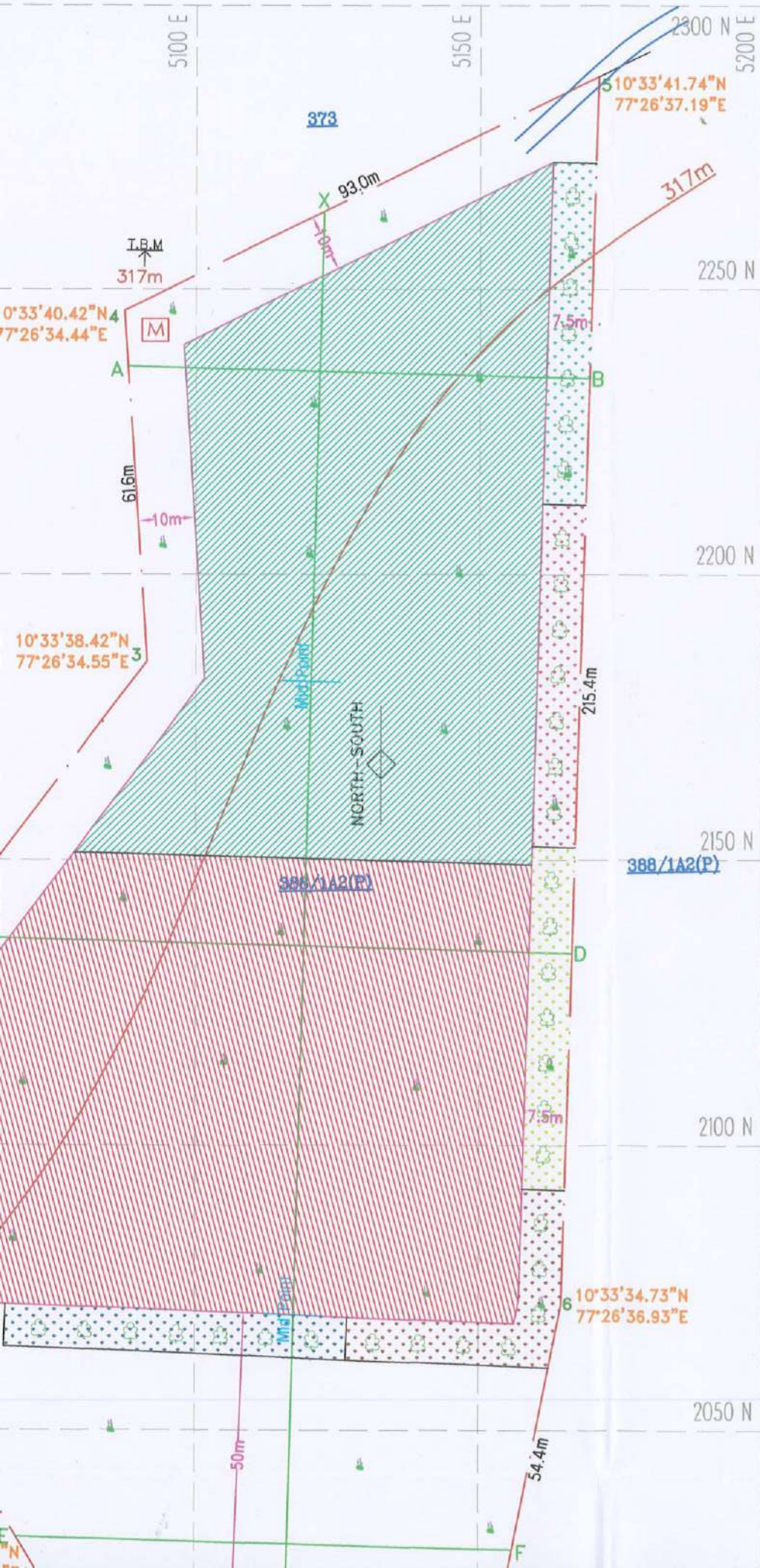
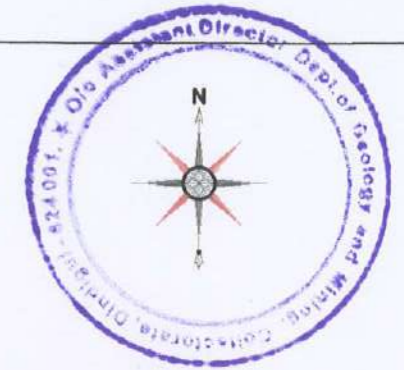
**QUARRY APPLIED LEASE AREA:**  
 S.F.NO : 388/1A2 (P),  
 EXTENT : 2.33.10 Ha,  
 VILLAGE : KOLUMANKONDAN,  
 TALUK : PALANI,  
 DISTRICT : DINDIGUL.

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

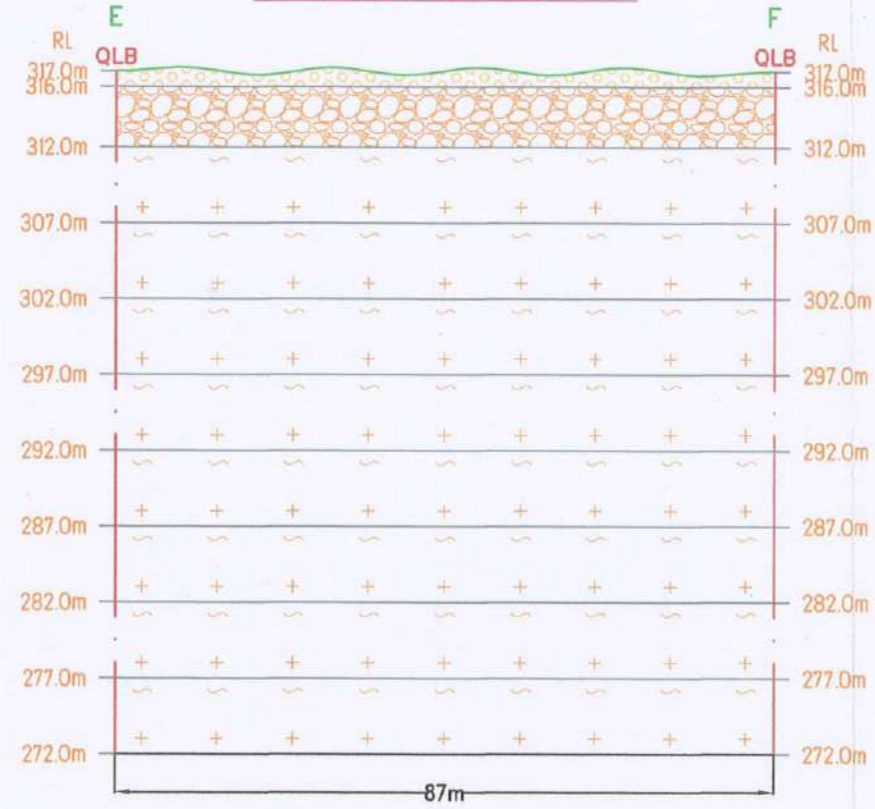
**QUARRY LEASE & SURFACE PLAN**  
 SCALE 1 : 1000

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

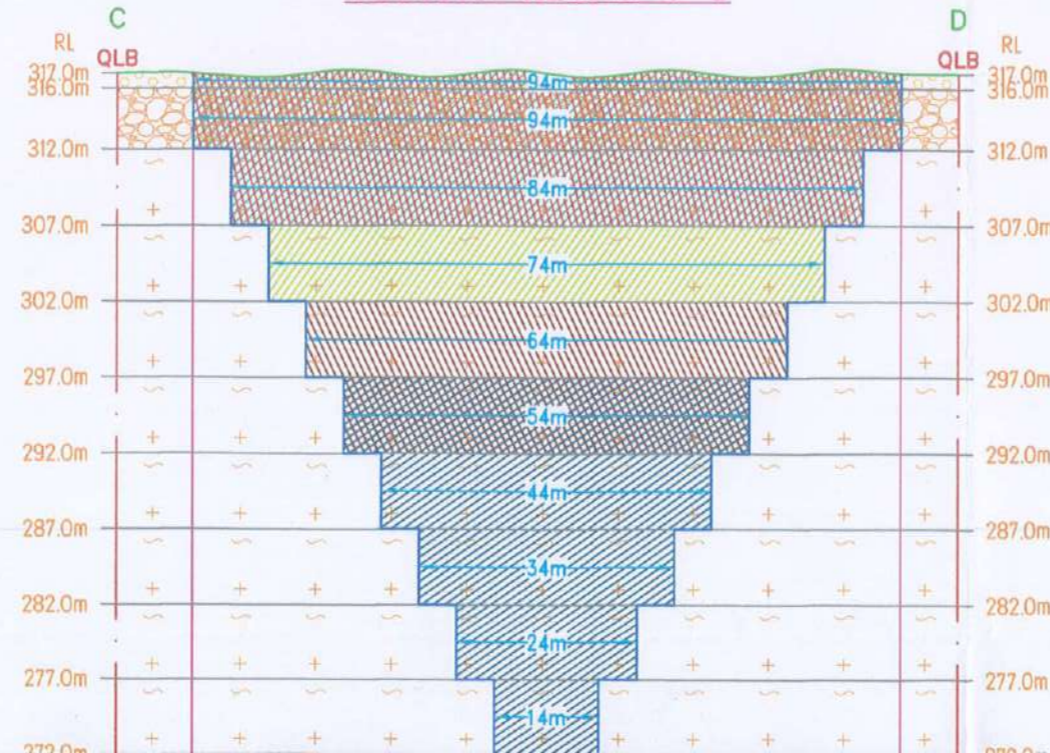
*C. Natarajan*  
 C. NATARAJAN, M.Sc., M.Phil.,  
 QUALIFIED PERSON



**SECTION ALONG E-F**



**SECTION ALONG C-D**



**PRESENT & POST LAND USE PATTERN**

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	NII	1.50.00
INFRASTRUCTURE	NII	0.01.00
ROADS	NII	0.02.00
GREEN BELT	NII	0.25.00
UN-UTILIZED AREA	2.33.10	0.55.10
<b>GRAND TOTAL</b>	<b>2.33.10</b>	<b>2.33.10</b>

- 1st yr Proposed area to be Quarried
- 2nd yr Proposed area to be Quarried
- 3rd yr Proposed area to be Quarried
- 4th yr Proposed area to be Quarried
- 5th yr Proposed area to be Quarried
  
- 1st yr Proposed area to be Planted
- 2nd yr Proposed area to be Planted
- 3rd yr Proposed area to be Planted
- 4th yr Proposed area to be Planted
- 5th yr Proposed area to be Planted

**PLATE NO-III**

DATE OF SURVEY : 05.05.2022

**APPLICANT:**

THIRU. T.KUMARESH,  
S/o. (LATE) THANGAMUTHU,  
MADUKKARAI VIA,  
COIMBATORE DISTRICT.

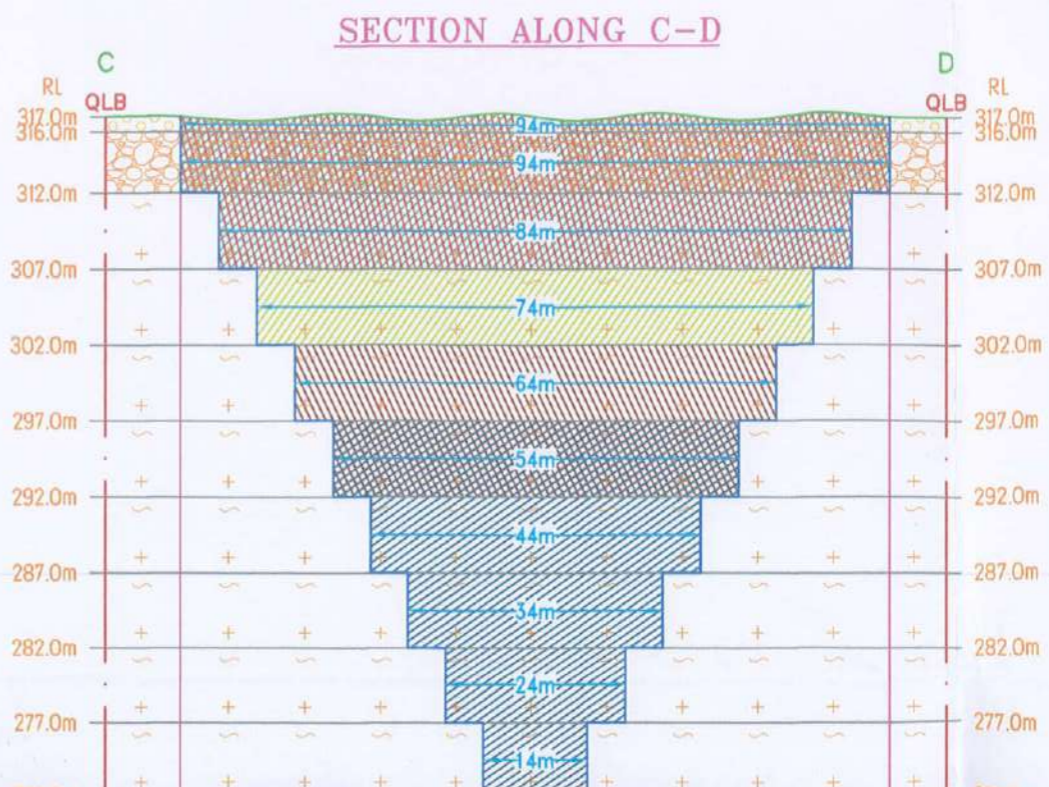
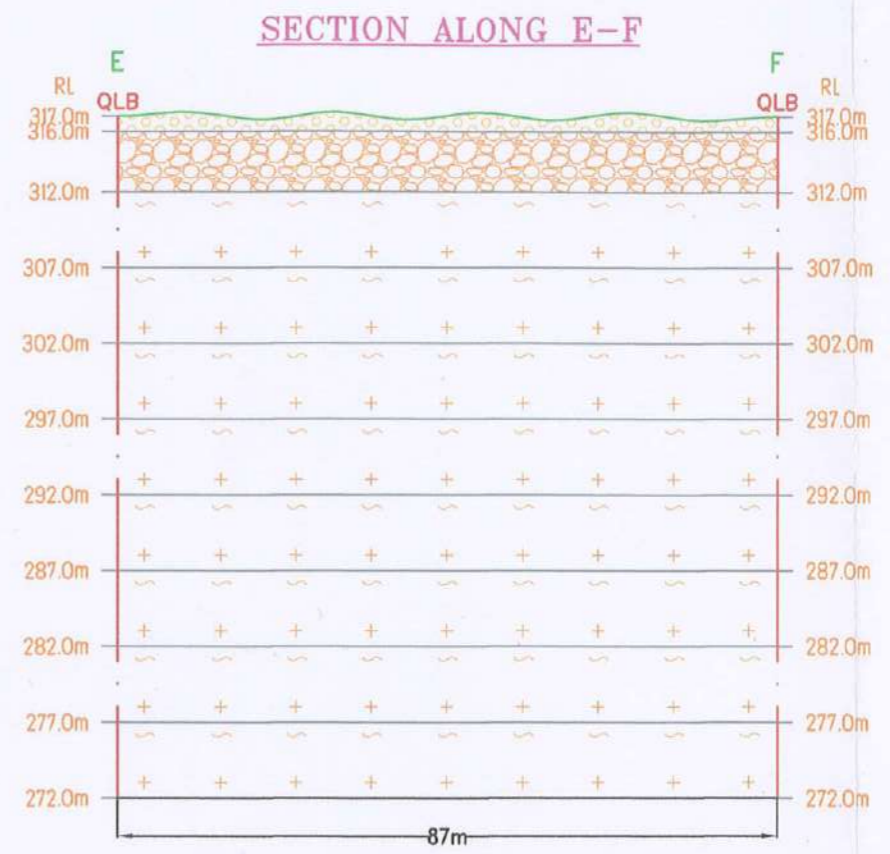
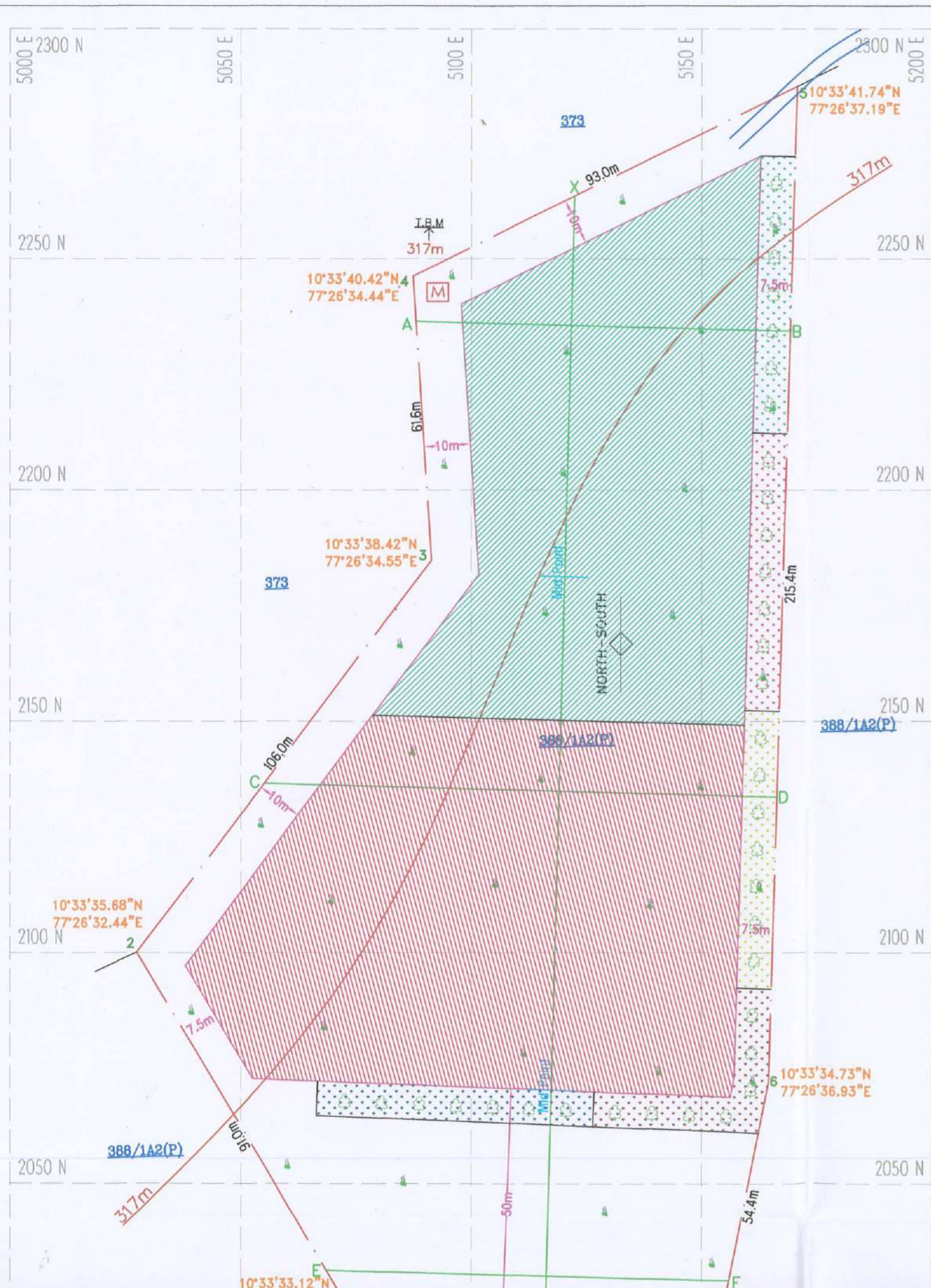
**QUARRY APPLIED LEASE AREA:**

S.F.NO : 388/1A2 (P),  
EXTENT : 2.33.10 Ha,  
VILLAGE : KOLUMANKONDAN,  
TALUK : PALANI,  
DISTRICT : DINDIGUL.

**INDEX**

Q.L. APPLIED BOUNDARY

7.5m, 10m & 50m SAFETY DISTANCE



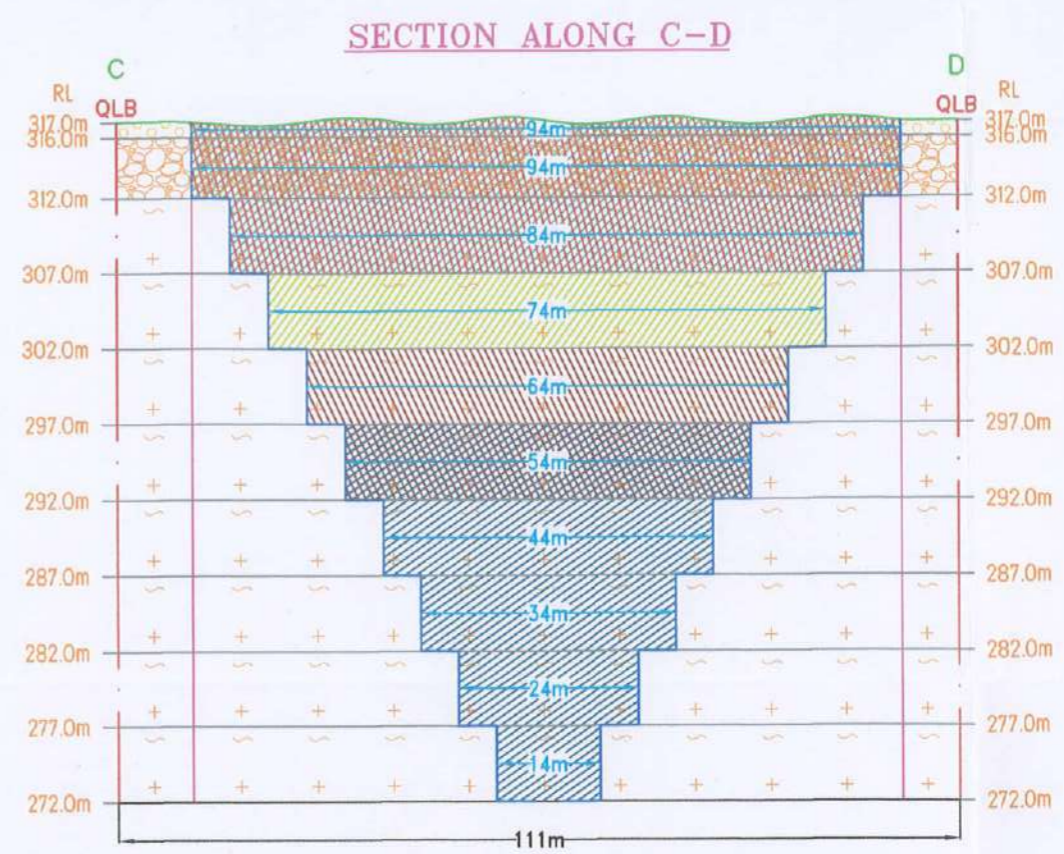
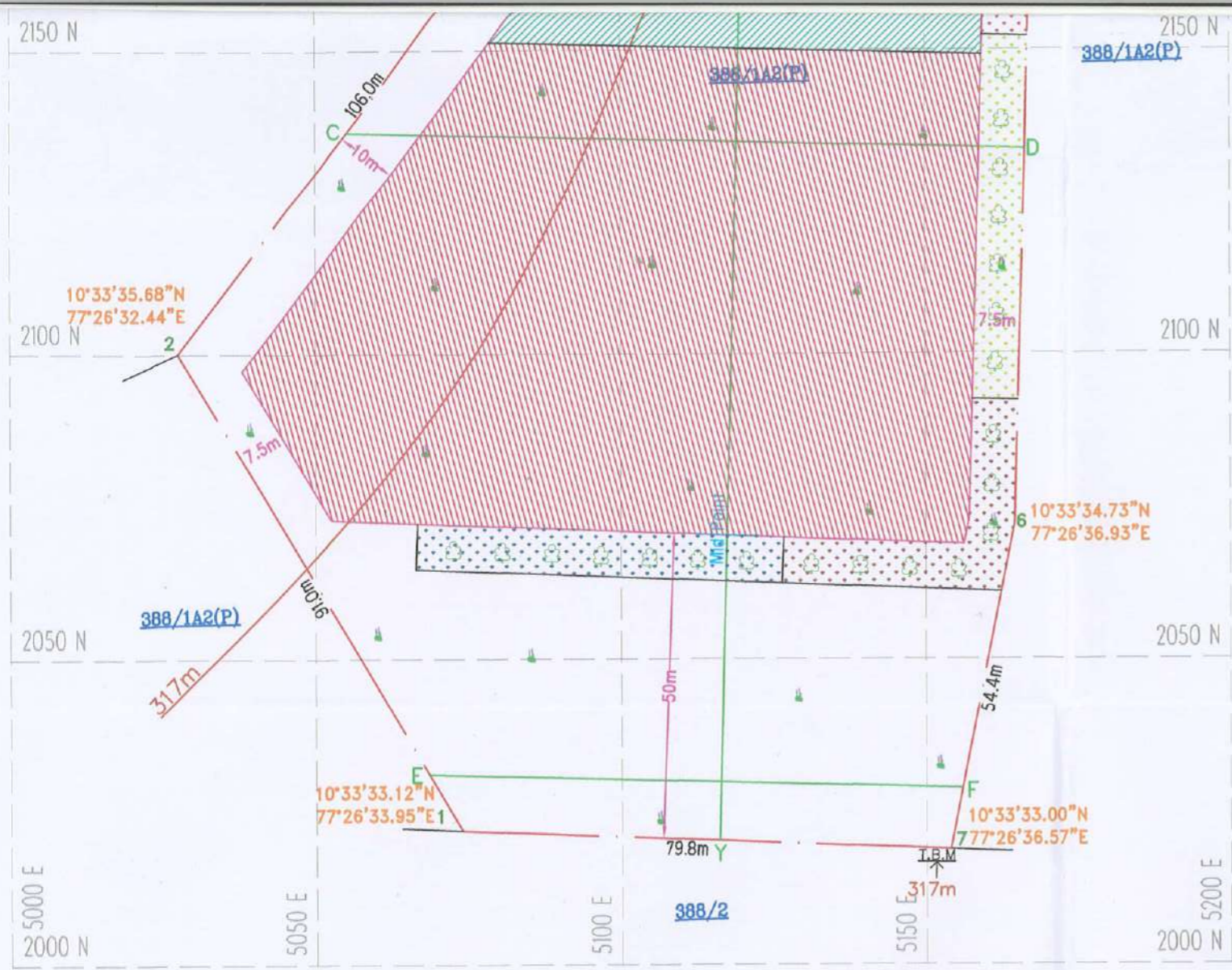
PRESENT & POST	
DESCRIPTION	PRES AREA
AREA UNDER QUARRYING	N
INFRASTRUCTURE	N
ROADS	N
GREEN BELT	N
UN-UTILIZED AREA	2.33
<b>GRAND TOTAL</b>	<b>2.33</b>

1st yr Proposed area
2nd yr Proposed area
3rd yr Proposed area
4th yr Proposed area
5th yr Proposed area
1st yr Proposed area
2nd yr Proposed area
3rd yr Proposed area
4th yr Proposed area
5th yr Proposed area

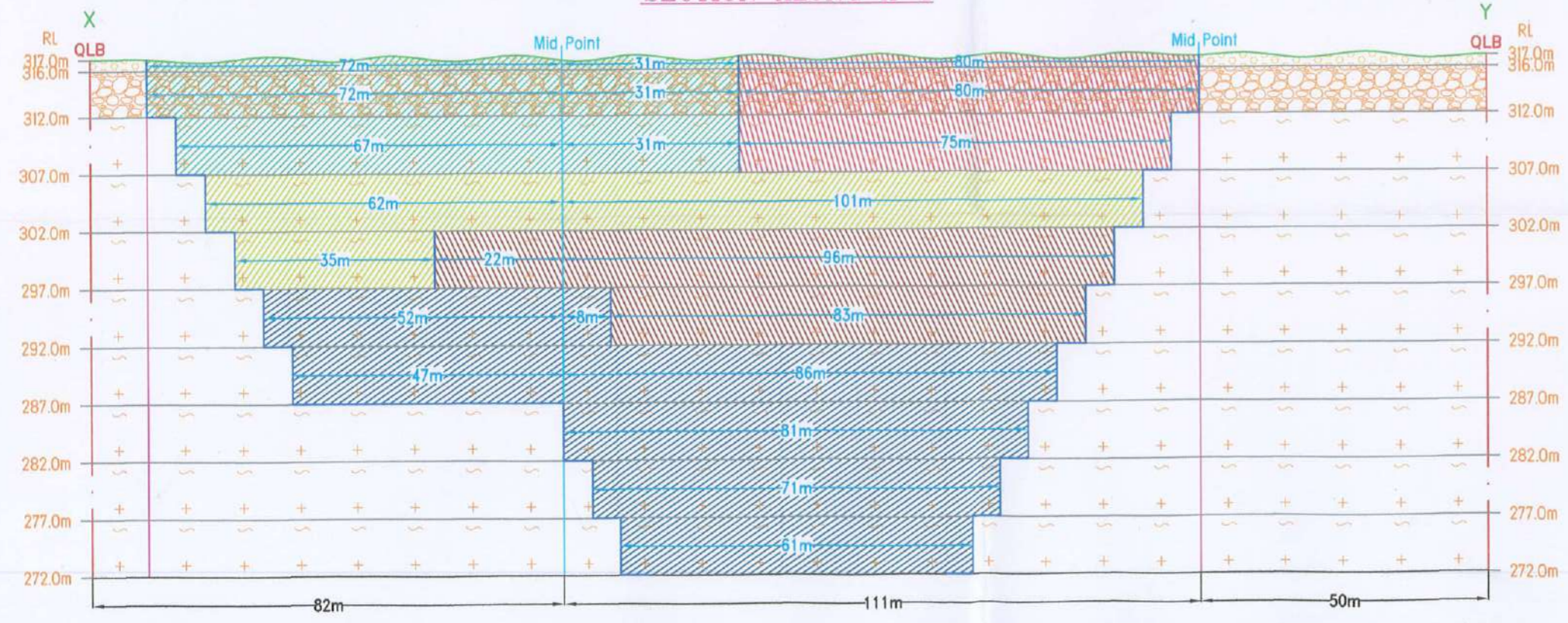
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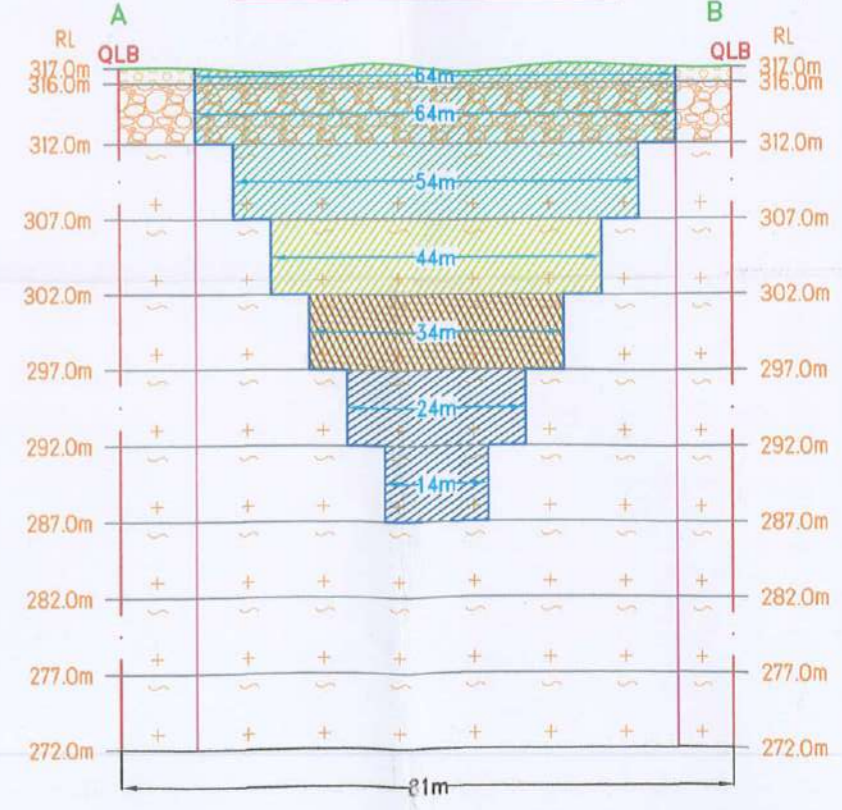
3rd yr Proposed area  
 4th yr Proposed area  
 5th yr Proposed area

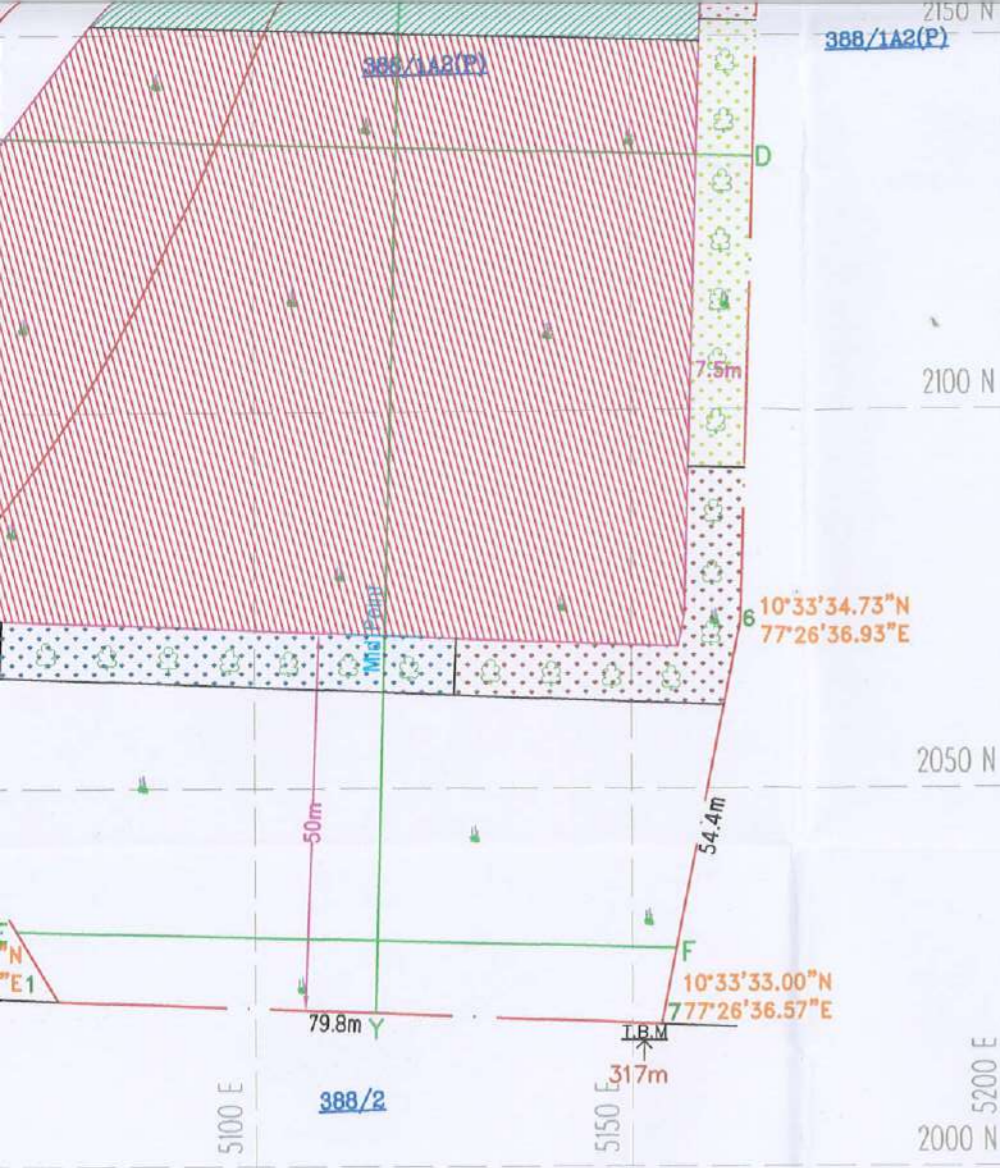


SECTION ALONG X-Y



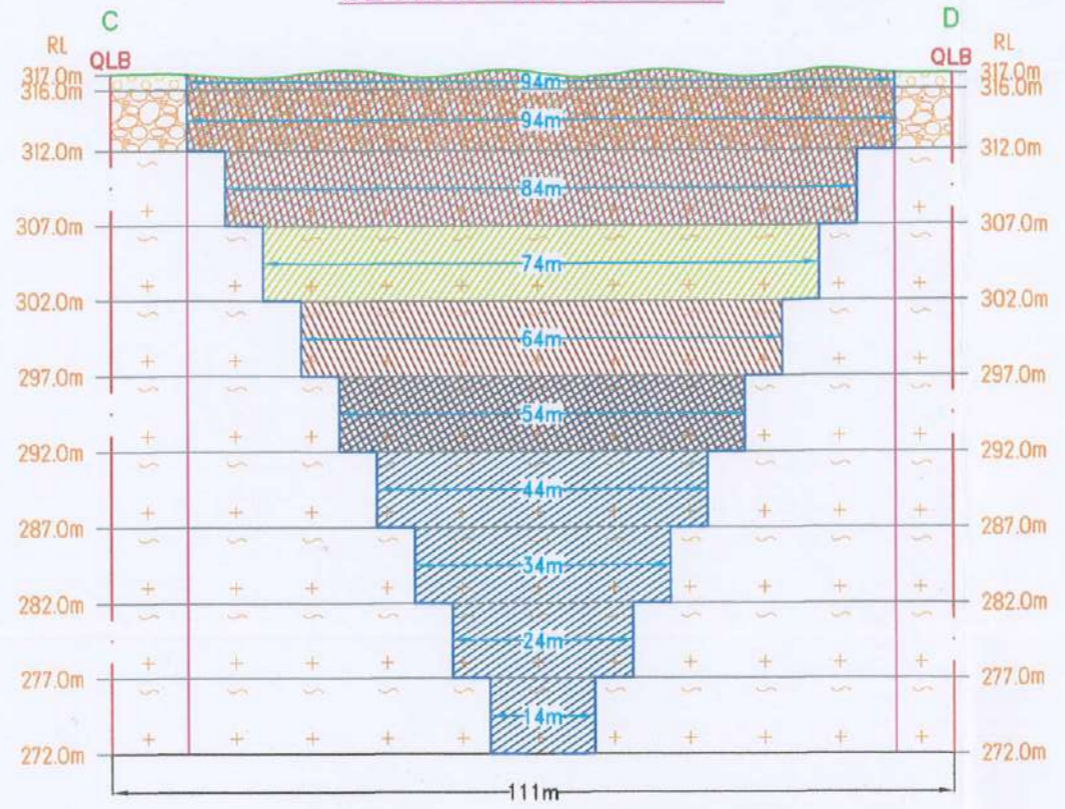
SECTION ALONG A-B



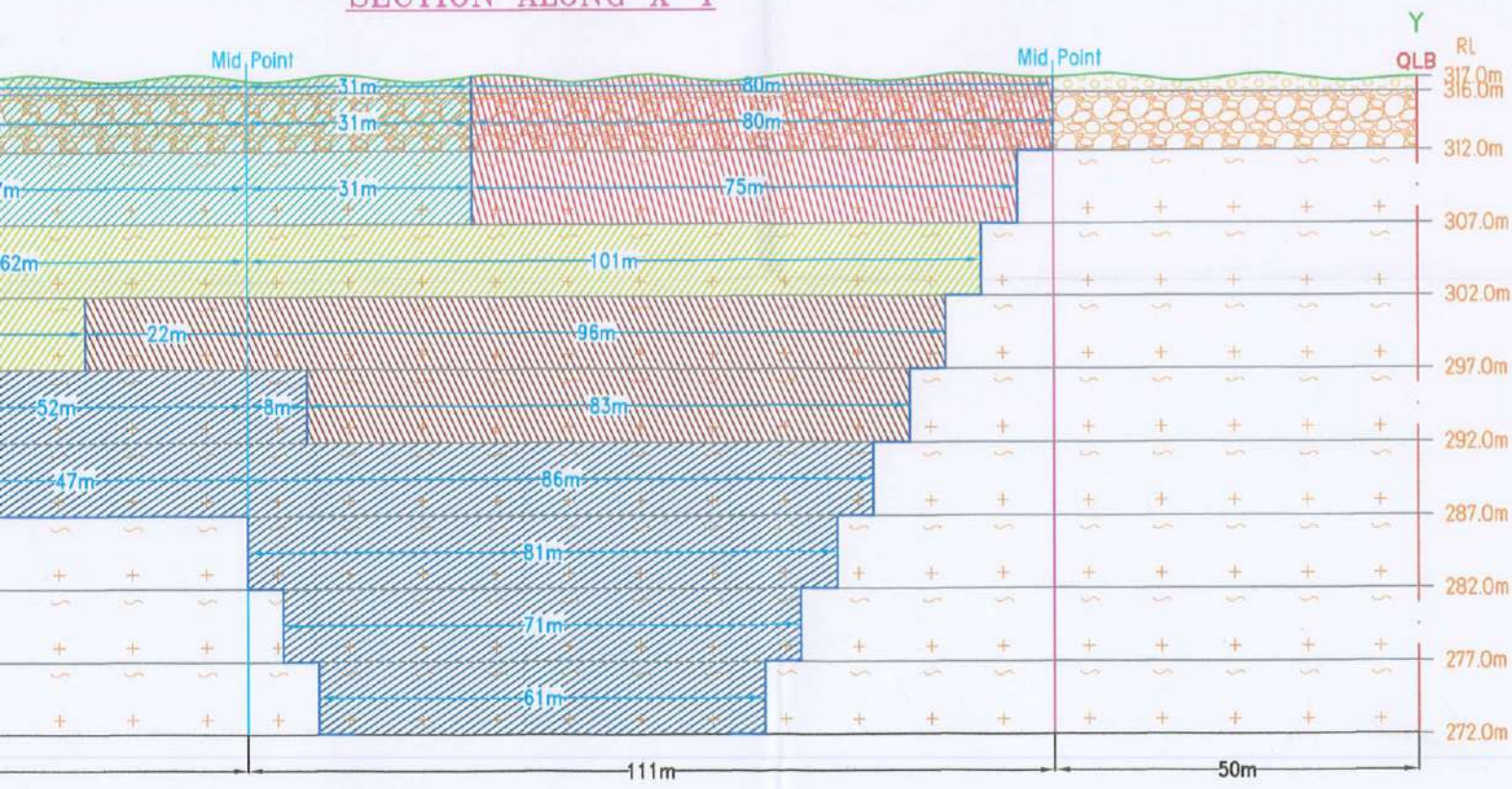


3rd yr Proposed area to be Planted	
4th yr Proposed area to be Planted	
5th yr Proposed area to be Planted	

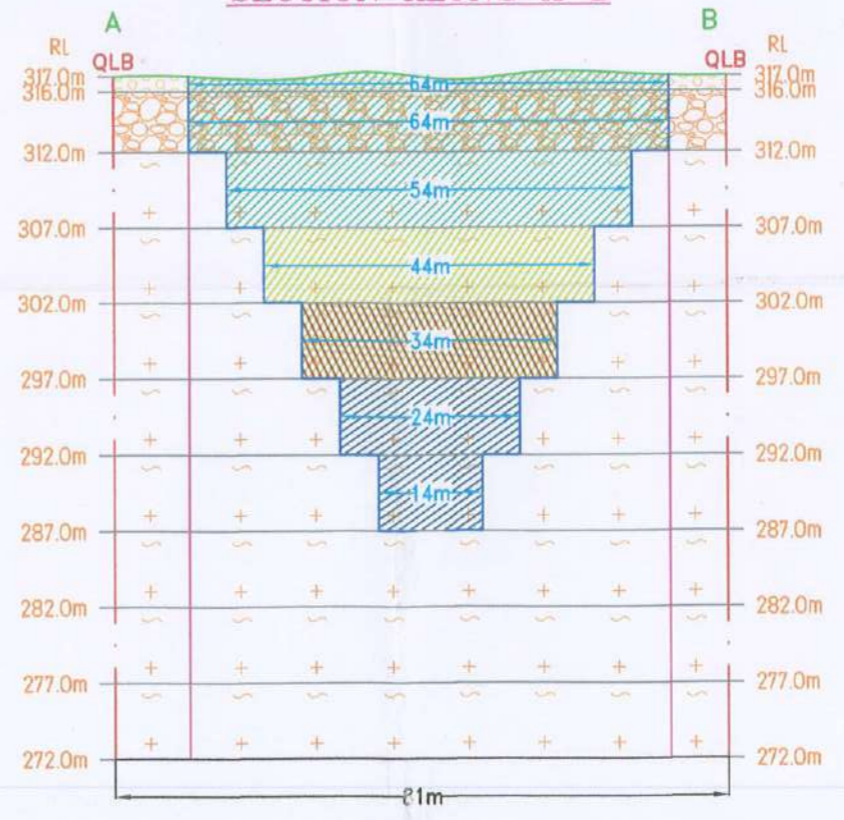
**SECTION ALONG C-D**



**SECTION ALONG X-Y**



**SECTION ALONG A-B**



**PLATE NO-III**  
 DATE OF SURVEY : 05.05.2022

**APPLICANT:**  
 THIRU. T.KUMARESH,  
 S/o. (LATE) THANGAMUTHU,  
 MADUKKARAI VIA,  
 COIMBATORE DISTRICT.

**QUARRY APPLIED LEASE AREA:**  
 S.F.NO : 388/1A2 (P),  
 EXTENT : 2.33.10 Ha,  
 VILLAGE : KOLUMANKONDAN,  
 TALUK : PALANI,  
 DISTRICT : DINDIGUL.

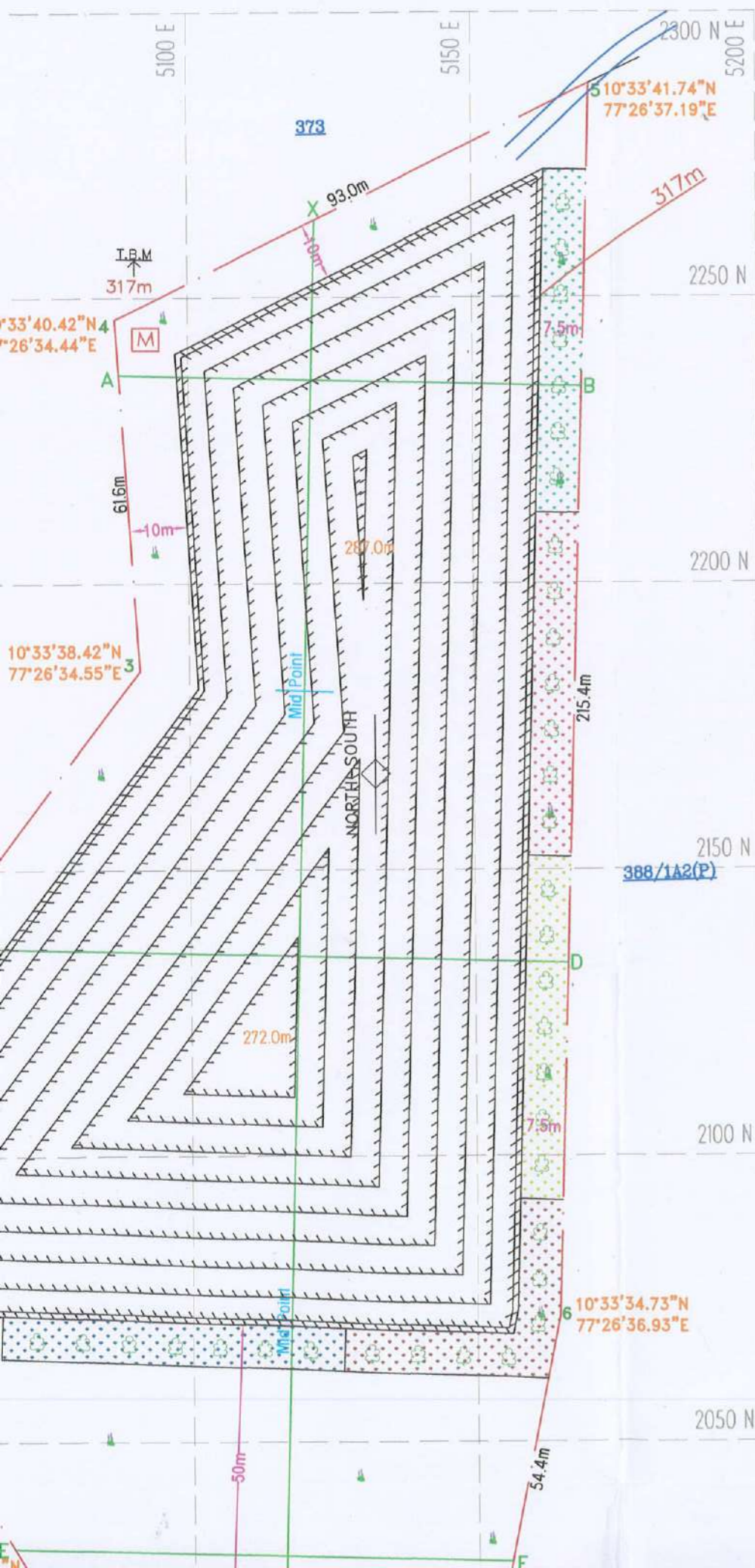
**INDEX**

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

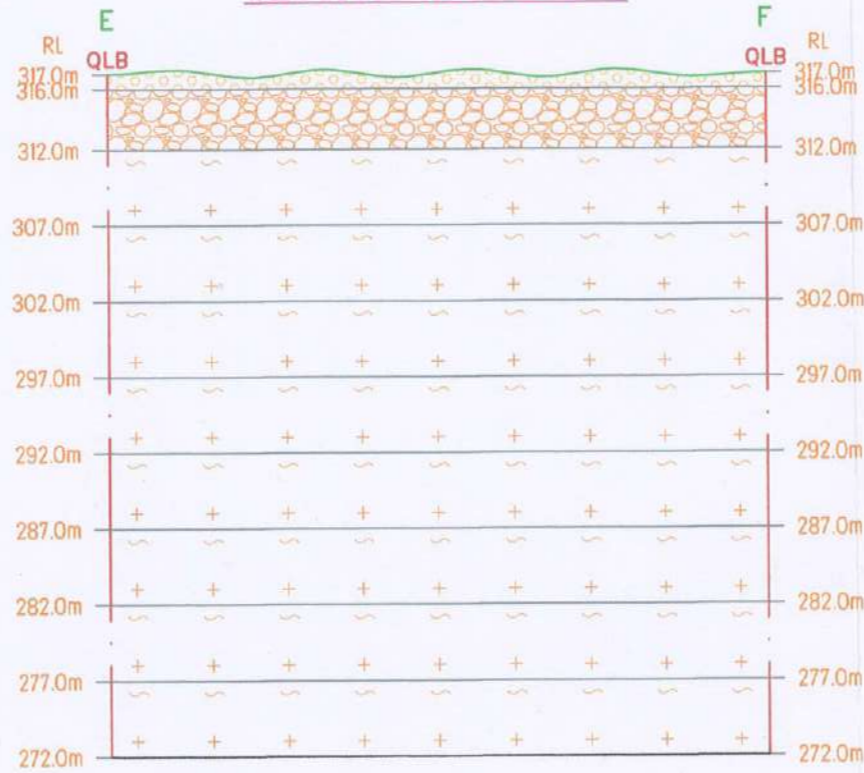
**TOPOGRAPHY, GEOLOGICAL & YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS**  
 SCALE 1 : 1000  
 SECTIONS HOR 1:1000, VER 1:500

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

C. NATARAJAN, M.Sc, M.Phil.,  
 QUALIFIED PERSON



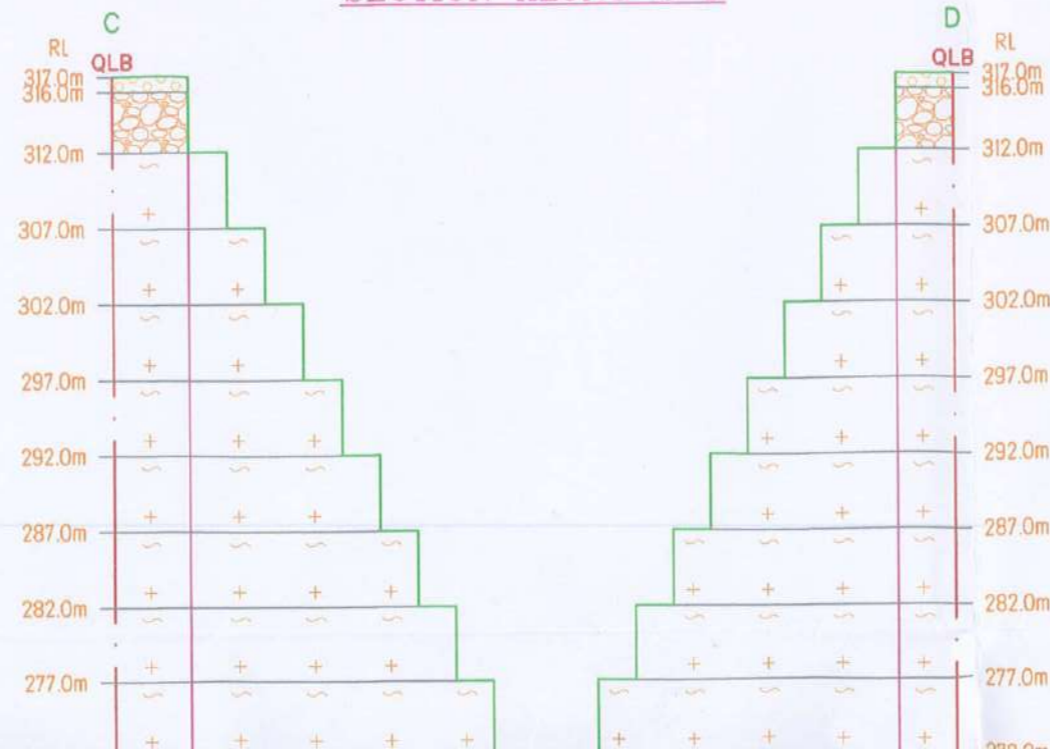
**SECTION ALONG E-F**



**ULTIMATE PIT DIMENSION**  
 L183m(Max)X82m(Avg)XD45m(Max)

- 1st yr Proposed area to be Planted
- 2nd yr Proposed area to be Planted
- 3rd yr Proposed area to be Planted
- 4th yr Proposed area to be Planted
- 5th yr Proposed area to be Planted

**SECTION ALONG C-D**



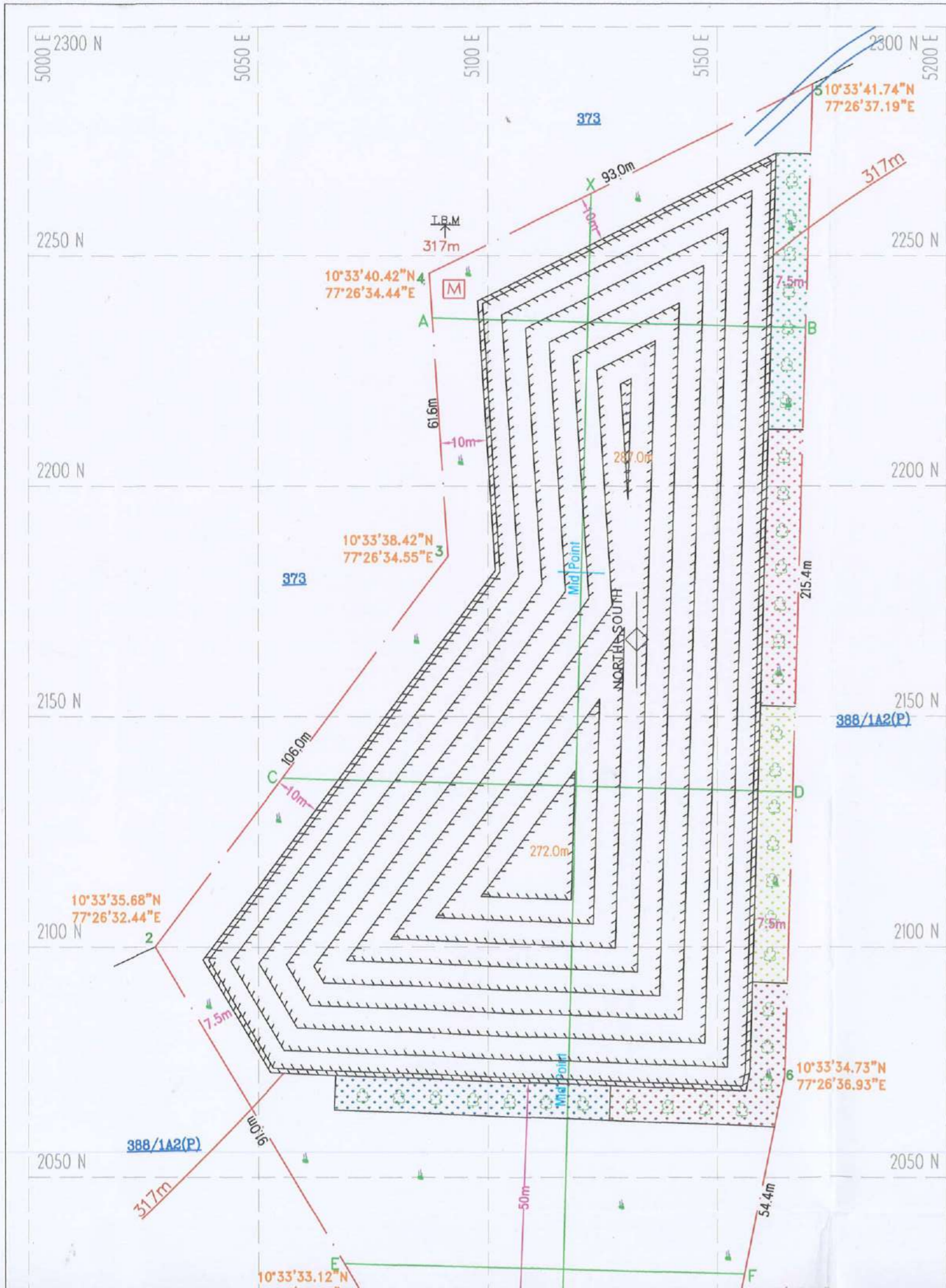
**PLATE NO-IV**  
 DATE OF SURVEY : 05.05.2022

**APPLICANT:**  
 THIRU. T.KUMARESH,  
 S/o. (LATE) THANGAMUTHU,  
 MADUKKARAI VIA,  
 COIMBATORE DISTRICT.

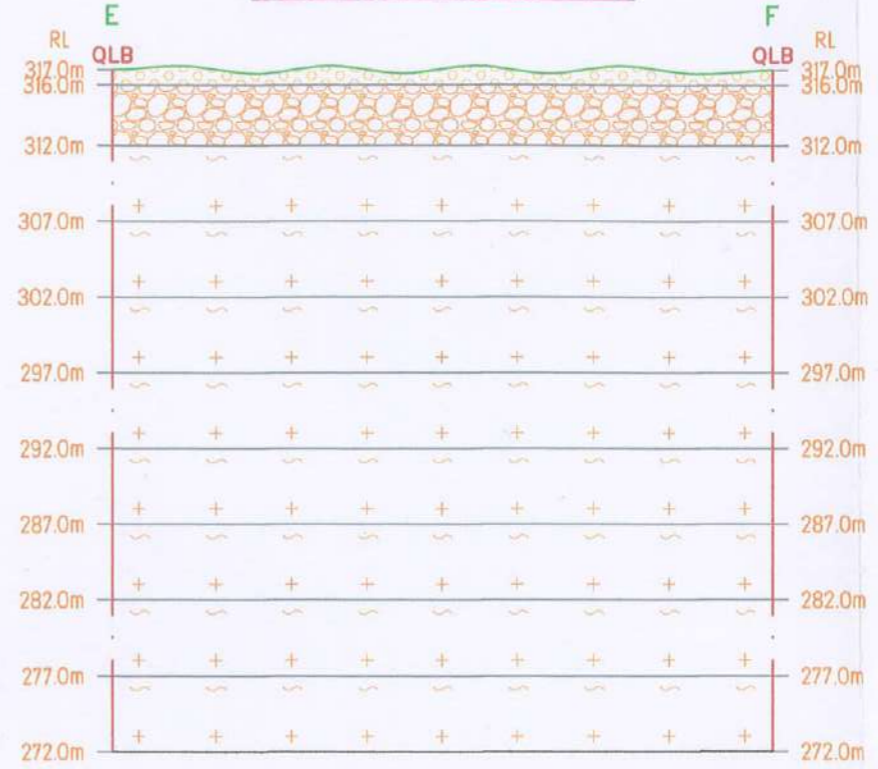
**QUARRY APPLIED LEASE AREA:**  
 S.F.NO : 388/1A2 (P),  
 EXTENT : 2.33.10 Ha,  
 VILLAGE : KOLUMANKONDAN,  
 TALUK : PALANI,  
 DISTRICT : DINDIGUL.

**INDEX**

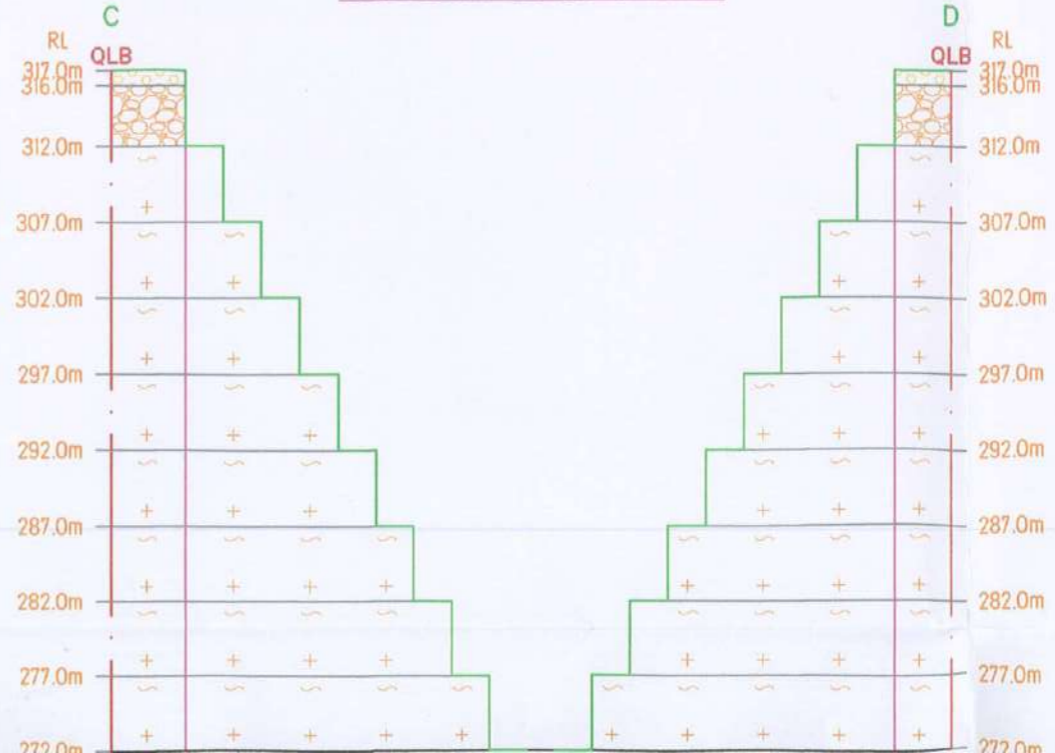
- Q.L. APPLIED BOUNDARY
- 7.5m, 10m & 50m SAFETY DISTANCE



SECTION ALONG E-F



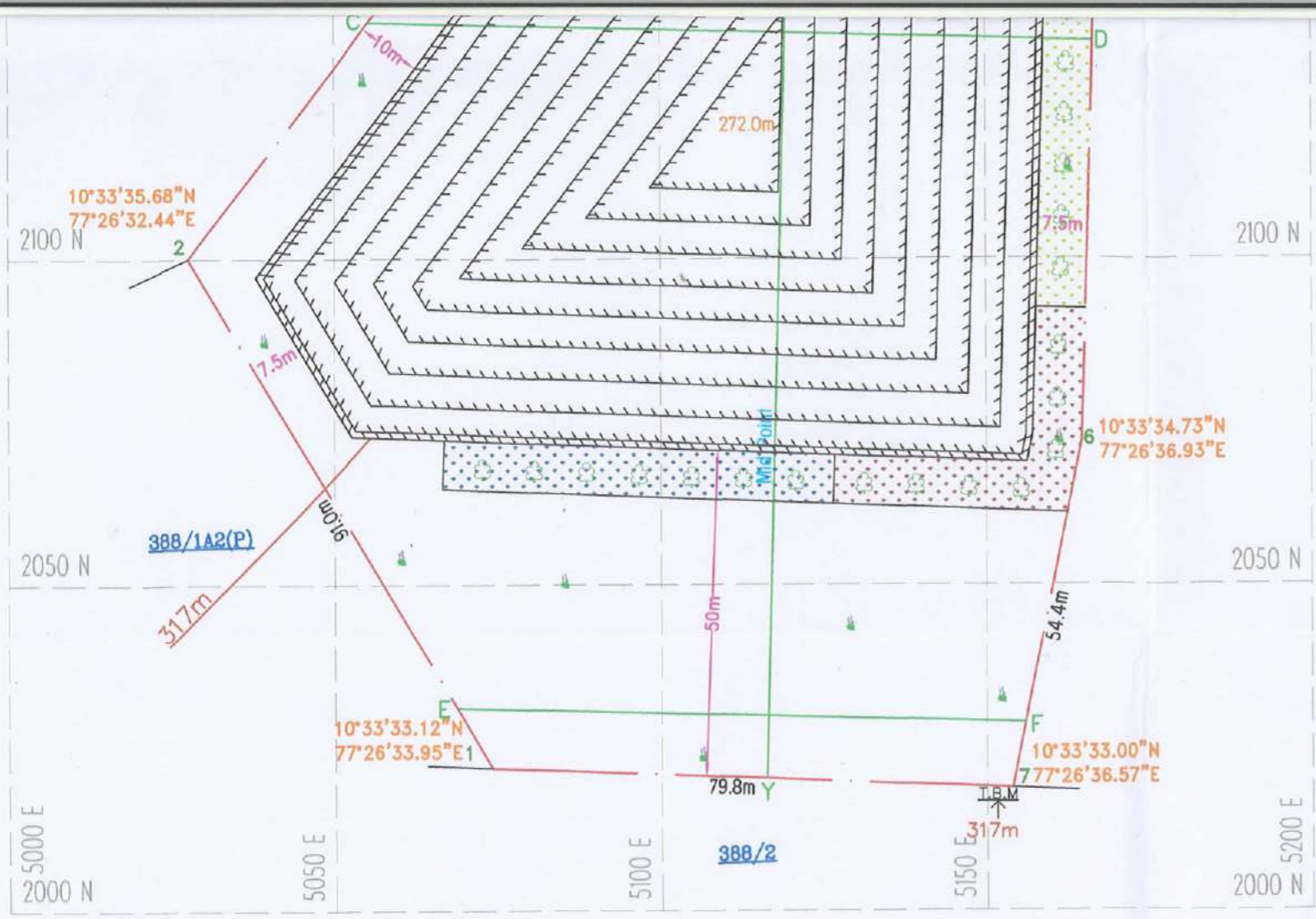
SECTION ALONG C-D



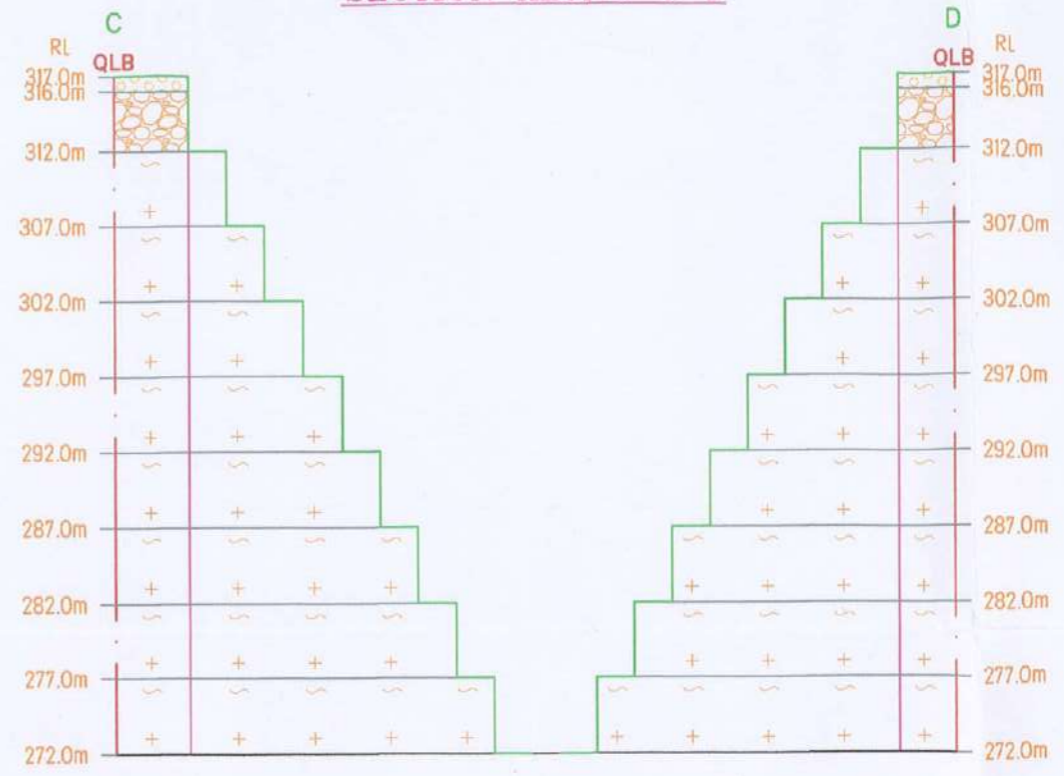
ULTIMATE  
L183m(Max)X82

- 1st yr Proposed area
- 2nd yr Proposed area
- 3rd yr Proposed area
- 4th yr Proposed area
- 5th yr Proposed area

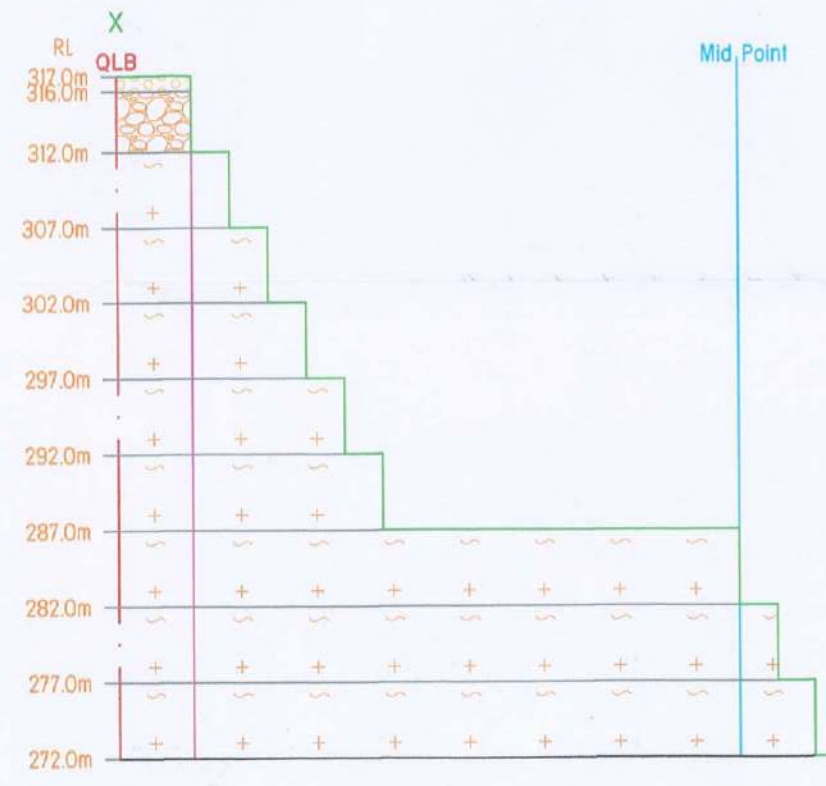
PL  
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S.F  
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TA  
DIS  
Q.L  
7.5



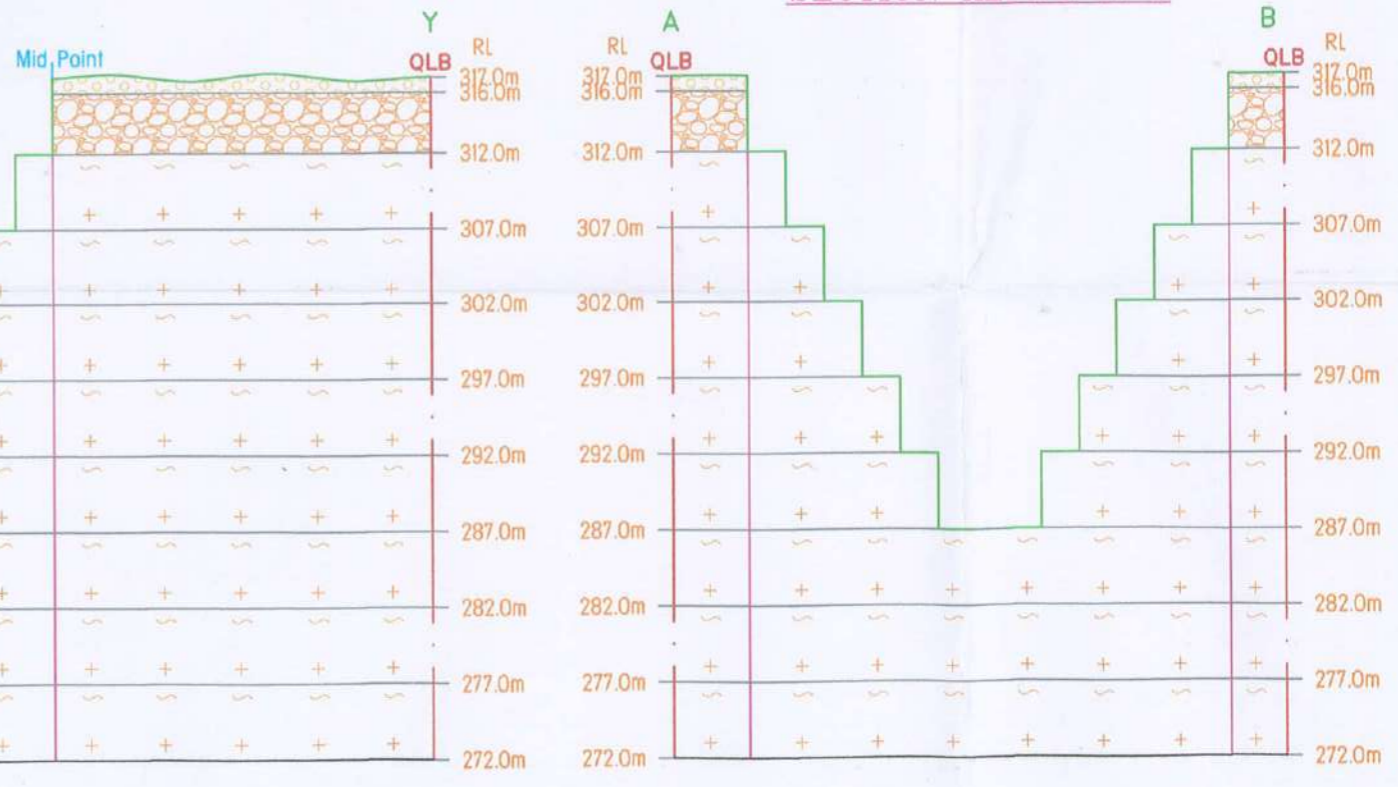
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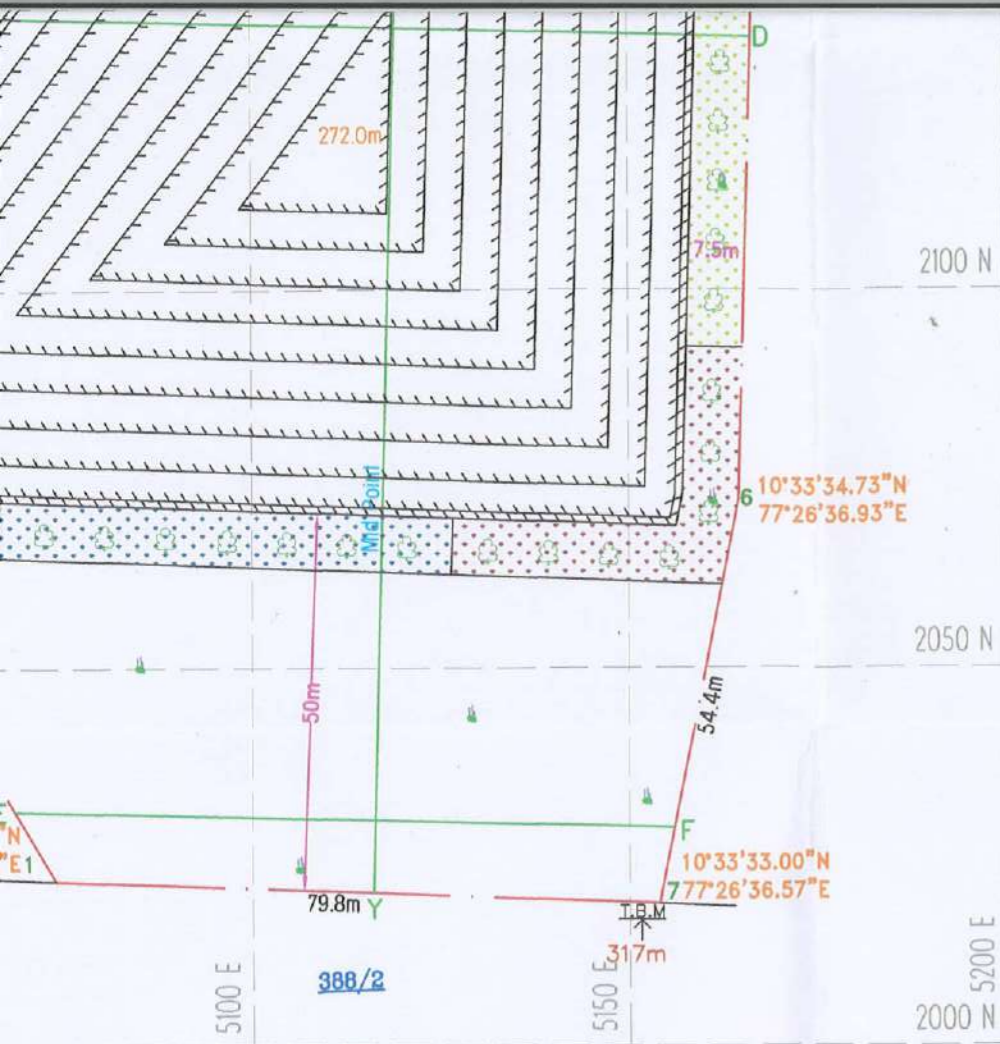


SECTION ALONG X-Y

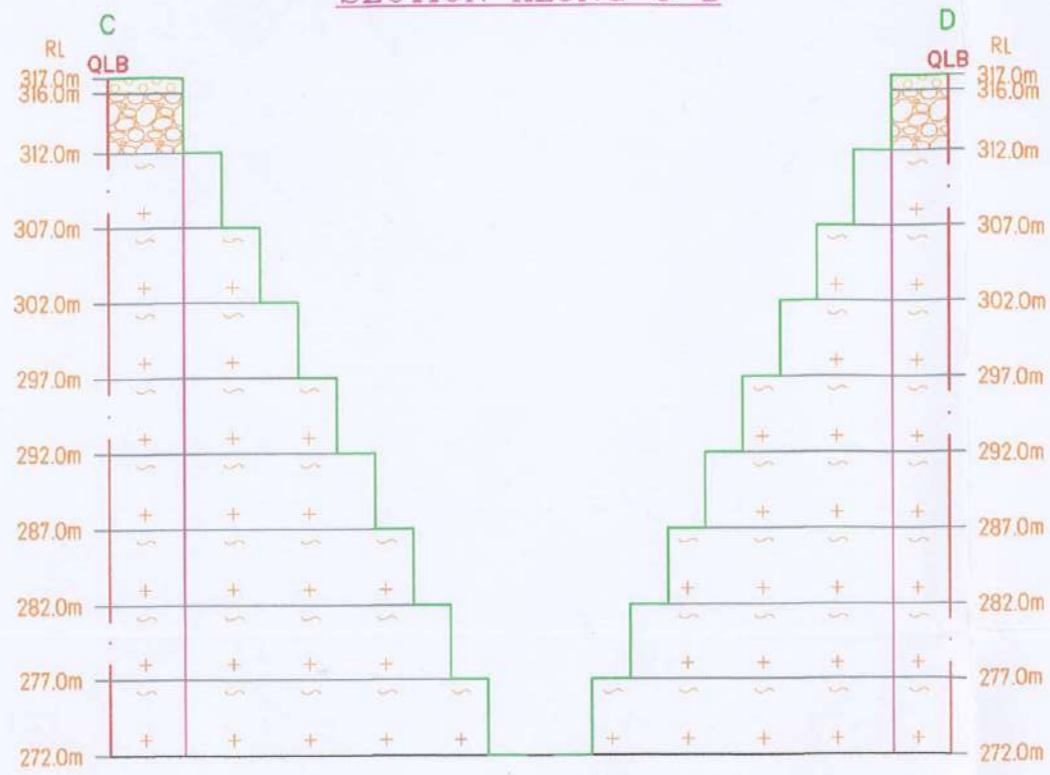


SECTION ALONG A-B

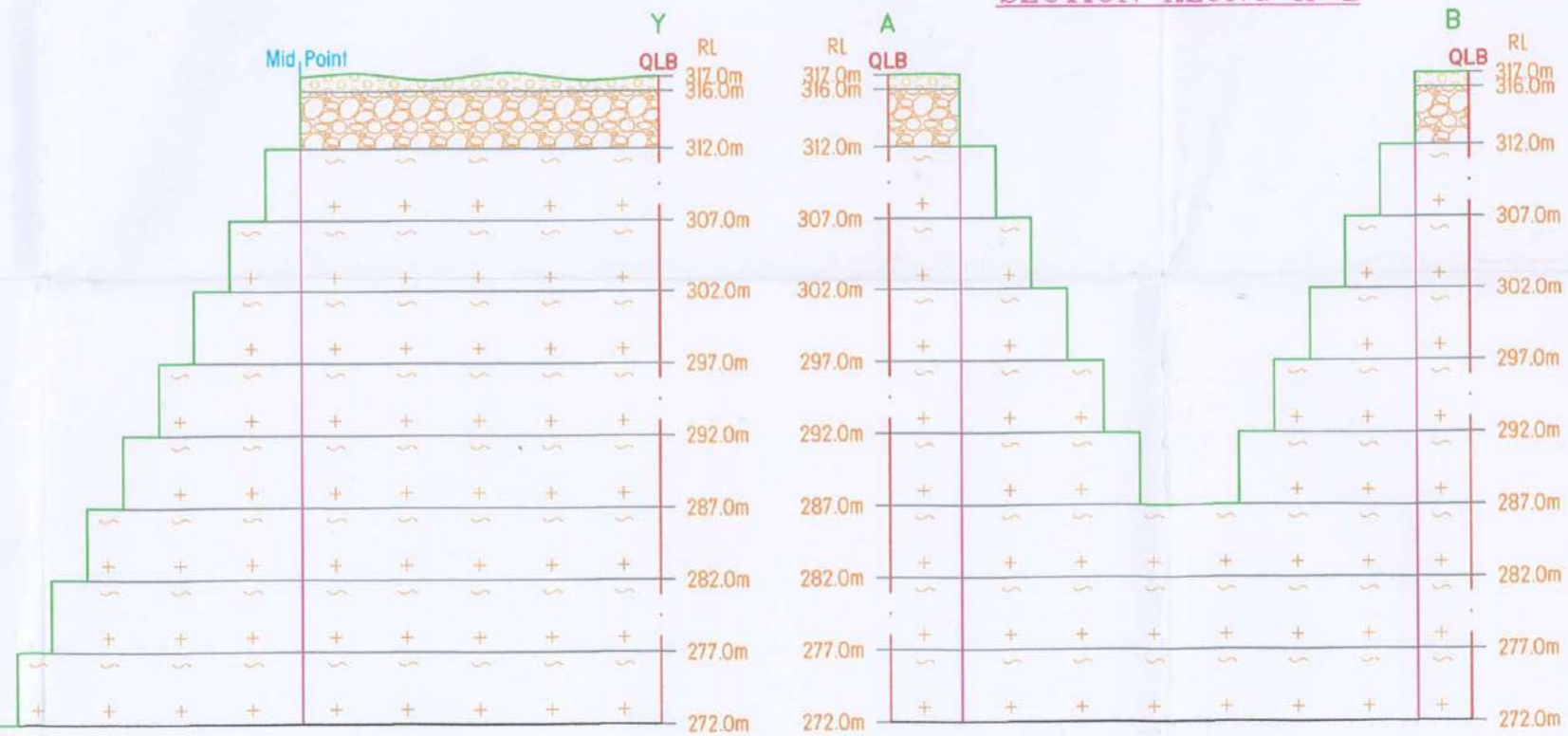
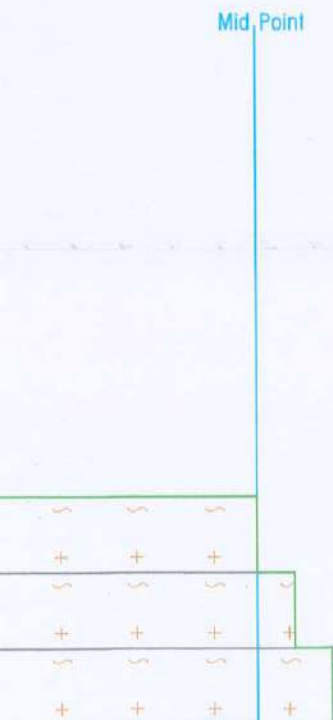




**SECTION ALONG C-D**



**SECTION ALONG X-Y**



**PLATE NO-IV**

DATE OF SURVEY : 05.05.2022

**APPLICANT:**

THIRU. T.KUMARESH,  
S/o. (LATE) THANGAMUTHU,  
MADUKKARAI VIA,  
COIMBATORE DISTRICT.

**QUARRY APPLIED LEASE AREA:**

S.F.NO : 388/1A2 (P),  
EXTENT : 2.33.10 Ha,  
VILLAGE : KOLUMANKONDAN,  
TALUK : PALANI,  
DISTRICT : DINDIGUL.

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Q.L. APPLIED BOUNDARY	
7.5m, 10m & 50m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
CONTOUR	
SCRUB	
GRAVEL	
WEATHERED ROCK	
ROUGH STONE	
STRIKE & DIP	
PROPOSED QUARRY PIT	

**CONCEPTUAL PLAN & SECTIONS**

SCALE 1 : 1000

SECTIONS HOR 1:1000, VER 1:500

**PREPARED BY:**

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

C. NATARAJAN, M.Sc., M.Phil.,  
QUALIFIED PERSON